**CURRICULUM VITAE**

**Stephen George Waxman**

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**Email**: Stephen.Waxman@yale.edu

1967 A.B., cum laude, Harvard College

1970 Ph.D., Albert Einstein College of Medicine, New York

1972 M.D., Albert Einstein College of Medicine

1. M.A. (Hon.), Yale University

Current

Appointments Senior Scientific Advisor, *OliPass BioTherapeutics*, (2019 - )

*Yale University* (1986 - ):

Professor of Neurology, Neurobiology, and Pharmacology, Yale Medical School,

Bridget Marie Flaherty Professor, (2005 - )

Director, Center for Neuroscience & Regeneration Research, VA CT Healthcare, West Haven, CT

*University College London and Institute of Neurology, Queen Square, London* (1998 - ):

Visiting Professor of Clinical Neurology, Anatomy and Biology

Co-Director, Yale-University College London Collaboration on Neural Repair

1986-2009         Chairman, Dept. of Neurology, Yale Medical School

                      Neurologist-in-Chief, Yale-New Haven Medical Center

1978-1986 *Stanford University*:

Chairman, Neuroscience Program (1982-1986)

Vice Chairman, Department of Neurology (1981-1986)

Professor of Neurology (1978-1986)

Chief, Neurological Unit, VA Hospital, Palo Alto, CA (1978-1986)

1975-1978 *Harvard University / Massachusetts Institute of Technology*:

Associate Professor of Neurology, Harvard Medical School (1977-1978)

Visiting Associate Professor of Biology, MIT (1977-1978)

Assistant Professor of Neurology, Harvard Medical School (1975-1977)

Visiting Assistant Professor of Biology, MIT (1975-1977)

1972-1975 Clinical Fellow in Neurology, Harvard Medical School; Resident in Neurology,

Boston City Hospital

1971-1974 Lecturer, Neurobiology Training Program, Marine Biological Laboratory, Woods Hole, MA

1969 Epilepsy Foundation Chauveau Fellow, Cerebral Functions Research Group,

University College London

Certification and Licensure:

1973 Diplomate, National Board of Medical Examiners

1973 Massachusetts Board of Registration in Medicine

1977 Diplomate, American Board of Psychiatry and Neurology

1978 California Board of Registration in Medicine

1986 Connecticut Physicians and Surgeon's License

Awards and Honors (Selected Listing):

1973 Trygve Tuve Memorial Award for Outstanding Contributions in the Biomedical Sciences, NIH

1975 Research Career Development Award, NINCDS

1987 Established Investigator, National Multiple Sclerosis Society

1991 Distinguished Alumnus Award, Albert Einstein College of Medicine

1991 Fellow, Royal Society of Medicine

1993 Member, Dana Alliance for Brain Initiatives

1994 Listed in *The Best Doctors in America*.

1995 The Adrian Lecture (Xth International Congress of Clinical Neurophysiology)

1996 Elected to Institute of Medicine, National Academy of Sciences

1999 Landmark Award for Biomedical Research

1999 Wartenberg Award, American Academy of Neurology

1. Honorary Senior Fellow, Institute of Neurology, London
2. Dystel Prize for Research on Multiple Sclerosis, American Academy of Neurology/NMSS

2004 Reingold Award, National Multiple Sclerosis Society

2005 Honorary Member, Association of British Neurologists

2009 W.I. McDonald Award, British Multiple Sclerosis Society

2009 William S Middleton Award (highest scientific honor of the Dept of Veterans Affairs, presented at

Ceremonies at the U.S. Capitol).

2009 Annual Review Prize, The Physiological Society (Premier Award of the Society; previous awardees include J.C. Eccles, A.F. Huxley, A.L. Hodgkin)

2013     Paul B. Magnuson Award for Outstanding Achievement in Rehabilitation Research, U.S. Department of Veterans Affairs

2013 American Neurological Assoc/Annals of Neurology Prize for Distinguished Contribution to Clinical Neuroscience

2014 Soriano Award, American Neurological Association

2017 Elected Fellow, The Physiological Society

2018 Julius Axelrod Prize, Society for Neuroscience

2021 Mitchell B. Max Award for Research on Pain, American Academy of Neurology

Visiting Lectures and Professorships (Selected Listing):

1987 Denny-Brown Lecturer, Boston Society for Neurology and Psychiatry

1989 Dean's Visiting Professor, Brown University

1990 Annual Royal College Lecturer, Canadian Neurological Society

1996 Geschwind Visiting Professor, Harvard Medical School

1998 Levy Visiting Professor, Washington University

1. Pfizer Distinguished Lecturer, University College London

2001 Norman Allen Award, Ohio State University

2002 Charcot Memorial Lecturer, Washington, DC

2004 Donald Munro Lecturer, American Paraplegia Society

2005 R.S. Allison Lecturer, Association of British Neurologists

2005 Arnold Bank Memorial Lecturer, Philadelphia Neurological Society

2006 J.Z. Young Memorial Lecture, University of London

2006 R.B. Aird Visiting Professor, UCSF

2007 K. Casey Visiting Professor, University of Michigan

2007 Annual Treuer Lecture of Mechanisms of Pain, University of Washington

2008 H.K. Beecher Visiting Professor, Massachusetts General Hospital

2008 Killam Visiting Professor, McGill University

2008 Plenary Lecture, International Association for the Study of Pain (IASP)

2009 Annual Review Prize Lecture, The Physiological Society (Premier Award of The Society)

2014 Soriano Award, American Neurological Association

2016 JK Merlis Visiting Professor, University of Maryland

2016 Loren D. Carlson Distinguished Lecture in Physiology, University of California, Davis

2019 Julius Axelrod Memorial Lecture, Axelrod Memorial Symposium, NIH

2019   2nd Annual Talman Lecture on Basic Neuroscience in Clinical Neurology, University of Iowa

2019 Thomas Sabin Visiting Professor, Tufts Medical Center

2021 Mitchell Max Lecture, American Academy of Neurology

Editorial Boards and Editorships:

1977-82,84-88 Associate Editor *Journal of Neurocytology*

1980-2003 Associate Editor *Muscle and Nerve*

1980-2005 Editorial Board *Brain Research*

1982-1993 Editorial Board *Trends in Neurosciences*

1983-1991 Editorial Board *Experimental Neurology*

1983-2013 Associate Editor *Journal of Neurological Sciences*

1986-2018 Editorial Board *International Review of Neurobiology*

1987-1999 Editorial Board *Glia*

1988-2001 Editorial Board *Neurorehabilitation & Neural Repair*

1988-1996 Editorial Board *Developmental Neuroscience*

1989- Editorial Board *Restorative Neurology and Neuroscience*

1990-2001 Editorial Board *Advances in Pharmacology*

1990-1995 Editorial Board *Annals of Neurology*

1992-2011 Editorial Board *Journal of Neurotrauma*

1993- Editorial Board *Clinical Neuroscience*

1994- Editorial Board *The Neurologist*

1994-2020 Editorial Board *Neurobiology of Disease*

1994-2001 Editorial Board *Cerebrovascular Diseases*

1995- Editor-in-Chief *The Neuroscientist*

1995- Editorial Board *Clinical Neurology and Neurosurgery*

1996 Editorial Board *SYNAPSE*

1997-2007 Editorial Board *J. Periph. Nervous System*

1998-2001 Editorial Board *J. Cerebral Blood Flow and Metabolism*

1998-2002 Associate Editor *J. Neurocytol.*

1999-Editorial Board *Molecular Neurobiology*

2001- Editorial Board *Clinical Neuroscience Research*

2004-2021 Editor-in-Chief *Neuroscience Letters*

2004-2016 Advisory Board *Brain*

2005-2022 Advisory Board *Nature Reviews Neurology*

2005-2014 Editorial Board *Neuron-Glia Biology*

2005-2017 Editorial Board *Neurotherapeutics*

2005-2012 Editor *The Journal of Physiology*

2006- Editorial Board *Trends in Molecular Medicine*

2006- Editorial Board *Molecular Pain*

2007- Editorial Board *Channels*

2008- Section Head *Multiple Sclerosis, Faculty of 1000 Medicine*

2011- Editorial Board Pain Management

2012-    Editorial Board  F1000 (Faculty of 1000) Research

2015 - Associate Editor, Pharmacology of Ion Channels and Channelopathies (specialty section of Frontiers in Pharmacology and Frontiers in Neurology)

2016-        Editorial Board     *Neurobiology of Pain*

2017-     Editorial Board Trends in Pharmacological Sciences

2017-          Editorial Board  *Neuronal Signalling*

2018- Advisory Board *Cerebrum*

2018- Advisory Board Neuroglia

*Ad Hoc Reviewer*, *Science, Nature, Neurology, Ann. Internal Med., Arch. Gen. Psychiatr., J. Neurosci, J. Cell Biol., J. Comp. Neurol., J. Neuropath. Exper. Neurol., New Engl. J. Med.*

Advisory Positions (Selected Listing):

1976-78 Advisory Committee, Medical Scientist Training Programs, NIGMS

1978-79 Neurological Disorders Program Project Review Committee, NINCDS

1980-81 Advisory Committee on Regeneration Research Programs, VA Central Office

1980-83, 96-99 Scientific Advisory Committee, National Multiple Sclerosis Society

1981-92 Scientific Advisory Board, Paralyzed Veterans of America, Spinal Cord Research Foundation

1981 Organizer, International Workshop on Demyelinating Diseases, NMSS

1982 Organizer and Chairman, Symposium on Pathophysiology of the Cell Membrane, Fifth International Congress on Neuromuscular Diseases, Marseilles

1982-85 Scientific Advisory Committee, National Spinal Cord Injury Association

1982-91 Advisory Board, Regeneration Research Programs, VA Central Office

1985 Organizing Committee, International Regeneration Research Symposium, Asilomar

1986 Organizer and Chairman, Symposium on Pathobiology of the Axon, International Congress of Neuropathology, Stockholm

1987-92 National Coordinating Council on Spinal Cord Injury

1987-88 Advisory Group on Fundamental Approaches to Neurological Disease, The Neuroscience Institute, Rockefeller University

1988- Corporation Member, Marine Biological Laboratory, Woods Hole, MA.

1988- Medical Advisory Board, National Multiple Sclerosis Society

1990-2005 External Advisory Committee, University of Puerto Rico School of Medicine

1989 Chairman, Committee on Scientific Basis of Neurological Rehabilitation, American Academy of Neurology

1990-92 Committee on Decade of the Brain, American Academy of Neurology

1990-93 Scientific Advisory Council, American Paralysis Association

1990-95 Board of Scientific Counselors, NINDS

1991 Organizer and Chairman, Symposium on Molecular and Cellular Approaches to the Treatment of Brain Disease, ARNMD

1991-98 Institute of Medicine, Board on Neuroscience and Behavior

1991 Fellow, Stroke Council, American Heart Association

1992-96 U.S. National Committee, International Brain Research Organization

1994 Organizing Committee, Symposium on Neuron-Glia Interactions, Prague

1996 Organizing Committee, Altschul Symposium on Cell Biology & Pathology of Myelin, Saskatoon.

1. Organizing Committee, Symposium Advances in Ion Channel Research, San Francisco

1999-2001 Advisory Committee on Multiple Sclerosis: Current Status and Strategies for the Future, Institute of Medicine, National Academy of Sciences

2000 Chairman and Organizer, Novartis Foundation Symposium on Sodium Channels and Neuronal Hyperexcitability

2000 Organizer and Co-Chairman, National MS Society Workshop on Neuronal Injury in MS

1. International Advisory Board, Center for Neurosciences, University of Heidelberg
2. Search Committee for Director, NINDS

2002-2003 International Union of Pharmacology, Subcommittee on Sodium Channels

1. Laboratory Science Blue Ribbon Panel, U.S. Dept. of Veterans Affairs
   1. Committee on Spinal Cord Injury, Institute of Medicine, National Academy of Sciences

2007- Scientific Advisory Board, MRC Translational Research Center on Neuromuscular Diseases,

University College London

2008-2011 Dept of Veterans Affairs, National Research Advisory Committee on OEF/OIF Research

2008- Research Programs Advisory Committee, National Multiple Sclerosis Society

2008-2009 Blue Print Pain/Roadmap Transformative R01 Work Group, NIH

2008- UCL Neuroscience Scientific Advisory Board

2009-2010 Chairman and Organizer, Symposium on Ion Channels and Analgesia, 16th World Congress on Pharmacology, Copenhagen

2010 Chairman, Symposium on Ion Channelopathies: New Windows on Complex Disease and Therapy

International Congress on Pharmacology, Copenhagen

2010 Editor (with D.M. Kullmann), *Journal of Physiology*, Special Issue on Neurological Channelopathies

2010- China Medical University Clinical Trial Center of Excellence Advisory Board

2010-2011 Planning Committee, Institute of Medicine (IOM) Interest Group on Neuroscience, Behavior, and Brain Function & Disorders

2011 Editor (with J. Vandenberg) Hodgkin-Huxley 60th Anniversary Special Issue, *Journal of Physiology*

2011- 2012  Advisory Committee on Peer Review, Office of Research & Development, U.S. Dept of Veterans Affairs

2011-     Committee on Charting Rehabilitation Research for the Future, U.S. Dept of Veterans Affairs

2011-       Advisory Board on Neuroscience Interest Group, Institute of Medicine of the National Academy of Sciences

2012-2015       National Research Advisory Council, VA (Advises Secretary of Veterans Affairs)

2013- U.S. Department of Veterans Affairs, Steering Committee, Million Veterans Genomics Project (MVP)

2018-       Advisory Committee on Clinical Neurophysiology: Guidelines, International Federation of Clinical Neurophysiology

2018- International Federation of Clinical Neurophysiology (IFCN), Working Group on Consensus Guidelines for Measurement of Axonal Excitability

2019 Scientific Advisory Board, Retreat on Precision Medicine and Ion Channels, Vancouver, BC

2020- Chairman, Scientific Advisory Board, OliPass BioTherapeutics

Societies: (Selected Listing):  American Academy of Neurology (Fellow, 1989), International Brain Research Organization, Peripheral Nerve Study Group, American Association for the Advancement of Science, Society for Neuroscience, American Neurological Association (Fellow, 1980; Councilor, 1991), World Federation of Neurology, Association for Research in Nervous and Mental Diseases (Trustee, 1987-  ; President, 1991), Association of University Professors of Neurology, Society for Neurotrauma

**Books Edited or Authored**

Waxman, S.G. (ed.)**.** Physiology and Pathobiology of Axons, Raven Press New York, 1978.

Waxman, S.G. and Ritchie, J.M. (eds.). Demyelinating Diseases: Basic and Clinical Electrophysiology, Raven Press, New York, 1981.

Waxman, S.G. (ed.). Functional Recovery in Neurological Disease, Raven Press, New York, 1988.

Byrne, T.N. and Waxman, S.G. Spinal Cord Compression, F.A. Davis Co., Philadelphia, 1990.

Yu, A.C.H., Hertz, L., Norenberg, M.D., Syková, E., and Waxman, S.G., (eds.) Neuronal-Astrocytic Interactions, Elsevier Publ. Co., Amsterdam, 1992.

Waxman, S.G., (ed.). Molecular and Cellular Approaches to the Treatment of Neurological Disease, Raven Press, New York, 1993.

Waxman, S.G., Kocsis, J.D. and Stys, P.K. (eds.). The Axon, Oxford University Press, New York, 1995.

Waxman, S.G. Correlative Neuroanatomy, Appleton and Lange, Stamford, 1996, 2000; revised as Clinical Neuroanatomy, McGraw-Hill, 2003, 2009 (translated into eight languages).

Byrne, T.N., Benzel, E.C. and Waxman, S.G. Diseases of the Spine and Spinal Cord, Oxford University Press, New York, 2000.

Waxman, S.G. Form and Function in the Brain and Spinal Cord, MIT Press, Cambridge, Mass., 2001.

Waxman, S.G. (ed.). From Neuroscience to Neurology: Neuroscience, Molecular Medicine, and the Therapeutic Transformation of Neurology, Elsevier Academic Press, 2005

Waxman, S.G. (ed.). Multiple Sclerosis as a Neuronal Disease, Elsevier, 2005.

Waxman, S.G. (ed.). Molecular Neurology, Elsevier Academic Press, 2007

Kullmann, D.M., and Waxman, S.G. (eds.). Special issue of The Journal of Physiology, “Channelopathies”, Blackwell Publishing, Ltd., New Jersey, 2010.

Vandenberg, J.I, and Waxman, S.G. (eds.). Special issue of The Journal of Physiology, “Voltage-Gated Ion Channels: Celebrating Sixty Years,” Blackwell Publishing, Ltd., New Jersey, 2012.

**Published Papers (Selected Listing)**

Kriebel, M. E., Bennett, M. V. L., Waxman, S. G. and Pappas, G. D. Oculomotor neurons in fish: electrotonic coupling and multiple sites of impulse initiation. Science, 166:520-524, 1969. PMID: 4309628

Waxman, S. G. Closely spaced nodes of Ranvier in the teleost brain. Nature, 227:283-284, 1970. PMID:5428197

Waxman, S. G. and Bennett, M. V. L. Relative conduction velocities of small myelinated and non- myelinated fibers in the central nervous system. Nature New Biology, 238:217-219, 1972. PMID: 4506206

Waxman, S. G. and Geschwind, N. Hypergraphia in temporal lobe epilepsy. Neurology 14:629- 637, 1974. (reprinted in: Epilepsy and Behav. 6:282-91, 2005). PMID: 15710320

Swadlow, H. A. and Waxman, S. G. Observations on impulse conduction along central axons. Proc. Nat. Acad. Sci. U.S.A., 72:5156-5159, 1975. PMID: 1061101

Waxman, S. G. Prerequisites for conduction in demyelinated fibers. Neurology, 28:27-34, 1978 PMID: 568749

Swadlow, H. A., Geschwind, N. and Waxman, S. G. Commissural transmission in humans. Science, 204:530-531, 1979. PMID: 432661

Foster, R. E., Whalen, C. C. and Waxman, S. G. Reorganization of the axonal membrane of demyelinated nerve fibers: morphological evidence. Science, 210:661-663, 1980. PMID: 6159685

Kocsis, J. D. and Waxman, S. G. Absence of potassium conductance in central myelinated axons. Nature, 287:348-349, 1980. PMID: 7421994

Malenka, R. C., Kocsis, J. D., Ransom, B. R. and Waxman, S. G. Modulation of parallel fiber excitability by postsynaptically mediated changes in extracellular potassium. Science, 214:339-341, 1981. PMID: 7280695

Waxman, S. G. Current concepts in neurology: membranes, myelin and the pathophysiology of multiple sclerosis. New England Journal of Medicine 306:1529-1533, 1982. PMID: 7043271

Kocsis, J. D. and Waxman, S. G. Long-term regenerated nerve fibres retain sensitivity to potassium channel blocking agents. Nature, 304:640-642, 1983. PMID: 6308475

Waxman, S. G. and Ritchie, J. M. Organization of ion channels in the myelinated nerve fiber. Science, 228:1502-1507, 1985. PMID: 2409596

Stys, P. K., Ransom, B. R., Waxman, S. G. and Davis, P. K. Role of extracellular calcium in anoxic injury of mammalian central white matter. Proc. Natl. Acad. Sci., 87:4212-4216, 1990. PMID: 2349231

Stys, P.K., Waxman, S.G. and Ransom, B.R. Ionic mechanisms of anoxic injury in mammalian CNS white matter: Role of Na+ channels and Na+-Ca2+ exchanger. J. Neurosci., 12:430-439, 1992. PMID: 1311030

Stys, P.K., Sontheimer, H., Ransom, B.R. and Waxman, S.G. Non-inactivating, TTX-sensitive Na+ conductance in rat optic nerve axons. Proc. Natl. Acad. Sci., 90:6976-6980, 1993. PMID: 8394004

Waxman, S.G., Kocsis, J.D. and Black, J.A. Type III sodium channel mRNA is expressed in embryonic but not adult spinal sensory neurons, and is re-expressed following axotomy. J. Neurophysiol., 72:466-471,1994. PMID: 7965028

Utzschneider, D.A., Archer, D.R., Kocsis, J.D., Waxman, S.G. and Duncan, I.D.: Transplantation of glial cells enhances action potential conduction of amyelinated spinal cord axons in the myelin-deficient rat. Proc. Natl. Acad. Sci., 91:53-57, 1994. PMID: 8278406

Waxman, S.G. Demyelinating diseases: New pathological insights, new therapeutic targets.

New England Journal of Medicine, 338:323-325, 1998. PMID: 9445415

Dib-Hajj, S.D., Tyrrell, L., Black, J.A., Waxman, S.G. NaN, a novel voltage-gated Na channel preferentially expressed in peripheral sensory neurons and down-regulated following axotomy. Proc. Natl. Acad.Sci., 95:8963-8968, 1998. PMID: 9671787

Tanaka, M., Cummins, T.R., Ishikawa, K., Black, J.A., Ibata, Y., Waxman, S.G. Molecular and functional remodeling of electrogenic membrane of hypothalamic neurons in response to changes in their input. Proc. Natl. Acad. Sci., 96:1088-1093, 1999. PMID: 9927698

Black, J. A., Dib-Hajj, S., Baker, D., Newcombe, J., Cuzner, M. L., Waxman, S. G. Sensory neuron specific sodium channel SNS is abnormally expressed in the brains of mice with experimental allergic encephalomyelitis and humans with multiple sclerosis. Proc. Natl. Acad. Sci., 97: 11598-11602, 2000. PMID: 11027357

Waxman, S. G. Transcriptional channelopathies: an emerging class of disorders.

Nature Reviews Neurosci., 2: 652-659, 2001. PMID: 11533733

Craner, M.J., Newcombe, J., Black, J.A., Hartle, C., Cuzner, M.L., Waxman, S.G. Molecular changes in neurons in MS: altered axonal expression of Nav1.2 and Nav1.6 sodium channels and Na+ /Ca2+ exchanger. Proc. Natl. Acad. Sci*.,* 101: 8168-8173, 2004. PMID: 15148385

Dib-Hajj, S.D., Rush, A.M., Cummins, T.R., Hisama, F.M., Novella, S., Tyrrell, L., Marshall, L., Waxman, S.G. Gain-of-function mutation in Nav1.7 in familial erythromelalgia induces bursting of sensory neurons. Brain, 128:1847-1854, 2005. PMID: 15958509

Waxman, S.G., Dib-Hajj, S.D. Erythermalgia: molecular basis for an inherited pain syndrome,

Trends in Molec. Medicine, 11 (12): 555-562, 2005. PMID: 16278094

Waxman, S.G. Axonal conduction and injury in multiple sclerosis: the role of sodium channels.

Nature Rev. Neurosci., 5: 932-942 (2006). PMID: 17115075

Waxman, S.G. A channel sets the gain on pain. Nature, 444: 831-832, 2006. PMID: 17167466

Rush, A.M., Dib-Hajj, S.D., Liu, S., Cummins, T.R, Black, J.A., Waxman, S.G. A single sodium channel mutation produces hyper-or hypoexcitability in different types of neurons. Proc. Nat. Acad. Sci., 103: 8245-8250, 2006. PMID: 16702558

Waxman, S.G., Channel, neuronal, and clinical function in sodium channelopathies: From genotype to phenotype. Nature Neurosci., 10:405-410, 2007. PMID: 17387329

Waxman, S.G. Sodium channels and neuroprotection in MS: current status. Nature Clinical Neurology, 4:159-170, 2008. PMID: 18227822

Faber, C.G., Hoeijmakers, J.G.J., Ahn, H.S., Cheng, X, Han, C., Choi, J.S., Estacion, M., Lauria, G., Vanhoutte, E.K., Gerrits, M.M., Dib-Hajj, S., Drenth, J.P.H., Waxman, S.G., and Merkies, I.S.J. Gain-of-function NaV1.7 mutations in idiopathic small fiber neuropathy. Ann. of Neurol., 71(1):26-39, 2012. PMID: 21698661

Dib-Hajj, S.D., Yang, Y., Black, J.A., Waxman, S.G. The NaV1.7 sodium channel: from molecule to man. Nat. Rev. Neurosci., 14(1): 49-62, 2013. PMID: 23232607

Samad, O.A., Tan, A. M., Cheng, X., Foster, E., Dib-Hajj, S.D., Waxman, S.G. Virus-mediated shRNA knockdown of NaV1.3 in rat dorsal root ganglion attenuates nerve-injury induced neuropathic pain. Mol.Therapy., 21(1): 49-56, 2013. PMID: 22910296

Faber, C.G., Lauria, G., Merkies, I.S.J., Cheng, X., Han, C., Ahn, H-S., Persson, A-K., Hoeijmakers, J.G.J., Gerrits, M.M., Pierro, T., Lombardi, R., Kapetis, D., Dib-Hajj, S.D., and Waxman, S.G. Gain-of-function NaV1.8 mutations in painful neuropathy. Pro. Natl. Acad. Sci., 109:19444-19449, 2012. PMID: 23115331.

Yang, Y., Dib-Hajj, S.D., Zhang, J., Zhang, Y., Tyrrell, L., Estacion, M., and Waxman, S.G. Structural modeling and mutant cycle analysis predict pharmacoresponsiveness of a NaV1.7 mutant channel, Nature Comm., 3: 1186, 2012 PMID 23149731.

Veeramah, K.R., O’Brien, J.E., Meisler, M.H., Cheng, X., Dib-Hajj, S.D., Waxman, S.G., Talwar, D., Girirajan, S., Eichler, E.E., Restifo, L.L., Erickson, R.P., Hammer, M.F. *De novo* pathogenic mutation of *SCN8A* identified by whole genome sequencing of a family quartet with infantile epileptic encephalopathy and SUDEP, Amer. J. Human Genetics, 90(3): 502-510, 2012. PMID: 22365152

Shields, S.D., Butt, R.P., Dib-Hajj, S.D., and Waxman, S.G. Oral administration of PF-01247324, a subtype-selective Nav1.8 blocker, reverses cerebellar deficits in a mouse model of multiple sclerosis. PLOS One, 10(3): e0119067. 2015. PMID: 25747279

Dib-Hajj, S.D., Black, J.A., and Waxman, S.G. NaV1.9: A sodium channel linked to human pain. Nat. Rev. Neurosci., 16: 511-19, 2015. PMID 26243570

Geha, P., Yang, Y., Estacion, M., Schulman, B.R., Tokuno, H., Apkarian, A.V., Dib-Hajj, S.D., Waxman, S.G. Pharmacotherapy for pain in a family with inherited erythromelalgia guided by genomic analysis and functional profiling. JAMA Neurol., 73(6):659-67, 2016. PMID: 27088781

Cao, L., Nitzsche, N., McDonnell, A., Alexandrou, A., Saintot, P-P., Loucif, A.J.C., Brown, A.R., Young, G., Mis, M., Randall, A., Waxman, S.G., Stanley, P., Kirby, S., Tarabar, S., Gutteridge, A., Butt, R., McKernan, R.M., Whiting, R., Ali, Z., Bilsland, J., Stevens, E.B.Pharmacological reversal of pain phenotype in iPSC-derived sensory neurons and human subjects with inherited erythromelalgia, Sci. Transla. Med.**,**8(335): 335ra56, 2016**.** PMID: 27099175

Zakrzewska, J.M., Palmer, J., Morisset, V., Giblin, G.M.P., Obermann, M., Ettlin, D.A., Cruccu, G., Bendtsen, L., Estacion, M., Derjean, D., Waxman, S.G., Layton, G., Gunn, K., and Tate, S. Safety and efficacy of a NaV1.7-selective sodium channel blocker in trigeminal neuralgia: a double-blind, placebo-controlled, randomized withdrawal phase 2a trial. Lancet Neurol., 16(4):291-300, 2017. PMID: 28216232

Huang, J., Vanoye, C.G., Cutts, C., Goldberg, Y.P., Dib-Hajj, S.D., Cohen, C.J., Waxman, S.G., and George, A.L. Sodium channel NaV1.9 mutations associated with insensitivity to pain dampen neuronal excitability. J. Clin. Invest., 127(7):2805-2814, 2017. PMID: 28530638

Akin, E.J., Higerd, G.P., Mis, M.S., Tanaka, B.S., Adi, T., Liu, S., Dib-Hajj, F.B., Waxman, S.G., and Dib-Hajj, S.D. Building sensory axons: delivery and distributions of NaV1.7 channels and effects of inflammatory mediators. Sci. Adv., 5(10):eaax4755. PMID: 31681845

Vrselja, Z., Daniele, S.G., Silbereis, J., Talpo, F., Morozov, Y.M., Sousa, A.M.M., Tanaka, B.S., Skarica, M., Pletikos, M., Kaur, N., Zhuang, Z.W., Liu, Z., Alkawadri, R., Sinusas, A.J., Latham, S., Waxman, S.G., and Sestan, N. Restoration of brain circulation and cellular functions hours postmortem. Nature, 568(7752):336-343, 2019. PMID: 30996318

Mis., M., Yang, Y., Tanaka, B., Gomis-Perez, C., Liu, S., Dib-Hajj, F., Adi, T., Garcia-Milian, R., Schulman, B., Dib-Hajj, S., and Waxman, S. Resilience to pain: A peripheral component identified using induced pluripotent stem cells and dynamic clamp. J. Neurosci, 39(3):382-392, 2019. PMID: 30459225

**Published Papers and Chapters (Full Listing)**

1. Waxman, S.G. Peripheral nerve axon processes sharing common myelin sheaths. Brain Research, 7:469-473, 1968. PMID: 5639612

2. Waxman, S.G. Micropinocytotic invaginations in the axolemma of peripheral nerves. Zeitschr. fur Zellforschung, 86:571-573, 1968. PMID: 5707296

3. Waxman, S.G. Contextual categorization by lateral inhibition. IEEE Transactions on Systems Science and Cybernetics, SSC-4:191-192, 1968.

4. Waxman, S.G. Procedure for determination of contextual links within models. Psychol. Repts.,

23:1261-1262, 1968.

5. Waxman, S.G. Information content of ensembles of hypotheses. Psychol. Repts., 24:367-371, 1969.

6. Waxman, S.G. and Pappas, G.D. Pinocytosis at postsynaptic membranes: electron microscopic evidence. Brain Research, 14:240-244, 1969. PMID: 5783114

7. Kriebel, M.E., Bennett, M.V.L., Waxman, S.G. and Pappas, G.D. Oculomotor neurons in fish: electrotonic coupling and multiple sites of impulse initiation. Science, 166:520-524, 1969. PMID: 4309628

8. Waxman, S.G. Closely spaced nodes of Ranvier in the teleost brain. Nature, 227:283-284, 1970. PMID: 5428197

9. Waxman, S.G. An ultrastructural study of the pattern of myelination of preterminal fibers in teleost oculomotor nuclei, electromotor nuclei, and spinal cord. Brain Research, 27:189-201, 1971. PMID: 5552167

10. Waxman, S.G. and Pappas, G.D. An electron microscopic study of synaptic morphology in the oculomotor nuclei of three inframammalian species. J. Comp. Neurol., 143:41-72. PMID: 4329004

11. Waxman, S.G. and Melker, R.J. Closely spaced nodes of Ranvier in the mammalian brain. Brain Research, 32:445-448, 1971. PMID: 5134587

12. Pappas, G.D. and Waxman, S.G. Synaptic fine structure: morphological correlates of chemical and electrotonic transmission. In: Structure and Function of Synapses, Pappas, G.D. and Purpura, D.P. (eds.), Raven Press, New York, 1972, pp. 1-44. PMID: 5013596

13. Waxman, S.G. and Pappas, G.D. Changing concepts of the neuron. Microstructures, 3:13-25, 1972.

14. Waxman, S.G., Pappas, G.D. and Bennett, M.V.L. Morphological correlates of functional differentiation of nodes of Ranvier along single fibers in the neurogenic electric organ of the knife fish Sternarchus. J. Cell Biol., 53:210-224, 1972. PMID: 5013596

15. Waxman, S.G. and Bennett, M.V.L. Relative conduction velocities of small myelinated and non- myelinated fibers in the central nervous system. Nature New Biology, 238:217-219, 1972. PMID: 4506206

16. Waxman, S.G. Regional differentiation of the axon: a review with special reference to the concept of the multiplex neuron. Brain Research, 47:269-288, 1972. PMID: 4345196

17. Waxman, S.G. Features associated with paranodal demyelination at a specialized site in the non- pathological nervous system. J. Neurol. Sci., 19:357-362, 1973. PMID: 4716850

18. Pappas, G.D. and Waxman, S.G. Ultrastructure of synapses. In: Physiology and Pharmacology of Synaptic Transmission, Naukah Publi., Leningrad, 1973 (transl. into Russian).

19. Waxman, S.G. and Geschwind, N. Hypergraphia in temporal lobe epilepsy. Neurology, 14:629- 637, 1974. (reprinted in: Epilepsy and Behav. 6:282-91, 2005). PMID: 15710320

20. Waxman, S.G., Sabin, T.D. and Embree, L.J. Subacute brain-stem encephalitis. J. Neurol. Neurosurg. Psychiatry, 37:811-816, 1974. PMID: 4854509

21. Wall, P.D., Waxman, S.G. and Basbaum, A.I. Ongoing activity in peripheral nerve: injury discharge. Exper. Neurol., 45:576-589, 1974. PMID: 4435078

22. Waxman, S.G. Ultrastructural differentiation of the axon membrane at synaptic and non-synaptic central nodes of Ranvier. Brain Research, 65:338-342, 1974. PMID: 4472521

23. Waxman, S.G. Integrative properties and design principles of axons. Internat. Rev. Neurobiol., 18:1-40, 1975. PMID: 1107245

24. Waxman, S.G. and Geschwind, N. The interictal behavior syndrome of temporal lobe epilepsy. Arch. Gen. Psychiat., 32:1580-1586, 1975. PMID: 1200777

25. Swadlow, H.A. and Waxman, S.G. Observations on impulse conduction along central axons. Proc. Nat. Acad. Sci. U.S.A., 72:5156-5159, 1975. PMID: 1061101

26. Pappas, G.D., Waxman, S.G. and Bennett, M.V.L. Morphology of spinal electromotor neurons and presynaptic coupling in the gymnotid Sternarchus albifrons, J. Neurocytol., 4:469-478, 1975.PMID: 1151441

27. Waxman, S.G. Electron microscopic observations on preterminal fibers in the oculomotor nucleus of the cat, with special reference to the relation between axon diameter and myelin thickness in mammalian gray matter. J. Neurol. Sci. ,26:395-401, 1975. PMID: 1185239

28. Waxman, S.G. Ultrastructural observations on branching patterns of central axons. Neurosci. Letts., 1:251-256, 1975. 29. PMID: 19604786

29. Waxman, S.G. and Sabin, T.D. Differential diagnosis of coma. Modern Medicine, 44:86-95, 1976.

30. Galaburda, A.M., Waxman, S.G., Kemper, T.L. and Jones, H.R. Progressive multifocal neurologic deficit with disseminated sub-pial demyelination. J. Neuropath. Exper. Neurol., 35:481-494, 1976. PMID: 182927

31. Mesulam, M.M., Waxman, S.G., Geschwind, N. and Sabin, T.D. Acute confusional states with right middle cerebral artery infarctions. J. Neurol. Neurosurg. Psychiatry, 39:84-90, 1976. PMID: 1255216

32. Waxman, S.G. and Swadlow, H.A. Morphology and physiology of visual callosal axons: evidence for a supernormal period in central myelinated fibers. Brain Research, 113:179-187, 1976. PMID: 953725

33. Waxman, S.G. and Swadlow, H.A. Ultrastructure of visual callosal axons in the rabbit. Exp. Neurol., 53:115-127, 1976. PMID: 964332

34. Swadlow, H.A. and Waxman, S.G. Variations in conduction velocity and excitability following single and multiple impulses of visual callosal axons in the rabbit. Exp. Neurol., 53:128-150, 1976. PMID: 964334

35. Waxman, S.G., Brill, M.H., Geschwind, N., Sabin, T.D. and Lettvin, J.Y. Probability of conduction deficit as related to fiber length in random-distribution models of peripheral neuropathies. J. Neurol. Sci., 29:39-53. 1976. PMID: 181541

36. Quick, D.C. and Waxman, S.G. Specific staining of the axon membrane at nodes of Ranvier with ferric ion and ferrocyanide. J. Neurol. Sci., 31:1-11, 1977. PMID: 64593

37. Waxman, S.G. and Quick, D.C. Cytochemical differentiation of the axon membrane in A- and C- fibers. J. Neurol. Neurosurg. Psychiatry, 40:379-386, 1977. PMID: 327027

38. Brill, M.H., Waxman, S.G., Moore, J.W. and Joyner, R.W. Conduction velocity and spike configuration in myelinated fibers: computed dependence on internode distance. J. Neurol. Neurosurg. Psychiatry, 40:769-774, 1977. PMID: 925697

39. Quick, D.C. and Waxman, S.G. Evidence for inorganic phosphate binding at nodes of Ranvier in peripheral nerves. J. Neurol. Sci., 33:207-211, 1977. PMID: 903783

40. Quick, D.C. and Waxman, S.G. Ferric ion, ferrocyanide, and inorganic phosphate as cytochemical reactants at peripheral nodes of Ranvier. J. Neurocytol., 6:555-570, 1977. PMID: 72787

41. Waxman, S.G. Conduction in myelinated, unmyelinated, and demyelinated fibers. Arch. Neurol., 34:585-590, 1977. PMID: 907529

42. Waxman, S.G. and Swadlow, H.A. The conduction properties of axons in central white matter. Progress in Neurobiology, 8:297-325, 1977. PMID: 335441

43. Waxman, S.G., Dichter, M.A., Hartwieg, E. and Matheson, J. Recapitulation of normal neuro- glial relations in dissociated cell cultures of dorsal root ganglia. Brain Research, 122:344-350, 1977. PMID: 837233

44. Waxman, S.G. and Sabin, T.D. Coma. In: Principles and Practice of Emergency Medicine., Schwartz, G.R. and Wagner, D.K. (eds.), Saunders, Philadelphia, 1978, pp. 501-510.

45. Waxman, S.G. and Quick, D.C. Functional architecture of the initial segment. In: Physiology and Pathobiology of Axons, Waxman, S. G. (ed.), Raven Press, New York, 1978, pp. 125-130.

46. Waxman, S.G. Variations in axonal morphology and their functional implications. In: Physiology and Pathobiology of Axons, Waxman, S.G. (ed.), Raven Press, New York, 1978, pp. 169-190.

47. Swadlow, H.A. and Waxman, S.G. Activity-dependent variations in the conduction properties of central axons. In: Physiology and Pathobiology of Axons, Waxman, S. G. (ed.), Raven Press, New York, 1978, pp. 191-203.

48. Sabin, T.D., Geschwind, N. and Waxman, S.G. Patterns of clinical deficits in peripheral nerve disease. In: Physiology and Pathobiology of Axons, Waxman, S. G. (ed.), Raven Press, New York, 1978, pp. 431-439.

49. Moore, J.W., Joyner, R.W., Brill, M.H., Waxman, S.G. and Najar-Joa, M. Simulations of conduction in uniform myelinated fibers: relative sensitivity to changes in nodal and internodal parameters. Biophys. J., 21:147-161, 1978. PMID: 623863

50. Waxman, S.G. and Quick, D.C. Intra-axonal ferric ion-ferrocyanide staining of nodes of Ranvier and initial segments in central myelinated fibers. Brain Research, 144:1-10, 1978. PMID: 76497

51. Quick, D.C. and Waxman, S.G. Demyelination of Sternarchus electrocyte axons by injection of diphtheria toxin. J. Neurol. Sci., 35:235-241, 1978. PMID: 632832

52. Swadlow, H.A., Weyand, T.G. and Waxman, S.G. The cells of origin of the corpus callosum in rabbit visual cortex. Brain Research, 156:129-134, 1978. PMID: 81092

53. Swadlow, H. A., Waxman, S. G. and Rosene, D. L. Latency variability and the identification of antidromically activated neurons in mammalian brain. Exper. Brain Res., 32:439-443, 1978. PMID: 98342

54. Swadlow, H.A., Rosene, D.L. and Waxman, S.G. Characteristics of interhemispheric impulse conduction between prelunate gyri of the rhesus monkey. Exper. Brain Res., 33:455-467, 1978. PMID: 103739

55. Waxman, S.G., Bradley, W.G., and Hartwieg, E. Organization of the axolemma in amyelinated axons: a cytochemical study in dy/dy dystrophic mice. Proc. Roy. Soc. B., 201:301-308, 1978. PMID: 27805

56. Waxman, S.G. and Brill, M.H. Conduction through demyelinated plaques in multiple sclerosis: computer simulations of facilitation by short internodes. J. Neurol. Neurosurg. Psychiatry, 41:408-417, 1978. PMID: 660202

57. Waxman, S.G. Prerequisites for conduction in demyelinated fibers. Neurology, 28:27-34, 1978. PMID: 568749

58. Swadlow, H.A., Geschwind, N. and Waxman, S.G. Commissural transmission in humans. Science, 204:530-531, 1979. PMID: 432661

59. Kocsis, J.D., Swadlow, H.A., Waxman, S.G. and Brill, M.H. Variation in conduction velocity during the relative refractory and supernormal periods: a mechanism for impulse entrainment in central axons. Exp. Neurol., 65:230-236, 1979. PMID: 262231

60. Waxman, S.G. Electron microscopy of synapses in reptile spinal cord. Neuroscience Lett., 13:237-242, 1979. PMID: 530475

61. Swadlow, H.A. and Waxman, S.G. Ultrastructure and conduction properties of visual callosal axons. In: Structure and Function of the Cerebral Commissures, Berlucchi, G., Steele-Russell, I. and van Hof, M. W. (eds.) Macmillan, 1979. pp. 195-210.

62. Waxman, S.G. Cytochemical studies on normal and pathological nerve fibers. In: Current Topics in Nerve and Muscle Research, Aguayo, A. and Karpati, G. (eds.) Elsevier, pp. 189-200, 1979.

63. Waxman, S.G. The flexion-adduction sign in neuralgic amyotrophy. Neurology, 29:1301-1304, 1979. PMID: 573411

64. Waxman, S.G., Kocsis, J.D., Brill, M. H. and Swadlow, H.A. Dependence of refractory period measurements on conduction distance: a computer simulation analysis. Electroencephalogr. Clin. Neurophysiol., 47:717-724, 1979. PMID: 91501

65. Waxman, S.G. and Ouellette, E.M. Ultrastructural and cytochemical observations in a case of dominantly inherited hypertrophic (Charcot-Marie-Tooth) neuropathy. J. Neuropath. Exp. Neurol., 38:586-595, 1979. PMID: 533859

66. Waxman, S.G., Kocsis, J.D. and Nitta, K.C. Lysophosphatidyl choline-induced focal demyelination in the rabbit corpus callosum: light microscopic observations. J. Neurol. Sci., 44:45-53, 1979. PMID: 512691

67. Waxman, S.G. The structural basis for axonal conduction abnormalities in demyelinating disease. In: Progress in Clinical Neurophysiology, Vol. 7, Somatosensory Evoked Potentials and Their Clinical Uses, Desmedt, J.E. (ed.), Karger, Basel, 1980, pp. 170-189.

68. Waxman, S.G. Multiple sclerosis. In: Current Therapy, Conn, H.F. (ed.) W.F. Saunders Co., Philadelphia, pp. 731-736, 1980.

69. Waxman, S.G. Structure-function relations in nerves and nerve injuries. In: Nerve Repair: Experimental and Clinical Basis, Jewett, D. and McCarroll, H. (eds.), Mosby Co.,1980, pp. 185-198.

70. Swadlow, H.A., Waxman, S. G. and Geschwind, N. Small diameter nonmyelinated fibers in the primate corpus callosum. Arch. Neurol., 37:114-116, 1980. PMID: 6766715

71. Waxman, S.G. Determinants of conduction velocity in myelinated nerve fibers. Muscle and Nerve, 3:141-150, 1980. PMID: 6245357

72. Swadlow, H.A., Kocsis, J.D. and Waxman, S.G. Modulation of impulse activity along the axonal tree. Ann. Rev. Biophys. Biomed. Eng., 9:143-179, 1980. PMID: 6994588

73. Waxman, S.G. and Pappas, G.D. Ultrastructure of synapses and cellular relationships in the oculomotor nucleus of the rhesus monkey. Cell and Tissue Res., 204:161-169, 1979. PMID: 119578

74. Waxman, S.G., Kocsis, J.D. and Foster, R.E. Impulse initiation in spinal neurons: cytochemical demarcation of the trigger zone, development of specialized axonal regions, and determinants of interspike intervals. In: Abnormal Nerves and Muscles as Impulse Generators, Culp, W. and Ochoa, J. (eds.), Oxford University Press, New York, pp 211-235, 1982.

75. Waxman, S.G. Pathophysiology of nerve conduction: relation to diabetic neuropathy. Ann. Internal. Med. 92:297-301, 1980. PMID: 6243892

76. Waxman, S.G. and Foster, R.E. Development of the axon membrane during differentiation of myelinated fibres in spinal nerve roots. Proc. Roy. Soc. (Lond.) B, 209:441-446, 1980. PMID: 6161376

77. Waxman, S.G. and Anderson, M.J. Regeneration of spinal electrocyte fibers in Sternarchus albifrons: Development of axon-Schwann cell relationships and nodes of Ranvier. Cell and Tissue Res., 208:343-352, 1980. PMID: 7397760

78. Kocsis, J.D., Malenka, R.C. and Waxman, S.G. Effects of 4-aminopyridine on frequency-following properties of the parallel fibers of the cerebellar cortex. Brain Research, 195:511-516, 1980. PMID: 6249447

79. Foster, R.E., Kocsis, J.D., Malenka, R.C. and Waxman, S.G. Lysophosphatidyl choline-induced focal demyelination in the rabbit corpus callosum: electron microscopic observations. J. Neurol. Sci., 48:221-231, 1980. PMID: 7431040

80. Waxman, S.G. Frontiers in the cell biology of spinal cord injury. Paraplegia News, 35:31-32, 1981.

81. Waxman, S.G. Cellular aspects of conduction in myelinated nerve fibers in relation to clinical deficit. In: Nerve Conduction Velocity Distributions, Dorfman, L., Cummins, K. L., and Leifer, L. (eds.), Liss, New York, pp. 1-14, 1981. PMID: 7232439

82. Kocsis, J.D., Malenka, R.C., Connors, B.W., Waxman, S.G. and Cummins, K.L. Population response characteristics of fiber tracts in central white matter. In: Nerve Conduction Velocity Distributions, Dorfman, L., Cummins, K., and Leifer, L. (eds.), Liss, New York, pp. 17-32, 1981. PMID: 7232442

83. Weiner, L.P., Waxman, S.G., Stohlman, S.A. and Kwan, A. Remyelination following viral-induced demyelination: ferric ion-ferrocyanide staining of nodes of Ranvier within the CNS. Ann. Neurol., 8:580-583, 1980. PMID: 6260010

84. Waxman, S.G. and Sabin, T.D. Diabetic truncal polyneuropathy. Arch. Neurol., 38:46-47, 1981. PMID: 7458723

85. Foster, R.E., Whalen, C.C. and Waxman, S.G. Reorganization of the axonal membrane of demyelinated nerve fibers: morphological evidence. Science, 210:661-663, 1980. PMID: 6159685

86. Angel, R.W., Waxman, S.G. and Kocsis, J.D. Myoelectric silence following unopposed passive stretch in normal man. J. Neurol., Neurosurg., Psychiatry, 43:705-712, 1980. PMID: 7431031

87. Swadlow, H.A., Waxman, S.G. and Weyand, T.G. Effects of variations in temperature on impulse conduction along nonmyelinated axons in the mammalian brain. Exper. Neurol., 71:383-389, 1981. PMID: 7449905

88. Waxman, S.G. and Foster, R.E. Ionic channel distribution and heterogeneity of the axon membrane in myelinated fibers. Brain Research Reviews, 2:205-234, 1980. PMID: 6253027

89. Waxman, S.G. The demyelinating diseases. In: Clinical Neuroscience, Rosenberg, R. (ed.), Churchill Livingston Publ. pp. I:609-I:644, 1983.

90. Kocsis, J.D. and Waxman, S.G. Absence of potassium conductance in central myelinated axons. Nature, 287:348-349, 1980. PMID: 7421994

91. Kocsis, J.D., Malenka, R.C. and Waxman, S.G. Enhanced parallel fiber frequency-following after reduction of postsynaptic activity. Brain Research, 207:321-331, 1981. PMID: 6258738

92. Waxman, S.G., Waxman, M. and Pappas, G.D. Coordinated micropinocytotic activity of adjacent neuronal membranes in mammalian CNS. Neuroscience Lett., 20:141-146, 1980. PMID: 7443064

93. Sachdev, H.S. and Waxman, S.G. Frequency of hypergraphia in temporal lobe epilepsy: an index of interictal behavior syndrome. J. Neurol. Neurosurg. Psychiatry, 44:358-360, 1981. PMID: 7241165

94. Waxman, S.G. Cytochemical heterogeneity of the axon membrane. Trends in Neuroscience, 4:7-9, 1981.

95. Anderson, M. J. and Waxman, S.G. Morphology of regenerated spinal cord in Sternarchus albifrons. Cell and Tissue Research 219:1-8, 1981. PMID: 7285088

96. Waxman, S.G. Plasticity in the ontogeny and pathophysiology of myelinated fibers. In: Demyelinating Diseases: Basic and Clinical Electrophysiology, Waxman, S.G. and Ritchie, J.M. (eds.), Raven Press, New York, pp. 69-92, 1981. PMID: 7325049

97. Waxman, S.G. Clinicopathological correlations in multiple sclerosis and related diseases. In: Demyelinating Diseases: Basic and Clinical Electrophysiology, Waxman, S.G. and Ritchie, J.M. (eds.), Raven Press, New York, pp. 169-182, 1981. PMID: 7325041

98. Kocsis, J.D. and Waxman, S.G. Action potential electrogenesis in mammalian central axons. In: Demyelinating Diseases: Basic and Clinical Electrophysiology, Waxman, S.G. and Ritchie, J.M. (eds.), Raven Press, New York, pp. 299-312, 1981. PMID: 6275668

99. Waxman, S.G. and Ritchie, J.M. Electrophysiology of demyelinating diseases: future directions and questions. In: Demyelinating Diseases: Basic and Clinical Electrophysiology, Waxman, S.G. and Ritchie, J.M. (eds.) Raven Press, New York, pp. 511-513, 1981. PMID: 6275675

100. Kocsis, J.D., Cummins, K.L., Waxman, S.G., and Malenka, R.C. Impulse entrainment; computer simulations and studies on the parallel fibers of the cerebellum. Exper. Neurol., 72:628-637, 1981. PMID: 7238712

101. Ritchie, J.M., Waxman, S.G. and Waksman, B.H. Basic and clinical electrophysiology of demyelinating diseases. Neurology, 31:1308-1310, 1981. PMID: 6287348

102. Malenka, R.C., Kocsis, J.D., Ransom, B.R. and Waxman, S.G. Modulation of parallel fiber excitability by postsynaptically mediated changes in extracellular potassium. Science, 214:339-341, 1981. PMID: 7280695

103. Black, J.A., Foster, R.E., and Waxman, S.G. Freeze-fracture ultrastructure of rat C.N.S. and P.N.S. nonmyelinated axolemma. J. Neurocytol., 10:981-993, 1981. PMID: 7310484

104. Foster, R.E., Connors, B., and Waxman, S.G. Rat optic nerve: electrophysiological, pharmacological and anatomical studies during development. Develop. Brain Res., 3:361-376, 1982. PMID: 7066695

105. Wood, S.L., Waxman, S.G. and Kocsis, J.D. Conduction of trains of impulses in uniform myelinated fibers: computed dependence on stimulus frequency. Neuroscience, 7:423-430, 1982. PMID: 7078731

106. Waxman, S.G., Black, J.A. and Foster, R.E. Freeze-fracture heterogeneity of the axolemma of premyelinated fibers in the CNS. Neurology, 32:418-421, 1982. PMID: 7199667

107. Waxman, S.G. Current concepts in neurology: membranes, myelin and the pathophysiology of multiple sclerosis. New England Journal of Medicine, 306:1529-1533, 1982. PMID: 7043271

108. Waxman, S.G. and Anderson, M. J. Retrograde axon reaction following section of asynaptic nerve fibers. Cell and Tissue Research, 223:487-492, 1982. PMID: 7093992

109. Kocsis, J.D. and Waxman, S.G. Intra-axonal recordings in rat dorsal column axons: membrane hyperpolarization and decreased excitability precede the primary afferent depolarization. Brain Research, 238:222-228, 1982. PMID: 6282392

110. Kocsis, J.D., Malenka, R.C. and Waxman, S.G. Effects of extracellular potassium concentration on the excitability of the parallel fibres of the rat cerebellum. J. Physiol. (Lond.), 334:225-244, 1983. PMID: 6864558

111. Black, J.A., Foster, R.E. and Waxman, S.G. Rat optic nerve: freeze-fracture studies during development of myelinated axons. Brain Research, 250:1-10, 1982. PMID: 7139310

112. Black, J.A., Waxman, S.G. and Foster, R.E. Spatial heterogeneity of the axolemma of non-myelinated fibers in the optic disc of the adult rat: freeze-fracture observations. Cell and Tissue Research, 224:239-246, 1982. PMID: 7105135

113. Hildebrand, C. and Waxman, S.G. Regional node-like membrane specializations in non-myelinated axons of rat retinal nerve fiber layer. Brain Research, 258:23-32, 1983.

114. Waxman, S.G. Diabetic radiculoneuropathy: clinical patterns of sensory loss and distal paraesthesias. Acta Diabetologica Latina, 19:199-207, 1982. PMID: 7148327

115. Kocsis, J.D., Waxman, S.G., Hildebrand, C., and Ruiz, J.A. Regenerating mammalian nerve fibres: changes in action potential waveform and firing characteristics following blockage of potassium conductance. Proc. Roy. Soc. (Lond.) B., 217:277-287, 1982. PMID: 6131423

116. Wood, S.L. and Waxman, S.G. Conduction in demyelinated nerve fibers: computer simulations of the effects of variation in voltage-sensitive ionic conductances. IEEE Frontiers of Engineering in Health Care, 11.7.1:424-428, 1982.

117. Anderson, M.J. and Waxman, S.G. Regeneration of spinal neurons in inframammalian vertebrates: morphological and developmental aspects. J. Hirnforsch., 24:371-398, 1983. PMID: 6643991

118. Waxman, S.G., Black, J.A. and Foster, R.E. Ontogenesis of the axolemma and axoglial relationships in myelinated fibers: electrophysiological and freeze-fracture correlates of membrane plasticity. International Review of Neurobiology, 24:433-485, 1983. PMID: 6360938

119. Waxman, S.G. and Geschwind, N. Major morbidity related to hyperthermia in multiple sclerosis. Ann. Neurol., 13:348, 1983. PMID: 6847156

120. Anderson, M.J., Waxman, S.G. and Laufer, M. Fine structure of regenerated ependyma and spinal cord in *Sternarchus albifrons*. Anat. Rec., 205:73-84, 1983. PMID: 6837937

121. Anderson, M.J. and Waxman, S.G. Caudal spinal cord of the teleost *Sternarchus albifrons* resembles regenerating cord. Anat. Rec., 205:85-92, 1983. PMID: 6837938

122. Waxman, S.G. Reorganization of the axon membrane during the development of myelinated fibers. In: Neuromuscular Diseases, G. Serratrice, D. Cros., C. Desnoulles, et al. (eds), Raven Press, New York, pp. 253-259, 1984.

123. Smith, M.E., Kocsis, J.D. and Waxman, S.G. Myelin protein metabolism in demyelination and remyelination in the sciatic nerve. Brain Research, 270:37-44, 1983. PMID: 6871715

124. Preston, R.J., Waxman, S.G. and Kocsis, J.D. Effects of 4-aminopyridine on rapidly and slowly conducting axons of rat corpus callosum. Exp. Neurol., 79:808-820, 1983. PMID: 6825765

125. Waxman, S.G. Conduction in normal and demyelinated axons. In: Neurological Pathophysiology, Third Edition, Pearlman, A.L. and Collins, R. (eds.), Oxford University Press, pp. 13-24, 1984.

126. Dorfman, L.J. and Waxman, S.G. Peripheral nerve. In: Neurological Pathophysiology, Third Edition, Pearlman, A.L. and Collins, R. (eds.), Oxford University Press, New York, pp. 25-40, 1984.

127. Kocsis, J.D. and Waxman, S.G. Electrophysiology of mammalian regenerating nerves. In: Nerve, Tissue and Organ Regeneration, F. Seil (ed.), Academic Press, pp. 89- 107, 1983.

128. Malenka, R.C., Kocsis, J.D. and Waxman, S.G. The supernormal period of the cerebellar parallel fibers: effects of [Ca2+]o and [K+]o. Pflügers Archiv. Eur. J. Physiol., 397:176-184, 1983. PMID: 6878005

129. Black, J.A., Foster, R. and Waxman, S.G. Freeze-fracture ultrastructure of developing and adult non- myelinated ganglion cell axolemma in the retinal nerve fibre layer. J. Neurocytol., 12:201-212, 1983. PMID: 6842274

130. Waxman, S.G. Action potential propagation and conduction velocity - new perspectives and questions. Trends in Neuroscience, 6:157-161, 1983.

131. Waxman, S.G. and Toole, J.F. Temporal profile resembling TIA in the setting of cerebral infarction. Stroke, 14:433-437, 1983. PMID: 6658915

132. Kocsis, J.D., Ruiz, J.A. and Waxman, S.G. Maturation of mammalian myelinated fibers: changes in action potential characteristics following 4-aminopyridine application. J. Neurophysiol., 50:449-463, 1983. PMID: 6310062

133. Waxman, S.G. Multiple sclerosis. In: Emergency Medical Therapy, Edlich, R.F. (ed.), Appleton Century Crofts, East Norwalk, Conn., pp. 637-640, 1984.

134. Kocsis, J.D. and Waxman, S.G. Long-term regenerated nerve fibres retain sensitivity to potassium channel blocking agents. Nature, 304:640-642, 1983. PMID: 6308475

135. Waxman, S.G. and Wood, S.L. Impulse conduction in inhomogeneous axons: Effects of variation in voltage-sensitive ionic conductances on invasion of demyelinated axon segments and preterminal fibers. Brain Research, 294:111-122, 1984. PMID: 6697227

136. Waxman, S.G. Nodelike membrane at extranodal sites: Comparative morphology and physiology. In: The Node of Ranvier, Zagoren, J. and Federoff, S. (eds.), Academic Press, N.Y., pp. 311-351, 1984.

137. Wood, S. L. and Waxman, S. G. Computer simulation of conduction in myelinated and demyelinated axons: IEEE Frontiers in Engineering and Health Care, 19.4.1:425-432, 1983.

138. Weinrich, M. and Waxman, S.G. Autoimmune diseases of the nervous system. Triangle, 23:85-94, 1984.

139. Waxman, S.G. and Anderson, M.J. Regeneration of central nervous system structures: *Apteronotus* spinal cord as a model system. In: Electroreception, Bullock, T.H. and Heiligenberg, W. (eds.), J. Wiley, New York, pp. 183-209, 1986.

140. Waxman, S.G. The axon. In: Encyclopedia of Neuroscience, Edelman, G. (ed.), Birkhauser Boston Publ., Cambridge, Mass., pp. 98-101, 1987.

141. Anderson, M.J., Waxman, S.G. and Tadlock, C.H. Cell death of asynaptic neurons in regenerating spinal cord. Devel. Biol., 103:433-455, 1984. PMID: 6724138

142. Hildebrand, C. and Waxman, S.G. Postnatal differentiation of rat optic nerve fibers: Electron microscopic observations on the development of nodes of Ranvier and axoglial relations. J. Comp. Neurol., 224:25-37, 1984. PMID: 6715578

143. Waxman, S.G. Structure and function of the myelinated fiber. In: Handbook of Clinical Neurology, Vol. 3, The Demyelinating Diseases, Koetsier, J.C. (ed.), Elsevier, Amsterdam, pp. 1-28, 1985.

144. Kocsis, J.D. and Waxman, S.G. Demyelination: causes and mechanisms of clinical abnormality and functional recovery. In: Handbook of Clinical Neurology, Vol. 3, The Demyelinating Diseases, Koetsier, J.C. (ed.), Elsevier, Amsterdam, pp. 29-47, 1985.

145. Black, J.A., Waxman, S.G. and Hildebrand, C. Membrane specialization and axo-glial association in the rat retinal nerve fibre layer: freeze-fracture observations. J. Neurocytol., 13:417-430, 1984. PMID: 6481406

146. Waxman, S.G. and Black, J.A. Freeze-fracture ultrastructure of the perinodal astrocyte and associated glial junctions. Brain Research, 308:77-87, 1984. PMID: 6434150

147. Waxman, S.G. and Sims, T.J. Specificity in central myelination: evidence for local regulation of myelin thickness. Brain Research, 292:179-185, 1984. PMID: 6697207

148. Anderson, M.J., Swanson, K.A., Waxman, S.G. and Eng, L.F. Glial fibrillary acidic protein in regenerating teleost spinal cord. J. Histochem. Cytochem., 31:1099-1106, 1984. PMID: 6481149

149. Waxman, S.G., Kocsis, J.D. and Eng, D.L. Ligature-induced injury in peripheral nerve: electrophysiological observations on changes in action potential characteristics following blockade of potassium conductance. Muscle and Nerve, 8:85-92, 1985. PMID: 2414652

150. Sims, T.J., Gilmore, S.A., Waxman, S.G. and Klinge, E. Dorsal-ventral differences in the glia limitans of the spinal cord: an ultrastructural study in developing normal and irradiated rats. J. Neuropath. Exper. Neurol., 44:415-430, 1985. PMID: 4009209

151. Ransom, B.R., Yamate, C.L., Black, J.A. and Waxman, S.G. Rat optic nerve: disruption of gliogenesis with 5-azacytidine during postnatal development. Brain Research, 337:41-51, 1985. PMID: 2408709

152. Black, J.A., Sims, T.J., Waxman, S.G. and Gilmore, S. A. Membrane ultrastructure of developing axons in glial cell deficient rat spinal cord. J. Neurocytol., 13:79-104, 1985. PMID: 4009213

153. Waxman, S.G. Normal and abnormal axonal properties. In: Diseases of the Nervous System: Clinical Neurobiology, Asbury, A.K., McKhann, G.M., McDonald, W.I. (eds.), W.B. Saunders Co., Philadelphia, pp. 36-57, 1986.

154. Anderson, M.J. and Waxman, S.G. Neurogenesis in tissue cultures of adult teleost spinal cord. Devel. Brain Research, 20:203-212, 1985. PMID: 4027666

155. Sims, T.J., Waxman, S.G., Black, J.A. and Gilmore, S.A. Perinodal astrocytic processes at nodes of Ranvier in developing glial cell deficient rat spinal cord. Brain Research, 337:321-333, 1985. PMID: 4027576

156. Bowe, C.M., Kocsis, J.D. and Waxman, S.G. Differences between mammalian ventral and dorsal spinal roots in response to blockade of potassium channels during maturation. Proc. Roy. Soc. Lond. B, 224:355-366, 1985. PMID: 2410932

157. Waxman, S.G. and Black, J.A. Membrane structure of vesiculotubular complexes in developing axons in rat optic nerve: freeze-fracture evidence for sequential membrane assembly. Proc. Roy. Soc. Lond. B, 225:357-363, 1985. PMID: 2865731

158. Waxman, S.G. and Ritchie, J.M. Organization of ion channels in the myelinated nerve fiber. Science, 228:1502-1507, 1985. PMID: 2409596

159. Anderson, M.J. and Waxman, S.G. Neurogenesis in adult vertebrate spinal cord in situ and in vitro: a new model system. In: Nottebohm, F. (ed.), Ann. N.Y. Acad. Sci., 457:213-233, 1985. PMID: 3913365

160. Black, J.A. and Waxman, S.G. Specialization of astrocytic membrane at glia limitans in rat optic nerve: freeze-fracture observations. Neurosci. Lett., 55:371-378, 1985. PMID: 4011040

161. Hildebrand, C., Kocsis, J.D., Berglund, S. and Waxman, S.G. Myelin sheath remodeling in regenerated rat sciatic nerve. Brain Research, 358:163-170, 1985. PMID: 2416385

162. Anderson, M.J., Fong, H.L. and Waxman, S.G. Retrograde labeling of regenerated electromotor neurons with HRP in a teleost fish, *Sternarchus albifrons*: relation to cell death. Cell Tiss. Res., 241:237-240, 1985. PMID: 2411410

163. [Hildebrand](http://www.springerlink.com/content/?Author=C.+Hildebrand), C., [Remahl](http://www.springerlink.com/content/?Author=S.+Remahl), S. and [Waxman](http://www.springerlink.com/content/?Author=S.+G.+Waxman), S.G. [Axo-glial relations in the retina-optic nerve junction of the adult rat: electron-microscopic observations](http://www.springerlink.com/content/u1tx403mk830k888/). J. Neurocytol., 14:  597-617, 1985. PMID: 4067610

164. Waxman, S.G. Molecular organization of the cell membrane in normal and pathological axons: relation to glial contact. In: Glial-Neuronal Communication in Development and Regeneration, Althaus, H. and Seifert, W. (eds.), Springer-Verlag, Germany, pp. 711-736, 1987.

165. Kocsis, J.D., Bowe, C.M. and Waxman, S.G. Different effects of 4-aminopyridine on sensory and motor fibers: pathogenesis of paresthesias. Neurology, 36:117-120, 1986. PMID: 3001584

166. Waxman, S.G. Rules governing membrane reorganization and axon-glial interactions during the development of myelinated fibers. In: Progress in Brain Research, Vol. 71, Seil, F.J., Herbert, E. and Carlson, B. (eds.), pp. 121-142, 1987. PMID: 3588937

167. Black, J.A., Waxman, S.G. and Hildebrand, C. Axo-glial relations in the retina-optic nerve junction of the adult rat: freeze-fracture observations. J. Neurocytol., 14:887- 907, 1985. PMID: 3831245

168. Waxman, S.G. The astrocyte as a component of the node of Ranvier. Trends in Neurosciences, 9:250-253, 1986.

169. Kocsis, J.D. and Waxman, S.G. Ionic channel organization of normal and regenerating mammalian axons. Progress in Brain Research, Vol. 71, Seil, F.J., Herbert, E. and Carlson, B. (eds.), pp. 89- 102, 1987. PMID: 2438722

170. Sims, T.J., Waxman, S.G. and Gilmore, S.A. Glial proliferation in the irradiated rat spinal cord. Acta Neuropathol., 68:169-172, 1985. PMID: 4072625

171. Waxman, S.G. Molecular neurobiology of the myelinated nerve fiber: ion-channel distributions and their implications for demyelinating diseases. In: Molecular Neurobiology in Neurology and Psychiatry, Kandel, E.R. (ed.), Raven Press, New York, pp. 7-37, 1987. PMID: 2455313

172. Black, J.A. and Waxman, S.G. Molecular structure of the axolemma of developing axons following altered gliogenesis in rat optic nerve. Devel. Biol., 115:301-312, 1986. PMID: 2423398

173. Waxman, S.G. and Anderson, M.J. Generation of electromotor neurons in Sternarchus albifrons: differences between normal and regenerating spinal cord. Devel. Biol., 112:338-344, 1985. PMID: 4076546

174. Black, J.A., Waxman, S.G., Ransom, B.R. and Feliciano, M.D. A quantitative study of developing axons and glia following altered gliogenesis in rat optic nerve. Brain Res., 380:122-136, 1985. PMID: 2428420

175. Waxman, S.G. Functional recovery in diseases of the nervous system. In Functional Recovery in Neurological Disease, Waxman, S.G., (ed.), Raven Press, New York, pp. 1-9, 1988. PMID: 3344629

176. Waxman, S.G. Clinical course and electrophysiology of multiple sclerosis. In: Functional Recovery in Neurological Disease, Waxman, S. G. (ed.), Raven Press, New York, pp. 157-184, 1988. PMID: 3278517

177. Waxman, S.G. Biophysical mechanisms of impulse conduction in demyelinated axons. In: Functional Recovery in Neurological Disease, Waxman, S.G., (ed.), Raven Press, New York, pp. 185-214, 1988.

PMID: 2449805

178. Kocsis, J.D. and Waxman, S.G. Membrane organization and myelin remodeling in regenerating axons. In Functional Recovery in Neurological Disease, Waxman, S. G., (ed.), Raven Press, New York, pp. 31-51, 1988. PMID: 3278520

179. Fields, R.D., Black, J.A., Bowe, C.M., Kocsis, J.D. and Waxman, S. G. Differences in intramembranous particle distribution in the paranodal axolemma are not associated with functional differences of dorsal and ventral roots. Neuroscience Lett., 67:13-18, 1986. PMID: 2425295

180. Waxman, S.G., Ricaurte, G.A. and Tucker, S.G. Thalamic hemorrhage with neglect and memory disorder. J. Neurol. Sci., 75:105-112, 1986. PMID: 3746338

181. Anderson, M.J., Choy, C.Y. and Waxman, S.G. Self-organization of ependyma in regenerating teleost spinal cord: evidence from serial section reconstructions. J. Embryol. Exper. Morphol., 96:1- 18, 1986.

PMID: 3805978

182. Hildebrand, C., Mustafa, G.Y. and Waxman, S.G. Remodelling of internodes in regenerated rat sciatic nerve: electron microscopic observations. J. Neurocytol., 15:681-692, 1986. PMID: 3819776

183. Waxman, S.G. Conduction properties and pathophysiology of myelinated and nonmyelinated nerve fibers. In Handbook of Clinical Neurology: Vol. 51 (7) Neuropathies, Matthews, W. B., (ed.), Elsevier, Amsterdam, pp. 41-62, 1987.

184. Shaywitz, B. and Waxman, S.G. Dyslexia, New England J. Med., 316:1268-1270, 1987. PMID: 3574387

185. Black, J.A., Waxman, S.G., and Smith, M.E. Macromolecular structure of axonal membrane during acute experimental allergic encephalomyelitis in rat and guinea pig spinal cord. J. Neuropath. Exp. Neurol., 46:167-184, 1987. PMID: 3493331

186. Kocsis, J.D., Gordon, T.R. and Waxman, S.G. Mammalian optic nerve fibers display two pharmacologically distinct potassium channels. Brain Research, 393:357-361, 1986. PMID: 2429732

187. Waxman, S.G., and Black, J.A. Macromolecular structure of the Schwann cell membrane: perinodal microvilli. J. Neurol. Sci., 77:23-34, 1987. PMID: 3806135

188. Black, J.A., Waxman, S.G., Sims, T.J. and Gilmore, S. A. Effects of delayed myelination by oligodendrocytes and Schwann cells on the macromolecular structure of axonal membrane in rat spinal cord. J. Neurocytol., 15:745-762, 1986. PMID: 3819778

189. Bowe, C., Kocsis, J.D. and Waxman, S.G. Association of the supernormal period and depolarizing afterpotential in myelinated frog and rat sciatic nerve. Neuroscience, 21:585-594, 1987. PMID: 3497361

190. Fields, R.D., Ellisman, M.H. and Waxman, S.G. Changes in synaptic morphology associated with presynaptic and postsynaptic activity: an in vitro study of the electrosensory organ of the Thornback Ray. Synapse, 1:335-347, 1987. PMID: 2901790

191. Waxman G. Thalamic amnesia: clinical and experimental aspects. Int'l. Review of Neurobiology, 29:245-257, 1988. PMID: 3042664

192. Fields, D.R., Black, J.A. and Waxman, S.G. Filipin-cholesterol binding in CNS axons prior to myelination: evidence for microheterogeneity in premyelinated axolemma. Brain Research, 404:21-32, 1987. PMID: 3567567

193. Bowe, C. M., Kocsis, J.D., Waxman, S.G. and Hildebrand, C. Physiological properties of regenerated rat sciatic nerve following lesions at different postnatal ages. Devel. Brain Research, 34:123-134, 1987.

PMID: 2441822

194. Davis, P.K., Carlini, W.G., Ransom, B.R., Black, J.A. and Waxman, S.G. Carbonic anhydrase activity develops postnatally in the rat optic nerve. Devel. Brain Research, 31:291-298, 1987. PMID: 3803720

195. Bowe, C.M., Kocsis, J.D., Targ, E.F. and Waxman, S.G. Physiological effects of 4- aminopyridine on demyelinated mammalian motor and sensory fibers. Ann. of Neurology, 22:264-268, 1987. PMID: 2821876

196. Kocsis, J.D., Eng, D.L., Gordon, T.R. and Waxman, S.G. Functional differences between 4-aminopyridine and tetraethylammonium-sensitive potassium channels in myelinated axons. Neurosci. Lett., 75:193-198, 1987. PMID: 2437499

197. Anderson, M.J., Waxman, S.G., Lee, Y-L. and Eng, L.F. Molecular differentiation of neurons from ependyma-derived cells in tissue cultures of regenerating teleost spinal cord. Molec. Brain Research, 2:131-136, 1987. PMID: 3113659

198. Anderson, M.J., Waxman, S.G. and Fong, H.L. Explant cultures of teleost spinal cord: source of neurite outgrowth. Devel. Biol., 119:601-604, 1987. PMID: 3803720

199. Hume, A.L. and Waxman, S.G. Evoked potentials in suspected multiple sclerosis: diagnostic value and prediction of clinical course. J. Neurol. Sci., 83:191-210, 1988. PMID: 3128646

200. Fields, R.D. and Waxman, S.G. Regional membrane heterogeneity in premyelinated CNS axons: factors influencing the binding of sterol-specific probes. Brain Research, 443:231-242, 1988. PMID: 3359268

201. Black, J.A., and Waxman, S.G. Freeze-fracture studies on unmyelinated axolemma of rat cervical sympathetic trunk: correlation with saxitoxin binding. Proc. Roy. Soc. Lond., 233:45-54, 1988. PMID: 2451831

202. Waxman, S.G. Nonpyramidal motor systems and functional recovery after damage to the central nervous system. J. Neurol. Rehab., 2:1-6, 1988.

203. Waxman, S.G. The neurobiology of normal and demyelinated axons. In: The Neurobiology of Disease, Pearlman A. L. and Collins R. (eds.), Oxford University Press, New York, pp. 3-21, 1990.

204. Gordon, T.R., Kocsis, J.D. and Waxman, S.G. Evidence for the presence of two types of potassium channels in the rat optic nerve. Brain Research, 447:1-10, 1988. PMID: 2454699

205. Sims, T.J., Gilmore, S.A. and Waxman, S.G. Temporary adhesions between axons and myelin-forming processes. Devel. Brain Research, 40:223-232, 1988. PMID: 3133081

206. Waxman, S.G. Axon-glial interactions in regeneration. In: Neural Regeneration Research, Seil, F.J. (ed.), A.R. Liss, New York, pp. 43-66, 1988.

207. Waxman, S.G. and Black, J.A. Unmyelinated and myelinated axon membrane from rat corpus callosum: differences in macromolecular structure. Brain Research, 453:337- 343, 1988. PMID: 3401771

208. Gordon, T.R. and Waxman, S.G. Sensory abnormalities of the limbs and trunk. In Neurology in Clinical Practice, Bradley, W.G., Daroff, R.B., Fenichel, G.M. and Marsden, C.D. (eds.), Butterworth Publ., Storeham, Mass., pp. 299-315, 1990.

209. Waxman, S.G. Neuronal response to injury. In Current Issues in Neural Regeneration, Reier, P.J., Bunge, R.P. and Seil, F.J. (eds.), A.R. Liss, New York, pp. 3- 12, 1988.

210. Black, J.A. and Waxman, S.G. The perinodal astrocyte. Glia, 1:169-183, 1988. PMID: 2976037

211. Bowe, C.M., Hildebrand, C., Kocsis, J.D. and Waxman, S.G. Morphological and physiological properties of neurons after long-term axonal regeneration: observations on chronic and delayed sequelae of peripheral nerve injury. J. Neurol. Sci., 91:259- 292, 1989. PMID: 2769297

212. Black, J.A., Fields, D.R. and Waxman, S.G. Macromolecular structure of axonal membrane in the optic nerve of the Jimpy mouse. J. Neuropath. Exper. Neurol., 47:588- 598, 1988. PMID: 3171604

213. Waxman, S.G., Sims, T.J. and Gilmore, S.A. Cytoplasmic membrane elaborations in oligodendrocytes during myelination of spinal motoneuron axons. Glia, 1:286-291, 1988. PMID: 2977125

214. Bowe, C.M., Yu, C.Y. and Waxman, S.G. Morphological changes in spinal motor neurons giving rise to long-term regenerated sciatic nerve axons. Brain Research, 463:69-77, 1988. PMID: 3196912

215. Waxman, S.G. Demyelination in spinal cord injury. J. Neurol. Sciences, 91:1-14, 1989. PMID: 2664092

216. Friedman, B., Black, J.A., Hockfield, S., Waxman, S.G. and Ransom, B.R. Antigenic abnormalities in fiber tract astrocytes of myelin-deficient rats: an immunocytochemical study in the olfactory cortex. Devel. Neurosci., 11:99-111, 1989. PMID: 2743882

217. Waxman, S.G. Pathophysiology of multiple sclerosis. In Handbook of Multiple Sclerosis, Cook, S.D. (ed.), Marcel-Dekker, Inc., New York, pp. 219-250, 1990.

218. Gordon, T.R., Kocsis, J.D. and Waxman, S.G. Pharmacological sensitivities of two afterhyperpolarizations in rat optic nerve. Brain Research, 502:252-257, 1989. PMID: 2555026

219. Eng, D.L., Gordon, T.R., Kocsis, J.D. and Waxman, S.G. Development of 4-AP and TEA sensitivities in mammalian myelinated nerve fibers. J. Neurophysiol., 60:2168-2179, 1988. PMID: 2853208

220. Waxman, S.G., Black, J. A., Kocsis, J.D. and Ritchie, J.M. Low density of sodium channels supports action potential conduction in axons of neonatal rat optic nerve. Proc. Natl. Acad. Sci., 86:1406-1410, 1989. PMID: 2537496

221. Byrne, T.N. and Waxman, S.G. Spinal Cord Compression, F.A. Davis Co., Philadelphia, 1990.

222. Friedman, B., Hockfield, S., Black, J.A., Woodruff, K.A. and Waxman, S.G. In situ demonstration of mature oligodendrocytes and their processes: an immunocytochemical study with a new monoclonal antibody, Rip. Glia, 2:380-390, 1989. PMID: 2530173

223. Vollmer, T., and Waxman, S.G. Multiple sclerosis and other demyelinating diseases. In: Comprehensive Neurology, Rosenberg, R. (ed.). Raven Press, New York, pp. 489-525, 1991.

224. Eng, D.L., Gordon, T.R., Kocsis, J.D., and Waxman, S.G. Current-clamp analysis of a time-dependent rectification in rat optic nerve. J.Physiol. (Lond), 421: 15-202, 1990. PMID: 2348391

225. Black, J.A., Kocsis, J.D. and Waxman, S.G. Ion channel organization of the myelinated fiber. Trends in Neurosci., 13:48-54, 1990. PMID: 1690930

226. Waxman, S.G., Black, J.A., Duncan, I.D. and Ransom, B.R. Macromolecular structure of axon membrane and action potential conduction in myelin deficient and myelin deficient heterozygote rat optic nerves. J. Neurocytology,19:11-27, 1990. PMID: 2351992

227. Stys, P.K., Ransom, B.R., Waxman, S.G. and Davis, P.K. Role of extracellular calcium in anoxic injury of mammalian central white matter. Proc. Natl. Acad. Sci., 87:4212-4216, 1990. PMID: 2349231

228. Trosch, R., Sze, G., Brass, L.M. and Waxman, S.G. Emotional facial paresis with striatocapsular infarction. J. Neurol. Sci., 98:195-202, 1990. PMID: 2243229

229. O'Regan, M. H., Kocsis, J. D., and Waxman, S. G. Depolarization-dependent actions of dihydropyridines on synaptic transmission in the in vitro rat hippocampus. Brain Research, 527:181-191, 1990. PMID: 1701335

230. Ransom, B. R., Waxman, S. G., and Davis, P. K. Anoxic injury of CNS white matter: protective effect of ketamine. Neurology, 40:1399-1404, 1990. PMID: 2168024

231. Gordon, T.R., Kocsis, J.D. and Waxman, S.G. Electrogenic pump (Na+/K+-ATPase) activity in rat optic nerve. Neuroscience, 37:829-837, 1990. PMID: 2174135

232. Stys, P.K., Ransom, B.R. and Waxman, S.G. Effects of polyvalent cations and dihydropyridine calcium channel blockers on recovery of CNS white matter from anoxia. Neuroscience Lett., 115:293-299, 1990. PMID: 2234507

233. Ransom, B.R., Stys, P.K. and Waxman, S.G. The pathophysiology of anoxic injury in central nervous system white matter. Stroke, 21 (Suppl. III):III-52 - III-57, 1990. PMID: 2237986

234. Gordon, T.R., Kocsis, J.D. and Waxman, S.G. TEA-sensitive potassium channels and inward rectification in regenerated rat sciatic nerve. Muscle and Nerve, 14: 640-646, 1991. PMID: 1922170

235. Waxman, S.G. Demyelination in spinal cord injury and multiple sclerosis: What can we do to enhance functional recovery? J. Neurotrauma, 9:S105-S117, 1992. PMID: 1588601

236. Waxman, S.G., Davis, P.K., Black, J.A. and Ransom, B.R. Anoxic injury of mammalian central white matter: Decreased susceptibility in myelin-deficient optic nerve. Ann. of Neurol., 28:335-340, 1990. PMID: 2241117

237. Sontheimer, H., Mintern, J.E., Ransom, B.R., Black, J.A., Cornell-Bell, A., and Waxman, S.G. Cell coupling is restricted to subpopulations of astrocytes cultured from rat hippocampus and optic nerve. Ann. N.Y. Acad. Sci., 633:592-597, 1991. PMID: 1789588

238. Bhisitkul, R.B., Kocsis, J.D., Gordon, T.R., and Waxman, S.G. Trophic influence of the distal nerve segment on GABAA receptor expression in axotomized adult sensory neurons, Exper. Neurol., 109:273-278, 1990. PMID: 2170161

239. Stys, P.K., Ransom, B.R. and Waxman, S.G. Compound action potential of nerve recorded by suction electrode: A theoretical and experimental analysis. Brain Research, 546: 18-32, 1991. PMID: 1855148

240. Sims, T.J., Gilmore, S.A., and Waxman, S.G. Radial glia give rise to perinodal processes. Brain Research, 549: 25-36, 1991. PMID: 1893250

241. Sontheimer, H., Ransom, B.R., Cornell-Bell, A.H., Black, J.A. and Waxman, S.G. Na+- current expression in rat hippocampal astrocytes in vitro: Alterations during development, J. Neurophysiol., 65:3-19, 1991. PMID: 1999729

242. O'Regan, M.H., Kocsis, J.D. and Waxman, S.G. Nimodipine and nifedipine enhance synaptic transmission in CA1 pyramidal neurons, Exper. Brain Research, 84: 224-228, 1991. PMID: 1649768

243. Vollmer, T.L. and Waxman, S.G. Demyelinating disorders of the central nervous system, In Emergent and Urgent Neurology, Weiner W.J. (ed), Lippencott, Philadelphia, pp. 339-389, 1991.

244. Byrne, T.N., Bose, A., Sze, G. and Waxman, S.G. Syphilitic meningitis causing paraparesis in an HIV-negative woman, J. Neurol. Sci., 103:48-50, 1991. PMID: 1865231

245. Sontheimer, H., Minturn, J.E., Black, J.A., Waxman, S.G. and Ransom, B.R. Specificity of cell-cell coupling in rat optic nerve astrocytes in vitro, Proc. Natl. Acad. Sci., 87:9833-9837, 1990. PMID: 2263634

246. Waxman, S.G., Ransom, B.R. and Stys, P.K. Non-synaptic mechanisms of calcium-mediated injury in CNS white matter. Trends in Neurosciences, 14:461-468, 1991. PMID: 1722366

247. Sontheimer, H., Waxman, S.G. and Ransom, B.R. Relationship between Na+-current expression and cell coupling in astrocytes cultured from hippocampus. J. Neurophysiol., 65:989-1002, 1991. PMID: 2051214

248. Stys, P.K., Waxman, S.G. and Ransom, B.R. Na+-Ca2+ exchanger mediates Ca2+ influx during anoxia in mammalian central nervous system white matter. Ann. Neurol., 30:375-380, 1991. PMID: 1952825

249. Vollmer, T.L., Brass, L.M. and Waxman, S.G. Lhermitte's sign in a patient with herpes zoster. J. Neurol. Sci., 106:153-157, 1991. PMID: 1802963

250. Birch, B.D., Kocsis, J.D., DiGregorio, F., Bhisitkul, R.B. and Waxman, S.G. A voltage- and time-dependent rectification in rat dorsal spinal root axons. J. Neurophysiol., 66:719-730, 1991. PMID: 1661325

251. Black, J.A., Kocsis, J.D., and Waxman, S.G. Molecular structure of the myelinated nerve fiber. In Functions of Neuroglia, Roitbak, A. and Ocherashvili, E. (eds), Kabur, Moscow. pp. 93-107, 1993.

252. Waxman, S.G. Molecular and cellular organization of the central nervous system: Implications for new therapeutics. In: Molecular and Cellular Approaches to the Treatment of Neurological Disease. Waxman, S.G. (ed), Raven Press, New York, pp. 1-22, 1993. PMID: 8380236

253. Ransom, B.R., Waxman, S.G. and Stys, P.K. Anoxic injury of central myelinated axons: Ionic mechanisms and pharmacology. In Molecular and Cellular Approaches to the Treatment of Neurological Disease. Waxman, S.G. (ed), Raven Press, New York, pp. 121-151, 1993. PMID: 8417464

254. Kocsis, J.D., Black, J.A. and Waxman, S.G. Pharmacological modification of axon membrane molecules and cell transplantation as approaches to the restoration of conduction in demyelinated axons. In Molecular and Cellular Approaches to the Treatment of Neurological Disease. Waxman, S.G. (ed), Raven Press, New York, pp. 265-292, 1993. PMID: 8380237

255. Stys, P.K., Waxman, S.G. and Ransom, B.R. Ionic mechanisms of anoxic injury in mammalian CNS white matter: Role of Na+ channels and Na+-Ca2+ exchanger. J. Neurosci., 12:430-439, 1992. PMID: 1311030

256. Utzschneider, D.A., Kocsis, J.D. and Waxman, S.G. Differential sensitivity to hypoxia of the peripheral versus central trajectory of primary afferent axons. Brain Research, 551: 136-142, 1991. PMID: 1913145

257. Waxman, S.G. Peripheral nerve abnormalities in multiple sclerosis. Muscle & Nerve, 16: 1-5, 1993. PMID: 8380899

258. Waxman, S.G. The perinodal astrocyte: Functional and developmental considerations. In: Biology and Pathology of Astrocyte–Neuron Interactions. Fedoroff, S., Juurlink, B.H.J. and Doucette, R., (eds), Plenum Press, New York, pp. 15-26, 1993.

259. Waxman, S.G., Black, J.A., Stys, P.K. and Ransom, B.R. Ultrastructural concomitants of anoxic injury and early post-anoxic recovery in rat optic nerve. Brain Research, 574: 105-119, 1992. PMID: 1638387

260. Waxman, S.G. and Kocsis, J.D. Molecular and cellular pathophysiology of demyelinating disorders. In Adult Clinical Neurology, Mohr, J.P. and Gautier, J.C. (Eds), pages 16-25, 1996.

261. Stys, P.K., Ransom, B.R. and Waxman, S.G. Tertiary and quaternary local anesthetics protect CNS white matter from anoxic injury at concentrations that do not block excitability. J. Neurophysiol., 67:236-240, 1992. PMID: 1313081

262. Waxman, S.G. Molecular organization and pathophysiology of axons. In: Diseases of the Nervous System: Clinical Neurobiology, 2nd ed. Asbury, A.K., McKhann, G.M., McDonald, W.I. (eds.), W.B. Saunders Co., Philadelphia, pp. 25-46, 1992.

263. Sontheimer, H., Ransom, B.R. and Waxman, S.G. Different Na+ currents in P0 and P7–derived hippocampal astrocytes *in vitro*: Evidence for a switch in Na+ channel expression *in vivo*. Brain Research, 597: 24-29, 1992. PMID: 1335819

264. Waxman, S.G., Stys, P.K., Black, J.A. and Ransom, B.R. Role of Na+ conductance and the Na+–Ca++ exchanger in anoxic injury of CNS white matter. In Pharmacology of Cerebral Ischemia. Krieglstein, J., and Oberpichler–Schwenk, H. (eds.), Wissenschaftliche Verlagsgesellschaft, Stuttgart, pp. 13-34, 1992.

265. Caffrey, J.M., Eng, D.L., Black, J.A., Waxman, S.G. and Kocsis, J.D. Three types of sodium channels in adult rat dorsal root ganglion neurons. Brain Research, 592:283-297, 1992. PMID: 1280518

266. Waxman, S.G. and Ritchie, J.M. Molecular dissection of the myelinated axon. Ann. Neurol., 33:121-136, 1993. PMID: 7679565

267. Waxman, S.G. Aminopyridines and the treatment of spinal cord injury. J. Neurotrauma, 10:19-25, 1993. PMID: 8320729

268. Sontheimer, H., Black, J.A., Ransom, B.R., and Waxman, S.G. Ion channels in spinal cord astrocytes *in vitro*: I. Transient expression of high levels of Na+ and K+ channels. J. Neurophysiol., 68:985-999, 1992. PMID: 1331358

269. Sontheimer, H., and Waxman, S.G. Ion channels in spinal cord astrocytes *in vitro*: II. Biophysical and pharmacological analysis of two Na+ current types. J. Neurophysiol., 68:1000-1011, 1992. PMID: 1331355

270. Thio, C.L., Waxman, S.G., and Sontheimer, H. Ion channels in spinal cord astrocytes *in vitro:* III. Modulation of channel expression by co-culture with neurons and neuron-conditioned medium. J. Neurophysiol., 69:819-831, 1993. PMID: 7681866

271. Stys, P.K., Waxman, S.G. and Ransom, B.R. Effects of temperature on evoked electrical activity and anoxic injury in CNS white matter. J.Cereb. Blood Flow Metab., 12:977-986, 1992. PMID: 1400652

272. Utzschneider, D.A., Thio, C., Sontheimer, H., Ritchie, J.M., Waxman, S.G. and Kocsis, J.D. Action potential conduction and sodium channel content in the optic nerve of the myelin-deficient rat. Proc. Roy. Soc. Lond. B., 254:245-250, 1993. PMID: 8108457

273. Black, J.A., Yokoyama, S., Higashida, H., Ransom, B.R. and Waxman, S.G. Sodium channel mRNA I, II and III in the CNS: Cell-specific expression. Molec. Brain Research, 22:275-290, 1994. PMID: 8015385

274. Waxman, S.G. Molecular anatomy of the node of Ranvier: Newer concepts. In: Neurobiology of Disease: Contributions from Neuroscience to Clinical Neurology, Bostock, H., Kirkwood, P. and Pullen, T. (eds). Cambridge University Press, pp. 13-29, 1996.

275. Holloway, S.F., Fayad, P.B., Kalb, R.G., Guarnaccia, J.B., and Waxman, S.G. Painless aortic dissection presenting as a progressive myelopathy. J Neurol Sci.,120: 141-145, 1993. PMID: 8138802

276. Waxman, S. G., Black, J. A., Ransom, B. R., and Stys, P. K.: Protection of the axonal cytoskeleton in anoxic optic nerve by decreased extracellular calcium. Brain Research, 614:137-145, 1993. PMID: 8348309

277. Waxman, S.G., Utzschneider, D.A., and Kocsis, J.D. Enhancement of action potential conduction following demyelination: Experimental approaches to restoration of function in multiple sclerosis and spinal cord injury. Progress in Brain Research, 100: 233-244, 1994. PMID: 7938524

278. Kocsis, J. D., Rand, M. N., Chen, B., Waxman, S. G., and Pourcho, R. Kainate elicits elevated nuclear calcium signals in retinal neurons via calcium–induced calcium release. Brain Research, 616:273-282, 1993. PMID: 8102939

279. Waxman, S. G., and Black, J. A. Axo–glial interactions at the cellular and molecular levels in CNS myelinated fibers. In: Neuroglial Cells. Ransom, B. R. and Kettenmann, H. (eds), Oxford, New York, pp 587-613, 1995.

280. Ransom, B.R., Waxman, S.G. and Stys, P.K. Anoxic injury of central myelinated axons: Non-synaptic ionic mechanisms. In Cerebral Ischemia and Basic Mechanisms, Hartmann, A., Yatsu, F. and Kutschinsky, W. (eds), Springer-Verlag, Berlin, pp. 77-91, 1994. PMID: 8417464

281. Byrne, T.N. and Waxman, S.G. Paraplegia and spinal cord syndromes. In: Neurology in Clinical Practice, 2nd Edition. Bradley, W.G., Daroff, R.B. Fenichel, G.M. and Marsden, C.D. (eds.). Butterworth-Heinemann Publishers, pp. 345-360, 1996.

282. Utzschneider, D.A., Rand, M.N., Waxman, S.G. and Kocsis, J.D. Nuclear and cytoplasmic Ca2+ signals in developing rat dorsal root ganglion neurons studied in excised tissue. Brain Research, 635:231-238, 1994. PMID: 8173960

283. Fern, R., Ransom, B.R., Stys, P.K. and Waxman, S.G. Pharmacological protection of CNS white matter during anoxia: Actions of phenytoin, carbamazepine and diazepam. J. Pharmacol. Exper. Ther., 266:1549-1555, 1993. PMID: 8371157

284. Stys, P.K., Sontheimer, H., Ransom, B.R. and Waxman, S.G. Non-inactivating, TTX-sensitive Na+ conductance in rat optic nerve axons. Proc. Natl. Acad. Sci., 90:6976-6980, 1993. PMID: 8394004

285. Sontheimer, H. and Waxman, S.G. Expression of voltage-activated ion channels by astrocytes and oligodendrocytes in the hippocampal slice. J. Neurophysiol., 70:1863-1873, 1993. PMID: 7507520

286. Oh, Y., Black, J.A. and Waxman, S.G. The expression of rat brain voltage-sensitive Na+ channel mRNAs in astrocytes. Molec. Brain Research, 23:57-65, 1994. PMID: 8028484

287. Utzschneider, D.A., Archer, D.R., Kocsis, J.D., Waxman, S.G. and Duncan, I.D. Transplantation of glial cells enhances action potential conduction of amyelinated spinal cord axons in the myelin-deficient rat. Proc. Natl. Acad. Sci., 91:53-57, 1994. PMID: 8278406

288. Waxman, S.G. and Byrne, T.N. Spinal cord compression. In: Diagnosis and Management of Disorders of the Spinal Cord. Young, R.R. and Woolsey, R.M. (eds.). Saunders, pp. 317-331, 1995.

289. Sontheimer, H., Fernandez-Marques, E., Ullrich, N., Pappas, C., and Waxman, S.G. Astrocyte Na+ channels are required for maintenance of Na+/K+-ATPase activity. J. Neurosci., 14:464-2475, 1994. PMID: 8182422

290. Stys, P.K., and Waxman, S.G. Activity-dependent modulation of excitability: implications for axonal physiology and pathophysiology. Muscle and Nerve, 17:969-975, 1994. PMID: 7520532

291. Waxman, S.G. Voltage-gated ion channels in axons: Localization, function, and development. In: The Axon, Waxman, S.G., Kocsis, J.D., and Stys, P.K. (eds), Oxford University Press, pp. 218-242, 1995.

292. Stys, P.K., Waxman, S.G., and Ransom, B.R. Ion pumps and exchangers. In: The Axon, Waxman, S.G., Kocsis, J.D., and Stys, P.K. (eds), Oxford University Press, pp. 296-310, 1995.

293. Black, J.A., Sontheimer, H. and Waxman, S.G. The oligodendrocyte, the perinodal astrocyte, and the central node of Ranvier. In: The Axon. Waxman, S.G., Kocsis, J.D., and Stys, P.K. (eds), Oxford University Press, pp. 116-143, 1995.

294. Waxman, S.G., Kocsis, J.D., and Black, J.A. Pathophysiology of demyelinated axons. In: The Axon, Waxman, S.G., Kocsis, J.D., and Stys, P.K. (eds), Oxford University Press, pp. 438-461, 1995.

295. Stys, P.K., Ransom, B.R., Black, J.A. and Waxman, S.G. Anoxic-ischemic injury in axons. In: The Axon, Waxman, S.G., Kocsis, J.D., and Stys, P.K. (eds), Oxford University Press, pp. 462-479, 1995.

296. Goldstein, J.M., Waxman, S.G., Vollmer, T.L., Lang, B., Johnston, I., and Newsom-Davis, J. Subacute cerebellar degeneration and Lambert-Eaton myasthenic syndrome associated with antibodies to voltage-gated calcium channels: Differential effect of immunosuppressive therapy on central and peripheral defects. J. Neurol., Neurosurg. Psychiatry, 57:1138-1139, 1994. PMID: 8089692

297. Waxman, S.G. Clinical observations on the emotional motor system. In: The Emotional Motor System, Holstage, G. Bandler, R. and Saper, C. (eds.), Elsevier Publishing Co., pp 595-605, 1996.

298. Kocsis, J.D., Rand, M.N., Lankford, K., and Waxman, S.G. Intracellular calcium mobilization and neurite outgrowth in mammalian neurons. J. Neurobiol., 25: 252-264, 1994. PMID: 8195789

299. Black, J.A., Yokoyama, S., Waxman, S.G., Oh, Y., Zur, K.B., Sontheimer, H., Higashida, H., and Ransom, B.R. Sodium channel mRNAs in cultured spinal cord astrocytes: *in situ* hybridization in identified cell types. Molec. Brain Res., 23:235-245,1994. PMID: 8057780

300. Honmou, O., Utzschneider, D.A., Rizzo, M.A., Bowe, C.M., Waxman, S.G. and Kocsis, J.D. Delayed depolarization and slow sodium currents in cutaneous afferents. J. Neurophysiol., 71:1627-1638, 1994. PMID: 8064338

301. Waxman, S.G., Black, J.A., Ransom, B.R. and Stys, P.K. Anoxic injury of rat optic nerve: ultrastructural evidence for coupling between Na+ influx and Ca2+-mediated injury in myelinated

CNS axons. Brain Res., 644:197-204, 1994. PMID: 8050031

302. Waxman, S.G., Kocsis, J.D. and Black, J.A. Type III sodium channel mRNA is expressed in embryonic but not adult spinal sensory neurons, and is re-expressed following axotomy. J. Neurophysiol.,72:466-471,1994. PMID: 7965028

303. Fern, R., Ransom, B.R., and Waxman, S.G. Ca++-mediated injury in anoxic white matter: autoprotective mechanisms and therapeutic strategies. In Pharmacology of Cerebral Ischemia.

J. Krieglstein and H. Oberpichler-Schwank, (eds.), pp 31-46, 1994.

304. Black, J.A., Westenbroek, R., Ransom, B.R., Catterall, W.A. and Waxman, S.G. Type II sodium channels in spinal cord astrocytes *in situ*: Immunocytochemical observations. Glia,12:219-227, 1994. PMID: 7851989

305. Kocsis, J.D., Rand, M.N., Lankford, K. and Waxman, S.G. Nuclear calcium elevation may initiate neurite outgrowth in mammalian neurons. Progr. Brain Res., 103:137-151, 1994. PMID: 7886202

306. Fayad, P.B., Ransom, B.R. and Waxman, S.G. Recent clinical and basic advances in white matter ischemia. In: Current Review of Cerebrovascular Disease, Second Edition. Fisher, M. and Bogousslavsky, J. (eds.), Current Medicine, pp. 81-94, 1996.

307. Oh, Y., Sashihara, S., and Waxman, S.G. *In situ* hybridization localization of the Na+ channel ß1 subunit mRNA in rat CNS neurons. Neuroscience Letters, 176:119-122, 1994. PMID: 7970226

308. Rizzo, M.A., Kocsis, J.D. and Waxman, S.G. Slow sodium conductances of dorsal root ganglion neurons: Intraneuronal homogeneity and interneuronal heterogeneity. J. Neurophysiol., 72:2796-2816, 1994. PMID: 7897490

309. Oh, Y., and Waxman, S.G. The ß1 subunit mRNA of the rat brain Na+ channel is expressed in glial cells. Proc. Nat’l Acad. Sci., 91:9985-9989, 1994. PMID: 7937931

310. Fern, R., Waxman, S.G., and Ransom, B.R. Endogenous GABA attenuates CNS white matter dysfunction following anoxia. J. Neurosci., 15:699-708, 1995. PMID: 7823173

311. Leinders-Zufall, T., Rand, M. N., Waxman, S.G., and Kocsis, J.D. Differential role of two

Ca2+ -permeable non-NMDA glutamate channels in rat retinal ganglion cells: Kainate-induced cytoplasmic and nuclear Ca2+ signals. J. Neurophysiol., 72:2503-2516, 1994. PMID: 7884475

312. Rizzo, M.A., Kocsis, J.D. and Waxman, S.G. Mechanisms of paraesthesiae, dysaesthesiae, and hyperaesthesiae: Role of Na channel heterogeneity. Eur. Neurol., 36:3-12, 1996. PMID: 8719643

313. Waxman, S.G., Black, J.A., Sontheimer, H. and Kocsis, J.D. Glial cells and axo-glial interactions: Implication for demyelinating disorders. Clinical Neuroscience. 2:202-210, 1994. PMID: 7749889

314. Fern, R., Ransom, B.R., and Waxman, S.G. White matter stroke: Autoprotective mechanisms with therapeutic implications. Cerebrovascular Diseases, 6:59-67, 1996.

315. Oh, Y., Black, J.A. and Waxman, S.G. Rat brain Na+ channel mRNAs in non-excitable Schwann cells. FEBS Letters 350:342-346, 1994. PMID: 8070590

316. Lankford, K.L., Rand, M.N., Waxman, S.G. and Kocsis, J.D. Blocking Ca2+ mobilization with thapsigargin reduces neurite initiation in cultured adult rat DRG neurons. Devel. Brain Res., 84:151-163, 1995. PMID: 7743635

317. Fern, R., Waxman, S.G. and Ransom, B.R. Modulation of anoxic injury in CNS white matter by adenosine, and interaction between adenosine and GABA. J. Neurophysiol.,72:2609-2616, 1994. PMID: 7897478

318. Oh, Y. and Waxman, S.G. Differential Na+ channel ß1 subunit mRNA expression in stellate and flat astrocytes cultured from rat cortex and cerebellum: A combined *in situ* hybridization and immunocytochemistry study. Glia, 13:166-173, 1995. PMID: 7782102

319. Waxman, S.G. Sodium channel blockade by antibodies: A new mechanism of neurological disease? Ann. Neurol., 37:421-423. 1995. PMID: 7717678

320. Black, J.A., Westenbroek, R., Minturn, J.E., Ransom, B.R., Catterall, W.A. and Waxman, S.G. Isoform-specific expression of sodium channels in astrocytes *in vitro*: immunocytochemical observations. Glia, 14:133-144, 1995. PMID: 7558240

321. Oh, Y., Sashihara, S., Black, J.A., and Waxman, S.G. Na+ channel 1 subunit mRNA: differential expression in rat spinal sensory neurons. Molec. Brain Res., 30:357-361, 1995. PMID: 7637585

322. Matsui, T., Sashihara, S., Oh, Y. and Waxman, S.G. An orphan nuclear receptor, mROR, and its spatial expression in adult mouse brain. Molec. Brain Res., 33:217-226, 1995. PMID: 8750880

323. Waxman, S.G. Norman Geschwind, temporal lobe epilepsy, and peripheral nerve disease. In Behavioral Neurology and the Legacy of Norman Geschwind. S.C. Schachter, and O. Devinsky (eds.), Raven Press, New York, pp 31-39, 1997.

324. Azizi, S.A., Fayad, P.B., Fulbright, R., Giroux, M.l. and Waxman, S.G. Clivus and cervical spinal osteomyelitis with epidural abscess presenting with multiple cranial neuropathies. Clin. Neurol. and Neurosurg., 97:239-244, 1995. PMID: 7586856

325. Zur, K.B., Oh. Y., Waxman, S.G., and Black, J.A. Differential up-regulation of sodium channel- and ß1-subunit mRNAs in cultured embryonic DRG neurons following exposure to NGF. Molec. Brain Res., 30:97-105, 1995. PMID: 7609649

326. Sashihara, S., Oh, Y., Black, J.A. and Waxman, S.G. Na+ channel ß1 subunit mRNA expression in developing rat central nervous system, Molec. Brain Res., 34:239-250, 1995. PMID: 8750827

327. Waxman, S.G. From Lord Adrian to ion channels and beyond: The molecular basis of nerve transmission. In Recent Advances in Clinical Neurophysiology, J. Kimura & H. Shibasaki (eds.), Elsevier, New York, pp. 1-9, 1996.

328. Fern, R., Ransom, B.R., and Waxman, S.G. Voltage-gated calcium channels in CNS white matter: Role in anoxic injury. J. Neurophysiol., 74:369-377, 1995. PMID: 7472338

329. Black, J.A., Westenbroek, R.E., Catterall, W.A. and Waxman, S.G. Type II brain sodium channel expression in non-neuronal cells: Embryonic rat osteoblasts. Molec. Brain Res., 34:89-98, 1995. PMID: 8750864

330. Waxman, S.G. Molecular remodelling of neurons in multiple sclerosis: What we know, and what we must ask about brain plasticity in demyelinating diseases. In: Brain Plasticity. H-J Freund, B.A. Sabel and O.W. White (eds.), Raven Press, New York, pp 109-121, 1997.

331. Felts, P.A., Black, J.A., Oh, Y., and Waxman, S.G. Expression of Sodium Channel and ß-subunits in the nervous system of the myelin deficient rat. J. Neurocytol., 24:654-666, 1995. PMID: 7500121

332. Rizzo, M.A., Kocsis, J.D., and Waxman, S.G. Selective loss of slow and enhancement of fast Na+ currents in cutaneous afferent DRG neurons following axotomy. Neurobiol. Disease, 2:87-97, 1995. PMID: 8980012

333. Waxman, S.G., and Black, J.A. Expression of mRNA for a sodium channel in subfamily 2 in spinal sensory neurons, Neurochem. Research, 21:395-402, 1996. PMID: 8734431

334. Black, J.A., and Waxman, S.G. Sodium channel expression: a dynamic process in neurons and non-neuronal cells. Developmental Neuroscience, 18:139-153, 1996. PMID: 8894443

335. Dib-Hajj, S.D., and Waxman, S.G. Genes encoding the ß1 subunit of voltage-dependent Na+ channel in rat, mouse and human contain conserved introns. FEBS Letters, 377:485-489, 1995. PMID: 8549781

336. Kocsis, J.D., and Waxman, S.G. Transplantation of myelin-forming cells into the spinal cord: restoration of normal conduction in previously demyelinated axons. In: Glial Cells and Behavior. P. Laming (Ed.), Cambridge University Press. pp 181-198, 1998.

337. Fern, R., Ransom, B.R., and Waxman, S.G. Autoprotective Mechanisms in the CNS: Some new lessons from white matter. Molec. Chem. Neuropath. 27:702-714, 1996. PMID: 8962597

338. Sashihara, S., Greer, C.A., Oh, Y., and Waxman, S.G. Cell specific differential expression of Na+ channel ß1 subunit mRNA in the olfactory system during postnatal development and following denervation. J. Neuroscience. 16:702-714, 1996. PMID: 8551353

339. Honmou, O., Felts, P.A., Waxman, S.G., and Kocsis, J.D. Restoration of normal conduction properties in demyelinated spinal cord axons in the adult rat by transplantation of exogenous Schwann cells. J. Neuroscience. 16:3199-3208, 1996. PMID: 8627358

340. Waxman, S.G., and Kocsis, J.D. Functional repair of myelinated fibers in the spinal cord by transplantation of myelin-forming glial cells. In: Cell Biology and Pathology of Myelin. B.H.J. Juurlink, R.M. Devon, R. Doucette, A.J. Nazarali, D.J. Schreyer, and V.M.K. Verge (Eds.), Plenum Press. pp 283-299, 1998.

341. Sontheimer, H., Black, J.A., and Waxman, S.G. Voltage-gated sodium channels in glia: Properties and possible functions. Trends in Neuroscience. 19:325-332, 1996. PMID: 8843601

342. Waxman, S.G., and Ransom, B.R. Neuroprotection of CNS White Matter. In: Neuroprotection. P.R. Bär and F. Beal (Eds.), Marcel Dekker Publishers. pp. 305-319, 1997.

343. Dib-Hajj, S.D., Hinson, A.W., Black, J.A., and Waxman, S.G. Sodium channel mRNA in the B104 neuroblastoma cell line. FEBS Letts. 384:78-82, 1996. PMID: 8797808

344. Waxman, S.G., and Rizzo, M.A. The whiplash (hyperextension-flexion) syndrome--A disorder of dorsal root ganglion neurons? J. Neurotrauma. 13:735-740, 1996. PMID: 9002059

345. Gu, X.G., and Waxman, S.G. Action potential-like responses in B104 cells with low Na+ channel densities. Brain Res. 735:50-58, 1996. PMID: 8905169

346. Fern, R., Black, J.A., Ransom, B.R., and Waxman, S.G. Cd2+-induced injury in CNS white matter. J. Neurophysiol. 76:3264-3274, 1996. PMID: 8930271

347. Sashihara, S., Felts, P.A., Waxman, S.G., and Matsui, T. Orphan nuclear receptor ROR gene: Isoform-specific spatiotemporal expression during postnatal development of brain. Molec. Brain Res. 42:106-117, 1996. PMID: 8915586

348. Waxman, S.G. and Kocsis, J.D. Spinal cord repair: progress towards a daunting goal. The Neuroscientist. 3: 263-270, 1997.

349. Black, J.A., Dib-Hajj, S., McNabola, K., Jeste, S., Rizzo, M.A., Kocsis, J.D., and Waxman, S.G. Spinal sensory neurons express multiple sodium channel -subunit mRNAs. Molec. Brain Res. 43:117-132, 1996. PMID: 9037525

350. Roy, M.L., Saal, D., Perney, T., Sontheimer, H., Waxman, S.G., and Kaczmarek, L.K. Manipulation of the delayed rectifier Kv1.5 potassium channel in glial cells by antisense oligodeoxynucleotides. Glia. 18:177-184, 1996. PMID: 8915650

351. Dib-Hajj, S., Black, J.A., Felts, P. and Waxman, S.G. Down-regulation of transcripts for Na channel -SNS in spinal sensory neurons following axotomy. Proc. Nat'l. Acad. Sci. 93:14950-14954, 1996. PMID: 8962162

352. Felts, P.A., Yokoyama, S., Dib-Hajj, S., Black, J.A., and Waxman, S.G. Sodium channel -subunit mRNAs I, II, III, NaG, Na6 and hNE: Different expression patterns in developing rat nervous system. Molec. Brain Research 45: 71-83, 1997. PMID: 9105672

353. Gu, X.Q., Dib-Hajj, S., Rizzo, M.A., and Waxman, S.G. TTX-sensitive and -resistant Na+ currents, and mRNA for the TTX-resistant rH1 channel, are expressed in B104 cells. J. Neurophysiol. 77:236-246, 1997. PMID: 9120565

354. Waxman, S.G. Axon-glia interactions: Building a smart nerve fiber. Current Biology 7(7): R406-R410, 1997. PMID: 9210363

355. Sashihara, S., Waxman, S.G., and Greer, C.A. Down-regulation of Na+ channel mRNA following sensory deprivation of tufted cells in the neonatal rat olfactory bulb. Neuro Report 8:1289-1293, 1997. PMID: 9175131

356. Oyelese, A.A., Rizzo M.A., Waxman, S.G. and Kocsis, J.D. Differential effects of NGF and BDNF on axotomy-induced changes in GABAA receptor-mediated conductance and sodium currents in cutaneous afferent neurons. J. Neurophysiol. 78:31-42, 1997. PMID: 9242258

357. Vollmer, T.L., and Waxman, S.G. Multiple sclerosis and other demyelinating disorders. In: Comprehensive Neurology, 2nd Edition. R.N. Rosenberg and D.E. Pleasure (Eds.), John Wiley & Sons, New York, 1998, pp. 795-825.

358. Waxman, S.G. Editorial: Different strokes in different folks: Unique molecular signatures in cortical and deep brain infarcts. Cerebrovascular Disease 7:243-244, 1997.

359. Hinson, A.W., Gu, X.Q., Dib-Hajj, S.D., Black, J.A. and Waxman, S.G. Schwann cells modulate sodium channel expression in spinal sensory neurons in vitro. Glia 21:339-349, 1997. PMID: 9419009

360. Guarnaccia, J.B., Vollmer, T.L., and Waxman, S.G. Multiple sclerosis. In: Pharmacological Management of Neurological Disorders. S.J. Enna and J.T. Coyle (Eds.), McGraw Hill, New York. pp-377-430, 1998.

361. Imaizumi, T., Kocsis, J.D., and Waxman, S.G. Anoxic injury in the rat spinal cord: pharmacological evidence for multiple steps in Ca2+-dependent injury of the dorsal columns. J. Neurotrauma. 14: 299-312, 1997. PMID: 9199396

362. Ransom, B.R., Waxman, S.G., and Fern, R. Molecular Pathophysiology of White Matter Anoxic/Ischemic Injury. In: Stroke: Pathophysiology, Diagnosis, and Management, 3rd ed. H.J.M. Barnett, J.P. Mohr, B.M. Stein, F.M. Yatsu (Eds.), Churchill Livingstone, New York, 1998, pp. 85-101.

363. Fjell, J., Dib-Hajj, S., Fried, K., Black, J.A., and Waxman, S.G. Differential expression of sodium channel genes in retinal ganglion cells. Molec. Brain Research 50:197-204, 1997. PMID: 9406935

364. Black, J.A., Langworthy, K., Hinson, A.W., Dib-Hajj, S.D., and Waxman, S.G. NGF has opposing effects on Na+ channel III and SNS gene expression in spinal sensory neurons. NeuroReport 8: 2331-2335, 1997. PMID: 9243635

365. Felts, P.A., Black, J. A., Dib-Hajj, S.D. and Waxman, S.G. NaG: a sodium channel-like mRNA shared by Schwann cells and other neural crest derivatives. Glia 21:269-277, 1997. PMID: 9383036

366. Lankford, K.L., Waxman, S.G. and Kocsis, J.D. Mechanisms of enhancement of neurite regeneration: rat DRG neurite arborization in vitro after a conditioning sciatic nerve lesion in vivo.

J. Comp. Neurol. 391:11-29, 1998. PMID: 9527536

367. Cummins, T.R. and Waxman, S.G. Down-regulation of tetrodotoxin-resistant sodium currents and up-regulation of a rapidly repriming tetrodotoxin-sensitive sodium current in small spinal sensory neurons following nerve injury. J. Neurosci.17:3503-3514, 1997. PMID: 9133375

368. Steffensen, I., Waxman, S.G., Mills, L., and Stys, P.K. Immunolocalization of the Na+-Ca2+ exchanger in mammalian myelinated axons. Brain Research 776:1-9, 1997. PMID: 9439790

369. Oh, Y., Lee, Y-J., and Waxman, S.G. Regulation of Na+ channel β1 and β2 subunit mRNA levels in cultured rat astrocytes. Neurosci. Letts. 234:107-110, 1997. PMID: 9364509

370. Rose, C.R., Ransom, B.R., and Waxman, S.G.: Pharmacological characterization of Na+ influx via voltage-gated Na+ channels in spinal cord astrocytes. J. Neurophysiol., 78:3249-3259, 1997. PMID: 9405543

371. Dib-Hajj, S., D., Ishikawa, I., Cummins, T.R., and Waxman, S.G. Insertion of a SNS-specific tetrapeptide in the S3-S4 linker of D4 accelerates recovery from inactivation of skeletal muscle voltage-gated Na channel µ1 in HEK293 cells. FEBS Letts., 416:11-14, 1997. PMID: 9369222

372. Oh, Y., and Waxman, S.G. Novel splice variants of the voltage-sensitive sodium channel alpha subunit. Neuro Report., 9:1267-1272, 1998. PMID: 9631410

373. Imaizumi, T., Kocsis, J.D., and Waxman, S.G. Resistance to anoxic injury in rat spinal cord following demyelination. Brain Res., 779:292-296, 1998. PMID: 9473700

374. Black, J.A., Dib-Hajj, S., Cohen, S., Hinson, A.W., Waxman, S.G. Glial cells have heart: rH1 Na+ channel mRNA and protein in spinal cord astrocytes. Glia, 23:200-208, 1998. PMID: 9633805

375. Fern, R., Davis, P., Waxman, S.G., Ransom, B. Axon conduction and survival in CNS white matter during energy deprivation: A developmental study. J. Neurophysiol., 79:95-106, 1998. PMID: 9425180

376. Tanaka, M., Cummins, T.R., Ishikawa, K., Dib-Hajj, S.D., Black, J.A., Waxman, S.G. SNS Na+ channel expression increases in dorsal root ganglion neurons in the carrageenan inflammatory pain model. Neuro Report, 9:967-972, 1998. PMID: 9601651

377. Buschmann, T., Martin-Villalba, A., Kocsis, J.D., Waxman, S.G., Herdegen T. Expression of Jun, Fos, and ATF-2 proteins in axotomized explanted and cultured adult rat dorsal root ganglia. Neurosci., 84:163-176, 1998. PMID: 9522371

378. Waxman, S.G. Demyelinating diseases: New pathological insights, new therapeutic targets.

New England Journal of Medicine., 338:323-325, 1998. PMID: 9445415

379. Dib-Hajj, S.D., Tyrrell, L., Black, J.A., Waxman, S.G. NaN, a novel voltage-gated Na channel preferentially expressed in peripheral sensory neurons and down-regulated following axotomy. Proc. Natl. Acad.Sci., 95:8963-8968, 1998. PMID: 9671787

380. Rose, C.R., Waxman, S.G., Ransom, B. R. Effects of glucose deprivation, chemical hypoxia and simulated ischemia on Na+ homeostasis in rat spinal cord astrocytes. J. Neurosci., 18:3554-3563, 1998. PMID: 9570787

381. Diss, J.K.J., Stewart, D., Fraser, S.P., Black, J.A., Dib-Hajj, S., Waxman, S.G., Archer, S.N., Djamgoz, M.B.A. Expression of skeletal muscle type voltage-gated Na+ channels in rat and human prostate cancer cell lines. FEBS Lett., 427:5-10, 1998. PMID: 9613589

1. Dib-Hajj, S.D., Black, J.A., Cummins, T.R., Kenney, A.M., Kocsis, J.D., Waxman, S.G. Rescue of α-SNS sodium channel expression in small dorsal root ganglion neurons after axotomy by nerve growth factor *in vivo*. J. Neurophysiol., 79:2668-2676, 1998. PMID: 9582237

383. Imaizumi, T., Lankford, K.L., Waxman, S.G., Greer, C.A., Kocsis, J.D. Transplanted olfactory ensheathing cells remyelinate and enhance axonal conduction in the demyelinated dorsal columns of the rat spinal cord. J. Neurosci., 18:6176-6185, 1998. PMID: 9698311

384. Waxman S.G., Dib-Hajj S., Cummins T.R., Black J.A. Sodium channels and pain. Proc. Natl. Acad. Sci., 96: 7635-7639, 1999. PMID: 10393872

385. Robert, A., Black, J.A., Waxman, S.G. Endogenous NMDA receptor activation regulates glutamate release in cultured spinal neurons. J. Neurophysiol., 80:196-208, 1998. PMID: 9658041

386. Cummins, T.R., Howe, J.R., Waxman, S.G. Slow closed-state inactivation: a novel mechanism underlying ramp currents in cells expressing the hNE/PN1 sodium channel. J. Neurosci., 18:9606-9619, 1998. PMID: 9822722

387. Ishikawa, K., Tanaka, M., Black, J.A., Waxman, S.G. Changes in expression of voltage-gated potassium channels in dorsal root ganglion neurons following axotomy. Muscle & Nerve, 22:502-507, 1999. PMID: 10204786

388. Fjell, J, Cummins, T.R., Fried, K., Black, J.A., Waxman, S.G. *In vivo* NGF deprivation reduces SNS expression and TTX-R currents in IB4-negative DRG neurons. J. Neurophysiology, 81:803-811, 1999. PMID: 10036280

389. Imaizumi, T., Kocsis, J.D., Waxman, S.G. The role of voltage-gated Ca2+ channels in anoxic injury of spinal cord white matter. Brain Research, 817:84-92, 1999. PMID: 9889329

1. Black, J.A., Fjell, J., Dib-Hajj, S., Duncan, I.D., O’Connor, L.T., Fried, K., Gladwell, Z., Tate, S., Waxman, S.G. Abnormal expression of SNS/PN3 sodium channel in cerebellar Purkinje cells following loss of myelin in the taieprat. NeuroReport, 10: 913-918, 1999. PMID: 10321459
2. Fjell, J., Cummins, T.R., Dib-Hajj, S.D., Fried, K., Black, J.A., and Waxman, S.G. Differential role of GDNF and NGF in the maintenance of two TTX-resistant sodium channels in adult DRG neurons. Molec. Brain Res., 67: 267-282, 1999. PMID: 10216225
3. Waxman, S.G. The molecular pathophysiology of pain: abnormal expression of sodium channel genes and its contributions to hyperexcitability in primary sensory neurons. Pain, 6: S133-S140, 1999. PMID: 10491982
4. Fjell, J., Cummins, T.R., Davis, B.M., Albers, K.M., Fried, K., Waxman, S.G., and Black, J.A. Sodium channel expression in NGF-overexpressing transgenic mice. J. Neurosci. Res., 57: 39-47, 1999. PMID: 10397634
5. Waxman, S.G. and Wood, John N. Sodium channels: from mechanisms to medicines? Brain Research Bulletin, 50: 309-310, 1999. PMID: 10643411
6. Tanaka, M., Cummins, T.R., Ishikawa, K., Black, J.A., Ibata, Y., Waxman, S.G. Molecular and functional remodeling of electrogenic membrane of hypothalamic neurons in response to changes in their input. Proc. Natl. Acad. Sci., 96:1088-1093, 1999. PMID: 9927698
7. Bendahhou, S., Cummins, T.R., Tawil, R., Waxman, S.G., and Ptácek, L.J. Activation and inactivation of the voltage-gated sodium channel: role of segment S5 revealed by a novel hyperkalaemic periodic paralysis mutation. J. Neurosci., 19: 4762-4771, 1999. PMID: 10366610
8. Black, J.A., Cummins, T.R., Plumpton, C., Chen, Y.H., Hormuzdiar, W., Clare, J.J., and Waxman, S.G. Upregulation of a silent sodium channel after peripheral, but not central, nerve injury in DRG neurons. J. Neurophysiol. 82: 2776-2785, 1999. PMID: 10561444
9. Waxman, S.G. The molecular basis for electrogenic computation in the brain: You can't step in the same river twice. Molecular Psychiatry, 4: 222-228, 1999. PMID: 10395211

399. Waxman, S.G. The neuron as a dynamic electrogenic machine: Modulation of sodium channel expression as a basis for functional plasticity in neurons. Phil. Trans. Roy. Soc. Lond. B., 355: 199-213, 2000. PMID: 10724456

400. Waxman, S.G., Cummins, T.R., Sulayman, D.H., Fjell J., Black, J.A. Sodium channels, excitability of primary sensory neurons, and the molecular basis of pain. Muscle and Nerve, 22: 1177-1187, 1999. PMID: 10454712

401. Swanson, R.A., Rose, C.R., Farrell, K., Ransom, B.R., Waxman, S.G. K+-induced reversal of astrocyte glutamate uptake is prevented by compensatory reductions in intracellular Na+. Neuroscience, 93: 285-292, 1999. PMID: 10430492

402. Cummins, T. R., Dib-Hajj, S. D., Black, J. A., Waxman, S.G. Sodium channels and the molecular pathophysiology of pain. Progr. Brain Research, 129: 3-22, 2000. PMID: 11098678

403. Waxman, S.G. Plasticity of channel expression as a substrate for channelopathies. In: Channelopathies of the Nervous System, M. Rose and R.E. Griggs, Eds., Butterworth-Heinemann Publ., pp. 81-102, 2001.

404. Bendahhou, S., Cummins, T.R., Kwiecinski, H., Waxman, S.G, Ptacek, L.J. Characterization of a new sodium channel mutation at Arginine 1448 associated with moderate paramyotonia congenita. J. Physiol. (Lond), 518.2: 337-344, 1999. PMID: 10381583

405. Waxman, S.G., Kocsis, J.D. Experimental approaches to restoration of function of ascending and descending axons in spinal cord injury. In: The Neurobiology of Spinal Cord Injury, R.G. Kalb and S.M. Strittmatter, Eds., Humana Press, pp. 215-240, 2000.

406. Dib-Hajj, S.D., Fjell, J., Cummins, T.R., Zheng, Z., Fried, K., LaMotte, R., Black, J.A., Waxman, S.G. Plasticity of sodium channel expression in DRG neurons in the chronic constriction injury model of neuropathic pain. Pain, 83: 591-600, 1999. PMID: 10568868

407. Dib-Hajj, S.D., Tyrrell, L., Escayg, A., Wood, P.M., Meisler, M. H., Waxman, S.G. Coding sequence, genomic organization and conserved chromosomal localization of mouse gene Scn11a encoding the sodium channel NaN. Genomics*,* 59: 309-318, 1999. PMID: 10444332

408. Waxman, S.G. Multiple sclerosis as a neuronal disease. Arch. Neurol*.,* 57: 22-24, 2000. PMID: 10634428

409. Cummins, T.R., Dib-Hajj, S.D., Black, J.A., Waxman, S.G. Sodium channels as molecular targets in pain. In: Proc. 9th World Congr. on Pain, Progress in Pain Research and Management, Vol. 17, edited by M. Devor, M. Rowbotham, and Z. Wiesenfeld-Hallin, IASP Press, Seattle, p. 77-91, 2000.

410. Waxman, S.G. Molecular mechanisms of subcortical versus cortical infarction. In: Subcortical Stroke, 2nd Edn., G. Donnan, B. Norrving, J. Bamford and J. Bogousslavsky, Eds. Oxford University Press, pp. 67-84, 2002.

411. Cummins, T.R., Dib-Hajj, S.D., Black, J.A., Akopian, A.N., Wood, J.N., Waxman, S.G. A novel persistent tetrodotoxin-resistant sodium current in SNS-null and wild-type small primary sensory neurons. J. Neurosci*.*, 19: RC 43 (1-6), 1999. PMID: 10594087

412. Robert A., Howe, J.R., Waxman, S.G. Development of glutamatergic synaptic activity in cultured spinal neurons. J. Neurophysiol., 83: 659-670, 2000. PMID: 10669482

413. Dib-Hajj, S.D., Tyrrell, L., Cummins, T.R., Black, J.A., Wood, P.M., Waxman, S.G. Two tetrodotoxin-resistant sodium channels in human dorsal root ganglion neurons. FEBS Lett., 462: 117-120, 1999. PMID: 10580103

414. Renganathan, M., Cummins, T.R., Hormuzdiar, W.N., Black, J.A., Waxman, S.G. Nitric oxide is an autocrine regulator of Na+ currents in axotomized C-type DRG neurons. J. Neurophysiol., 83: 2431-2443, 2000. PMID: 10758144

415. Fjell, J., Hjelmstrom, P., Hormuzdiar, W., Milenkovic, M., Aglieco, F., Tyrrell, L., Dib-Hajj, S., Waxman, S.G., Black, J.A. Localization of the tetrodotoxin-resistant sodium channel NaN in nociceptors. Neuro Report, 11: 199-203, 2000. PMID: 10683857

416. Waxman, S.G. Loss and restoration of impulse conduction in disorders of myelin. In: Handbook of Multiple Sclerosis, 3rd Edition, S. D. Cook, ed. Marcel Dekker Publ., pp. 257-289, 2001.

417. Renganathan, M., Cummins, T.R., Hormuzdiar, W.N., Waxman, S.G. αSNS produces the slow TTX-resistant sodium current in large cutaneous afferent DRG neurons. J. Neurophysiol., 84: 710-720, 2000. PMID: 10938298

418. Bendahou, S., Cummins, T.R., Hahn, A.F., Langlois, S., Ptacek, L.J., Waxman, S.G. A double mutation in families with periodic paralysis defines new aspects of sodium channel slow inactivation. J. Clin. Invest., 106: 431-438, 2000. PMID: 10930446

419. Waxman, S.G. Do ‘demyelinating’ diseases involve more than myelin? Nature Medicine, 6: 739-740, 2000. PMID: 10888913

420. Sleeper, A.A., Cummins, T.R., Hormuzdiar, W., Tyrrell, L., Dib-Hajj, S.D., Waxman, S.G, Black, J.A.

Changes in expression of two tetrodotoxin-resistant sodium channels and their currents in dorsal root ganglion neurons following sciatic nerve injury, but not rhizotomy. J. Neurosci., 20: 7279-7289, 2000. PMID: 11007885

421. Waxman, S.G., Dib-Hajj, S., Cummins, T.R., Black, J.A. Sodium channels and their genes: dynamic expression in the normal nervous system, dysregulation in disease states. Brain Research, 886: 5-14, 2000. PMID: 11119683

422. Black, J.A., Dib-Hajj, S., Baker, D., Newcombe, J., Cuzner, M.L., Waxman, S. G. Sensory neuron specific sodium channel SNS is abnormally expressed in the brains of mice with experimental allergic encephalomyelitis and humans with multiple sclerosis. Proc. Natl. Acad. Sci., 97: 11598-11602, 2000. PMID: 11027357

1. Waxman, S.G., Cummins, T.R., Dib-Hajj, S.D., Black, J.A. Voltage-gated sodium channels and the molecular pathogenesis of pain. J. Rehab. Res., 3: 517-529, 2000. PMID: 11322150

424. Everill, B., Cummins, T.R., Waxman, S.G., Kocsis, J.D. Sodium currents of large (A-type) adult cutaneous afferent dorsal root ganglion neurons display rapid recovery from inactivation before and after axotomy. Neuroscience, 106: 161-169, 2001. PMID: 11564426

425. Goldin, A.L., Barchi, R.L., Caldwell, J.H., Hofmann, F., Howe, J.R., Hunter, J.C., Kallen, R.G., Mandel, G., Meisler, M.H., Netter, Y.B., Tamkun, M.M., Waxman, S.G., Wood, J.N., Catterall, W.A. Nomenclature of voltage-gated sodium channels, Neuron, 28: 365-368, 2000. PMID: 11144347

426. Cummins, T.R., Black, J. A., Dib-Hajj, S.D., Waxman, S.G. GDNF up-regulates expression of functional SNS and NaN sodium channels and their currents in axotomized DRG neurons. J. Neurosci., 20: 8754-8761, 2000.

427. Waxman, S.G., Cummins, T.R., Black, J.A., Dib-Hajj, S.D. Diverse functions and dynamic expression of neuronal sodium channels. In: Sodium Channels and Neuronal Hyperexcitability, J. Goode, ed., S.G. Waxman, Chairman, Novartis Foundation, pp. 34-60, 2002. PMID: 11771649

1. Kearney, J.A., Plummer, N.W., Smith, M.R., Kapur, J., Cummins, T.R., Waxman, S.G., Goldin, A.L., Meisler, M.H. A gain-of-function mutation in the sodium channel gene Scn2a results in seizures and behavioral abnormalities. Neuroscience, 102: 307-317, 2001. PMID: 11166117
2. Renganathan, M., Cummins, T.R., Waxman, S.G. Contribution of Nav1.8 sodium channels to action potential electrogenesis in DRG neurons. J. Neurophysiol., 86: 629-640, 2001. PMID: 11495938
3. Ghassemi, F., Dib-Hajj, S.D., Waxman, S.G. Beta1adducin gene expression in DRG is developmentally regulated and is upregulated by glial-derived neurotrophic factor and nerve growth factor. Molec. Brain Res., 90:118-124, 2001. PMID: 11406290
4. Liu, C., Dib-Hajj, S.D., Waxman, S.G. Fibroblast growth factor homologous factor (FHF) 1B binds to the C-terminus of the tetrodotoxin-resistant sodium channel rNAv1.9a (NaN). J. Biol. Chem., 276:18925-18933, 2001. PMID: 11376006
5. Catterall, W.A., Goldin, A.L., Waxman, S.G. International Union of Pharmacology. XXXIX. Compendium of voltage-gated ion channels: sodium channels. Pharmacol Rev., 55: 575-578, 2003. PMID: 14657413
6. Cummins, T.R., Aglieco, F., Renganathan, M., Herzog, R.I., Dib-Hajj, S.D., Waxman, S.G. Nav1.3 sodium channels: rapid repriming and slow closed-state inactivation display quantitative differences following expression in a mammalian cell line and in spinal sensory neurons. J. Neurosci., 21: 5952-5961, 2001. PMID: 11487618

434. Herzog, R.I., Cummins, T.R., Waxman, S.G. Persistent TTX-resistant Na+ current affects resting potential and response to depolarization in simulated spinal sensory neurons. J. Neurophysiol., 86: 1351-1364, 2001. PMID: 11535682

435. Waxman, S.G. Transcriptional channelopathies: an emerging class of disorders. Nature Reviews Neuroscience, 2: 652-659, 2001. PMID: 11533733

436. Sukumaran, M., Waxman, S.G., Wood, J.N., Pachnis V. Flanking regulatory sequences of the locus encoding the murine GDNFreceptor, *c-ret,* directs Lac Z (beta-galactosidase) expression in developing somatosensory system. Developmental Dynamics, 222: 389-403, 2001. PMID: 11747074

437. Black, J.A., Dib-Hajj, S.D., Cummins, T.R., Okuse, K., Baker, M., Wood, J.N., Waxman, S.G. Sodium channels as therapeutic targets in neuropathic pain. In: Neuropathic Pain: Pathophysiology and Treatment, edited by P.T. Hansson, H.L. Fields, R.G. Hill and P. Marchettini, IASP Press, Seattle, pp. 19-36, 2001.

1. Renganathan, M., Cummins, T.R., Waxman, S.G. Nitric oxide blocks fast, slow, and persistent Na+ channels in C-type DRG neurons by S-nitrosylation. J. Neurophysiol., 87: 761-775, 2002. PMID: 11826045
2. Liu, C., Dib-Hajj, S.D., Black, J.A., Greenwood, J., Lian, Z., Waxman, S.G. Direct interaction with contactin targets voltage-gated sodium channel Nav1.9/NaN to the cell membrane. J. Biol. Chem., 276: 46553 - 46562, 2001. PMID: 11581273
3. Black, J.A., Dusart, I., Sotelo, C., Waxman, S.G. Axotomy does not up-regulate expression of sodium channel Nav1.8 in Purkinje cells. Molec. Brain Res., 101: 126-131-2002. PMID: 12007840
4. White, B.H., Cummins, T.R., Wolf, D.H., Waxman, S.G., Russell, D.S., Kaczmarek, L.K. The HSV-1 helper virus 5DL1.2 suppresses sodium currents in amplicon-transduced neurons. J. Neurophysiol., 87: 2149-2157, 2002. PMID: 11929932

442. Black, J.A., Waxman, S.G. Molecular identities of two tetrodotoxin-resistant sodium channels in corneal axons. Exper. Eye Research, 75: 193-199, 2002. PMID: 12137764

443. Liu, C., Devor, M., Waxman, S.G., Kocsis, J.D. Subthreshold oscillations induced by spinal nerve injury in acutely dissociated muscle and cutaneous afferent neurons of mouse DRG. J. Neurophysiol., 87: 2009-2017, 2002. PMID: 11929919

444. Tyrrell, L., Renganathan, M., Dib-Hajj, S.D., Waxman, S.G. Glycosylation alters steady-state inactivation of sodium channel Nav1.9/NaN in DRG neurons and is developmentally regulated. J. Neurosci., 21: 9629-9638, 2001. PMID: 11739573

445. Black, J.A., Renganathan, M., Waxman, S.G. Sodium channel Nav1.6 is expressed along nonmyelinated axons and it contributes to conduction. Molec. Brain Research, 105: 19-28, 2002. PMID: 12399104

446. Dib-Hajj, S., Black, J.A., Cummins, T.R., Waxman, S.G. NaN/Nav1.9: a sodium channel with unique properties. Trends in Neurosciences, 25: 253-259, 2002. PMID: 11972962

447. Leffler, A., Cummins, T. R., Dib-Hajj, S. D., Hormuzdiar, W. N., Black, J. A., Waxman, S. G. Glial-derived

neurotrophic factor and nerve growth factor reverse changes in repriming of TTX-sensitive Na+ currents following axotomy of dorsal root ganglion neurons. J. Neurophysiol., 88: 650-660, 2002. PMID: 12163518

448. Waxman, S.G. Ion channels and neuronal dysfunction in multiple sclerosis. Arch. Neurol., 59: 1377-1380, 2002. PMID: 12223023

449. Renganathan, M., Dib-Hajj, S., Waxman, S.G. Nav1.5 underlies the “third TTX-R sodium current” in rat small DRG neurons. Molec. Brain Research, 106: 70-82, 2002. PMID: 12395089

450. Waxman, S.G. Transcriptional channelopathies of the nervous system. In: Encyclopedia of the Human Genome, 2003.

451. Black, J.A., Cummins, T.R., Dib-Hajj, S.D., Waxman, S.G. Sodium channels and the molecular basis for pain. In: Mechanisms and Mediators of Neuropathic Pain, edited by Annika B. Malberg and Sandra R. Chaplan, Birkhäuser Verlag Basel/Switzerland, 2002, 23-50.

1. Craner, M. J., Klein, J.P., Black, J.A., Waxman, S.G. Preferential expression of IGF-1 in small DRG neurons and down-regulation following injury. Neuroreport, 13: 1649-1652, 2002. PMID: 12352620
2. Dib-Hajj, S.D., Tyrrell, L., Waxman. S.G. Structure of the sodium channel gene SCN11A: evidence for intron-to-exon conversion model and implications for gene evolution. Molecular Neurobiology, 26: 235-251, 2002. PMID: 12428758
3. Waxman, S.G., Bangalore, L. Myelin function and saltatory conduction. In: Neuroglia, edited by B.R. Ransom and H. Kettenmann, Oxford University Press, pp 273-284, 2005.
4. Hains, B.C., Black, J.A., Waxman. S.G. Primary motor neurons fail to upregulate voltage-gated sodium channel Nav1.3/brain type III following axotomy due to spinal cord injury. J. Neurosci. Res., 70: 546-552, 2002. PMID: 12404508
5. Waxman, S.G. Sodium channels as molecular targets in multiple sclerosis. J. Rehabilitation Res.and Dev., 39: 233-242, 2002. PMID: 12051467

457. Klein, J.P., Craner, M.J., Cummins, T.R., Black, J.A., Waxman, S.G. Sodium channel expression in hypothalamic osmosensitive neurons in experimental diabetes. NeuroReport 13: 1481-1485, 2002. PMID: 12167778

458. Fang, X., Djouhri, L., Black, J.A., Dib-Hajj, S.D., Waxman, S.G., Lawson, S.N. The presence and role of the TTX resistant sodium channel Nav1.9 (NaN) in nociceptive primary afferent neurons. J. Neurosci., 22: 7425-7433, 2002. PMID: 12196564

459. Cummins, T.R., Dib-Hajj, S.D., Waxman, S.G., Donnelly, D. Characterization and developmental changes of Na+ currents of petrosal neurons with projections to the carotid body. J. Neurophysiol., 88: 2993-3002, 2002. PMID: 12466424

460. Waxman, S.G., Bangalore, L. Electrophysiological consequences of myelination and demyelination. In: Myelin Biology and Disorders Vol 1, edited by R. Lazzarini, Academic Press, New York, pp, 117-141, 2004.

461. Stys, P.K., Waxman, S.G. Ischemic white matter injury. In: Myelin Biology and Disorders, Vol 2, edited by R. Lazzarini, Academic Press, New York, pp. 985-1008, 2004

462. Saab, C.Y., Cummins, T.R., Dib-Hajj, S.D., Waxman, S.G. Molecular determinant of Nav1.8 sodium channel resistance to the venom from the scorpion Leiurus quinquestriatus hebraeus. Neurosci. Lett., 331: 79-82, 2002. PMID: 12361845

463. Craner, M.J., Klein, J.P., Renganathan, M., Black, J.A., Waxman, S.G. Changes of sodium channel expression in experimental painful diabetic neuropathy. Ann. Neurol., 52: 786-793, 2002. PMID: 12447933

464. Cummins, T.R., Renganathan, M., Stys P.K., Herzog, R.I., Scarfo K., Horn, R., Dib-Hajj, S.D., Waxman, S.G. The pentapeptide QYNAD does not block voltage-gated sodium channels. Neurology, 60: 224-229, 2003. PMID: 12552035

465. Lo, A.C., Black, J.A., Waxman, S.G. Neuroprotection of axons with phenytoin in experimental allergic encephalomyelitis. NeuroReport, 13: 1909-1912, 2002. PMID: 12395089

466. Renganathan, M., Gelderblom M., Black, J.A., Waxman, S.G. Expression of Nav 1.8 sodium channels perturbs the firing patterns of cerebellar Purkinje cells. Brain Research, 959: 235-243, 2003. PMID: 12493611

467. Waxman, S.G. Nitric Oxide and the axonal death cascade. Ann. Neurol., 53: 150-154, 2003. PMID:

12557280

468. Black, J.A., Cummins, T.R., Yoshimura, N., deGroat, W.C., Waxman, S.G. Tetrodotoxin-resistant sodium channels Nav1.8/SNS and Nav1.9/NaN in afferent neurons innervating urinary bladder in control and spinal cord injured rats. Brain Research, 963: 132-138, 2003. PMID: 12560118

469. Liu, C., Dib-Hajj, S.D., Renganathan, M., Cummins, T.R., Waxman, S.G. Modulation of the cardiac sodium channel Nav1.5 by fibroblast growth factor homologous factor 1B. J. Biol. Chem., 278: 1029-1036, 2003. PMID: 12401812

470. Tokuno, H.A., Kocsis, J.D., Waxman, S.G. Non-inactivating, TTX-sensitive Na+ conductance in peripheral axons. Muscle and Nerve, 28: 212-217, 2003. PMID: 12872326

471. Weisman, D., Hisama, F., Waxman, S.G., Blumenfeld, H. Going deep to cut the link: cortical disconnection syndrome caused by a thalamic lesion. Neurology, 60:1865-1866, 2003. PMID: 12796557

472. Rugiero F., Mistry M., Sage D., Black J.A., Waxman S.G., Crest M., Clerc N., Delmas P., Gola M. Selective expression of a persistent TTX-resistant Na+ current and Nav1.9 subunit in myenteric sensory neurons. J.Neurosci., 23: 2715-2725, 2003. PMID: 12684457

473. Craner, M.J., Lo, A.C., Black, J.A., Baker, D., Newcombe, J., Cuzner, M.L., Waxman, S.G. Annexin II/p11 is up-regulated in Purkinje cells in EAE and MS. NeuroReport, 14: 555-558, 2003. PMID: 12657884

474. Baker, M.D., Chandra, S.Y., Ding, Y., Waxman, S.G., Wood, J.N. GTP-induced tetrodotoxin-resistant Na+ current regulates excitability in mouse and rat small diameter sensory neurones. J. Physiol. (Lond.), 548.2: 373-383, 2003. PMID: 12651922

475. Hains, B.C., Black, J.A., Waxman, S.G. Primary cortical motor neurons undergo apoptosis following axotomizing spinal cord injury. J. Comp. Neurol., 462: 328-341, 2003. PMID: 12794736

476. Craner, M.J., Lo, A.C., Black, J.A., Waxman, S.G. Abnormal sodium channel distribution in optic nerve axons in a model of inflammatory demyelination. Brain, 126: 1552-1561, 2003. PMID: 12805113

477. Waxman, S.G. Transcriptional channelopathies of the nervous system: new targets for molecular medicine. In: From Neuroscience to Neurology, edited by S.G. Waxman, Elsevier Academic Press, pp. 319-338, 2005.

478. Wood, J.N. and Waxman, S.G. New molecular targets for the treatment of neuropathic pain, In: From Neuroscience to Neurology, edited by S.G. Waxman, Elsevier Academic Press, pp. 339-355, 2005.

479. Herzog, R.I., Liu, C., Waxman, S.G., Cummins, T.R. Calmodulin binds to the C-terminus of sodium channels Nav1.4 and Nav1.6 and differentially modulates their functional properties. J. Neurosci., 23: 8261-8270, 2003. PMID: 12967988

480. Craner, M.J., Kataoka, Y., Lo, A.C., Black, J.A., Baker, D., Waxman, S. G. Temporal course of upregulation of Nav1.8 in Purkinje neurons parallels the progression of clinical deficit in EAE. J. Neuropath. Exper. Neurol., 62: 968-976, 2003. PMID: 14533785

481. Klein J.P., Waxman, S.G. The brain in diabetes: molecular changes in neurons and their implications for end-organ damage. The Lancet Neurology, 2: 548-554, 2003. PMID: 12941577

482. Herzog, R.I., Cummins, T.R., Ghassemi, F., Dib-Hajj, S.D., Waxman, S.G. Distinct repriming and closed-state inactivation kinetics of Nav1.6 and Nav1.7 sodium channels in spinal sensory neurons. J. Physiol. (Lond.), 551.3: 741-751, 2003. PMID: 12843211

483. Saab, C., Cummins, T.R., Waxman, S.G. GTP gama S increases Nav1.8 current in small diameter dorsal root ganglia neurons. Exper. Brain Research, 152: 415-419, 2003. PMID: 12898089

484. Waxman, S.G. Dysfunction and recovery in demyelinated and dysmyelinated axons, In: Textbook of Neural Repair and Rehabilitation, edited by Seltzer, M.E. et al, Cambridge University Press, 468-486, 2006.

485. Klein, J.P., Tendi, E., Dib-Hajj, S.D., Fields, R.D., Waxman, S.G. Patterned electrical activity modulates sodium channel expression in sensory neurons. J. Neurosci. Res., 74: 192-198, 2003. PMID: 14515348

486. Hains, B.C, Klein, J.P., Saab, C.Y., Craner, M.J., Black, J.A., Waxman, S.G. Upregulation of sodium channel Nav1.3 and functional involvement in neuronal hyperexcitability associated with central neuropathic pain after spinal cord injury. J. Neurosci., 23: 8881-8892, 2003. PMID: 14523090

487. Waxman, S.G. Nav1.3 (pages 19-21), Nav1.8 (pages 28-29), Nav1.9 (page 30) In: The IUPHAR Compendium of Voltage-Gated Ion Channels, W.A. Catterall, K.G. Chandy, and G.A. Gutman, Eds., 2003.

488. Lo, A.C., Saab, C.Y., Black, J.A., Waxman, S.G. Phenytoin protects spinal cord axons and preserves axonal conduction and neurological function in a model of neuroinflammation *in vivo*. J. Neurophysiol., 90: 3566-3572, 2003. PMID: 12904334

489 Black, J.A., Liu, S, Tanaka, M, Cummins, T.R., Waxman, S.G. Changes in the expression of tetrodotoxin-sensitive sodium channels within dorsal root ganglia neurons in inflammatory pain. Pain, 108: 237-247, 2004. PMID: 15030943

490. Waxman, S.G. Cerebellar dysfunction in multiple sclerosis: evidence for an acquired channelopathy, In: Creating Coordination in the Cerebellum, edited by L.M.R. Nijs-de Langen; Elsevier Pub, pp. 353-366, 2005. PMID: 15661203

491. Craner, M.J., Hains, B.C., Lo, A.C., Black, J.A., Waxman, S.G. Co-localization of sodium channel Nav1.6 and the sodium-calcium exchanger at sites of axonal injury in the spinal cord in EAE. Brain, 127: 294-303, 2004. PMID: 14662515

492. Klein, J.P., Hains, B.C., Craner, M.J., Black, J.A., Waxman, S.G. Apoptosis of vasopressinergic hypothalamic neurons in chronic diabetes mellitus. Neurobiology of Disease, 15: 221-228, 2004 PMID: 15006692

493. Klein, J.P., Khera, D.S., Nersesyan, H., Kimchi, E.Y., Waxman, S.G., Blumenfeld, H. Dysregulation of sodium channel expression in cortical neurons in a rodent model of absence epilepsy. Brain Research, 1000: 102-109, 2004. PMID: 15053958

494. Hains, B.C., Saab, C.Y., Klein, J.P., Craner, M.J., Waxman, S.G. Altered sodium channel expression in second-order spinal sensory neurons contributes to pain after peripheral nerve injury. J. Neurosci., 24: 4832-4840, 2004. PMID: 15152043

495. Waxman, S.G. Gifts from the molecular revolution: protection and repair of the injured spinal cord. J. Spinal Cord. Med*.,* 27: 304-311, 2004. PMID: 15484660

496. Shah, B.S., Rush, A.M., Liu, S., Tyrrell, L., Black, J.A., Dib-Hajj, S.D., Waxman, S.G. Contactin associates with sodium channel Nav1.3 in native tissues and increases channel density at the cell surface.

J. Neurosci., 24: 7387-7399, 2004. PMID: 15317864

497. Saab, C., Y., Craner, M.J., Kataoka, Y., Waxman, S.G. Abnormal Purkinje cell activity *in vivo* in experimental allergic encephalomyelitis. Exper. Brain Research, 158:1-8, 2004. PMID: 15118796

498. Hains, B.C., Saab, C.Y., Lo, A.C., Waxman, S.G. Sodium channel blockade with phenytoin protects spinal cord axons, enhances axonal conduction, and improves functional motor recovery after contusion SCI. Experimental Neurology, 188:365-377, 2004. PMID: 15246836

499. Saab, C.Y., Waxman, S.G. Potentiation of sural nerve Aβ action potential after neurogenic inflammation. NeuroReport., 15:1773-1777, 2004. PMID: 15257145

500. Craner, M.J., Newcombe, J., Black, J.A., Hartle, C., Cuzner, M.L., Waxman, S.G. Molecular changes in neurons in MS: altered axonal expression of Nav1.2 and Nav1.6 sodium channels and Na+ /Ca2+ exchanger. Proc. Natl. Acad. Sci*.,* 101: 8168-8173, 2004. PMID: 15148385

501. Waxman, S.G. Painful channelopathies. In: Encyclopedia of Pain, (Schmidt, R.F. and Willis, W.D., editors), Springer-Verlag Publications, 2007.

502. Damarjian, T.G., Craner, M.J., Black, J.A., Waxman, S.G. Upregulation and colocalization of p75 and Nav1.8 in Purkinje neurons in EAE. Neurosci. Lett., 369: 186-190, 2004. PMID: 15464262

503. Craner, M.J., Damarjian, T.G., Liu, S., Hains, B.C., Lo, A.C., Black, J.A., Newcombe, J., Cuzner, M.L., Waxman, S.G. Sodium channels contribute to microglia/macrophage activation and function in EAE and MS. Glia, 49: 220-229, 2005. PMID: 15390090

504. Rush, A.M., Waxman, S.G. PGE2 increases the tetrodotoxin-resistant Nav1.9 sodium current in mouse DRG neurons via G-proteins, Brain Research, 1023: 264-271, 2004. PMID: 15374752

505. Black, J.A., Hains, B.C., Dib-Hajj S.D., Waxman, S.G. Voltage-gated sodium channels and pain associated with nerve injuries and neuropathies. In: Sodium Channels, Pain and Analgesia (K. Cowan & M. Baker, editors), Birkhausen Verlag Publishers, pp. 1-21 (2005).

506. Choi, J.S., Tyrrell, L., Waxman, S.G, Dib-Hajj, S.D. Functional role of the C-terminus of voltage-gated sodium channel Nav1.8. FEBS Lett., 572: 256-260, 2004. PMID: 15304358

507. Waxman, S.G., Craner, M., Black, J. Sodium channel expression along axons in multiple sclerosis and its models. Trends in Pharmacological Sciences, 25: 584-592, 2004. PMID: 15491781

508. Liu, C-J, Dib-Hajj, S.D., Cummins, T.R., Tyrrell, L., Black, J.A., Waxman, S.G. CAP-1A is a novel linker which binds clathrin and the voltage-gated sodium channel Nav1.8. Molec. Cell. Neurosci., 28:636-649, 2005. PMID: 15797711

509. Wittmack, E.K., Rush, A.M., Craner, M.J., Goldfarb, M., Waxman, S.G., Dib-Hajj, S.D. Fibroblast growth factor homologous factor 2B: association with Nav1.6 and selective co-localization at nodes of Ranvier of dorsal root sensory axons. J. Neurosci., 24: 6765-6775, 2004. PMID: 15282281

510. Cummins,T.R., Dib-Hajj, S.D., Waxman, S.G. Electrophysiological properties of mutant Nav1.7 sodium channels in a painful inherited neuropathy. J. Neurosci., 24: 8232-8236, 2004. PMID: 15385606

511. Waxman, S.G. Sodium channel blockers and axonal protection in neuroinflammatory disease. Brain, 128: 5-6, 2005. PMID: 15596795

512. Cummins, T.R., Dib-Hajj, S.D., Herzog, R.I., Waxman, S.G. Nav1.6 channels generate resurgent sodium currents in spinal sensory neurons. FEBS Lett., 579:2166-2170, 2005. PMID: 15811336

513. Waxman, S.G., Dib-Hajj, S. Erythromelalgia: A hereditary pain syndrome enters the molecular era. Ann. Neurol., 57:785-788, 2005. PMID: 15929046

514. Rush, A.M., Craner, M.J., Kageyama, T., Dib-Hajj, S.D., Waxman, S.G., Ranscht, B. Contactin regulates the current density and axonal expression of TTX-R but not TTX-S sodium channels in DRG Neurons, Eur. J. Neurosci*.*, 22:39-49, 2005. PMID: 16029194

515. Rush, A.M., Dib-Hajj, S.D., Waxman, S.G. Electrophysiological properties of two axonal sodium channels, Nav1.2 and Nav1.6, expressed in spinal sensory neurons. J. Physiol., 564.3:803-816, 2005. PMID: 15760941

516. Anderson, D.K., Beattie, M., Blesch, A., Bresnahan, J., Bunge, M., Dietrich, D., Dietz, V., Dobkin, B., Fawcett, J., Fehlings, M., Fischer, I., Grossman, R., Guest, J., Hagg, T., Hall, E.D., Houle, J., Kleitman, N., McDonald, J., Murray, M., Privat, A., Reier, P., Steeves, J., Steward, O., Tetzlaff, W., Tuszynski, M.H., Waxman, S.G., Whittemore, S., Wolpaw, J., Young, W., Zheng, B. Recommended guidelines for studies of human subjects with spinal cord injury. Spinal Cord (2005), 1-6. PMID: 15824756

517. Wang, S., Davis, B.M., Zwick, M., Waxman, S.G., Albers, K.M. Reduced thermal sensitivity and Navl.8 and TRPV1 channel expression in sensory neurons of aged mice. Neurobiology of Aging, 27:895-902, 2006. PMID: 15979214

518. Fang, X., Djouhri, L., McMullan, S., Berry, C., Okuse, K., Waxman, S.G., Lawson, S.N. TrkA is expressed in nociceptive neurons and influences electrophysiological properties via Nav1.8 expression in rapidly conducting nociceptors, J. Neurosci., 25:4868-4878, 2005. PMID: 15888662

519. Sasaki, M, Hains, B.C., Lankford, K.L., Waxman, S.G., Kocsis, J.D. Protection of corticospinal tract neurons following dorsal spinal cord transection and engraftment of olfactory ensheathing cells. Glia, 53: 352-359. 2006. PMID: 16288464

520. Leffler A, Herzog R.I., Dib-Hajj S.D., Waxman S.G. and Cummins T.R.  Pharmacological properties of

neuronal TTX-resistant sodium channels and the role of a critical serine pore residue. Pflugers Arch., 451:454-63, 2006. PMID: 15981012

521. Hisama F.M., Dib-Hajj S.D., Waxman S.G. SCN9A-Related Inherited Erythromelalgia. In Gene Reviews [data base online at GeneTests: Medical Genetics Information Resource, Univ. of Washington, Seattle, 2006]. Available at http://www.genetests.org.

522. Hains, B.C., Waxman, S.G. Neuroprotection by sodium channel blockade with phenytoin in an experimental model of glaucoma. Investigative Ophthalmology & Visual Sciences, 46: 4164-4169, 2005. PMID: 16249495

523. Dib-Hajj, S.D., Rush, A.M., Cummins, T.R., Hisama, F.M., Novella, S., Tyrrell, L., Marshall, L., Waxman, S.G. Gain-of-function mutation in Nav1.7 in familial erythromelalgia induces bursting of sensory neurons. Brain, 128:1847-1854, 2005. PMID: 15958509

524. Wittmack, E.K., Rush, A.M., Hudmon, A, Waxman, S.G., Dib-Hajj, S.D. Voltage-gated sodium channel Nav1.6 is modulated by p38 MAP kinase. J. Neurosci., 25:6621-6630, 2005. PMID: 16014723

525. Hains, B.C., Saab, C.Y., Waxman, S.G. Changes in electrophysiologic properties and sodium channel Nav1.3 expression in thalamic neurons after spinal cord injury. Brain, 128: 2359-2371, 2005. PMID: 16109750

526. Frohman, E.M., Filippi M., Stuve, O, Waxman, S.G., Corboy, J., Phillips, J.T., Luccinetti, C., Wilken J., Karandikar, N., Hemmer, B., Monson, N., DeKeyser, J., Hartung, H., Steinman, L, Oksenberg, J.R., Cree, B.A.C., Hauser, S., Racke, M.K. Characterizing the mechanisms of progression in multiple sclerosis: evidence and new hypotheses for future directions. Arch Neurol., 62: 1345-1356, 2005. PMID: 16157741

1. Waxman, S.G., Dib-Hajj, S.D. Erythermalgia: molecular basis for an inherited pain syndrome,

Trends in Molecular Medicine, 11 (12): 555-562, 2005. PMID: 16278094

528. Catterall, W.A., Goldin, A.L., Waxman, S.G. International Union of Pharmacology. XLVII. Nomenclature and structure-function relationships of voltage-gated sodium channels. Pharmacol. Reviews, 57: 397-410, 2005. PMID: 16382098

529 Sasaki, M., Black, J.A., Lankford, K.L., Tokuno, H.A., Waxman, S.G., Kocsis, J.D. Molecular reconstruction of nodes of Ranvier following remyelination by transplanted olfactory ensheathing cells in the demyelinated spinal cord. J. Neurosci., 26:1803-1812, 2006. PMID: 16467529

530. Hains, B.C., Waxman, S.G. The thalamic amplifier after spinal cord injury: up-regulation of the Nav1.3 sodium channel and autonomous hyperexcitability. In Proceedings of 11th World Congress on Pain. Flor H, Kalso E, and Dostrovsky J.O. IASP Press, Seattle, 2006.

531. Han, C, Rush, A.M., Dib-Hajj, S.D., Li, S., Xu, Z, Wang, Y, Tyrrell, L, Wang, X, Yang, Y, Waxman, S.G. Sporadic onset of erythermalgia: a gain-of-function mutation in Nav1.7. Annals of Neurology, 59:553-558, 2006. PMID: 16392115

532. Waxman. S.G., Hains, B.C. Fire and phantoms after spinal cord injury: sodium channels and central pain. Trends in Neurosciences, 29: 207-215, 2006. PMID: 16494954

533. Black, J.A., Waxman, S.G., Smith, K.J. Remyelination of dorsal column axons by endogenous Schwann cells restores the normal pattern of Nav1.6 and Kvl.2 at nodes of Ranvier. Brain, 129: 1319-1329, 2006. PMID: 16537565

534. Hains, B.C., Saab, C.Y., Waxman, S.G. Alterations in burst firing of thalamic VPL neurons and reversal by Nav1.3 antisense following spinal cord injury. J. Neurophysiol., 95: 3343-3352, 2006. PMID: 16481457

535. Lampert, A., Hains, B.C., Waxman, S.G. Upregulation of persistent and ramp sodium current in dorsal horn neurons after spinal cord injury. Exper. Brain Res., 174: 660-666, 2006. PMID: 16718433

536. Kocsis, J., Waxman, S.G. Neurophysiology of demyelination In: Multiple Sclerosis, Raine, C.F., McFarland, H.F., Hohlfeld, R., (Eds) Elsevevier, pp178-191, 2008.

537. Rush, A.M., Wittmack, E.K., Tyrrell, L., Black, J.A., Dib-Hajj, S.D., Waxman, S.G. Differential modulation of sodium channel Nav1.6 by two members of fibroblast growth factor homologous factor 2 subfamily Eur. J. Neurosci., 23: 2551-2562, 2006. PMID: 16817858

538. Waxman, S.G. Ions, energy, and axonal injury: Toward a molecular neurology of multiple sclerosis. Trends in Molecular Med., 12: 192-195, 2006. PMID: 16574486

539. Hains, B.C., Waxman, S.G. Activated microglia contribute to the maintenance of chronic pain following spinal cord injury. J. Neurosci., 26: 4308-4317, 2006. PMID: 16624951

540. Choi, J.S., Hudmon, A., Waxman, S.G., Dib-Hajj, S.D. Calmodulin regulates current density and frequency-dependent inhibition of sodium channel Nav1.8 in DRG neurons. J. Neurophysiol., 96: 97-108, 2006. PMID: 16598065

541. Waxman, S.G. Axonal conduction and injury in multiple sclerosis: the role of sodium channels.

Nature Rev. Neurosci., 5: 932-942, 2006. PMID: 17115075

542. Fang X, Djouhri L, McMullan S, Berry C, Okuse K, Waxman S.G, Lawson S.N. Intense Isolectin-B4 binding in rat dorsal root ganglion neurons distinguishes C-fiber nociceptors with broad action potentials and high Nav1.9 expression. J. Neurosci., 26: 7281-7292, 2006. PMID: 16822986

543. Waxman, S.G. A channel sets the gain on pain. Nature, 444: 831-832, 2006. PMID: 17167466

544. Choi, J., Dib-Hajj, S.D., Waxman, S.G. Inherited erythermalgia: Limb pain from an S4 charge-neutral Na channelopathy. Neurology, 67:1563-1568, 2006. PMID: 16988069

545. Rush, A.M., Dib-Hajj, S.D., Liu, S., Cummins, T.R, Black, J.A., Waxman, S.G. A single sodium channel mutation produces hyper-or hypoexcitability in different types of neurons. Proc. Nat. Acad. Sci., 103: 8245-8250, 2006. PMID: 16702558

546. Black, J.A., Liu, S., Hains, B.C., Saab, C.Y., Waxman, S.G. Long-term protection of central axons with phenytoin in monophasic and chronic-relapsing EAE. Brain, 129:3196-3208, 2006. PMID: 16931536

547. Zhao, P., Waxman, S.G., Hains, B.C. Sodium channel expression in the ventral posterolateral nucleus of the thalamus after peripheral nerve injury. Molec. Pain, 2:27, 2006. PMID: 16916452

548. Woolfe, F, Waxman, S.G., Hains, B.C. In silico modeling of axonal reconnection within a discrete fiber tract after spinal cord injury. J. Neurotrauma, 24:421-432, 2007. PMID: 17376004

549. Lampert, A., Dib-Hajj, S.D., Tyrell, L., Waxman, S.G. Size matters: erythromelalgia mutation S241T in Nav1.7 alters channel gating. J. Biol. Chem., 281:36029-36036, 2006. PMID: 17008310

550. Novella, S.N., Hisama, F.M., Dib-Hajj, S.D., Waxman, S.G. A case of inherited erythromelalgia. Nature Clin. Practice Neurology, 4: 229-235, 2007. PMID: 17410110

551. Harty, T.P., Dib-Hajj, S.D., Tyrrell, L, Blackman, R., Hisama, F.M., Rose, J.B., Waxman, S.G. Nav1.7 mutant A863P in erythromelalgia: effects of altered activation and steady-state inactivation on excitability of nociceptive DRG neurons. J. Neurosci, 26: 12566-12575, 2006. PMID: 17135418

552. Waxman, S.G. Channel, neuronal and clinical function in sodium channelopathies: From genotype to phenotype. Nature Neuroscience, 10:405-410, 2007. PMID: 17387329

553. Choi, J., Dib-Hajj, S.D., Waxman, S.G. Differential slow inactivation and use-dependent inhibition of Nav1.8 channels contribute to distinct firing properties in IB4+ and IB4- DRG neurons. J. Neurophysiol., 97: 1258-1265, 2007. PMID: 17108087

554. Dib-Hajj, S.D., Rush, A.M., Cummins, T.R., Waxman, S.G. Mutations of the Nav1.7 sodium channel underlie inherited erythromelalgia. Drug Discovery Today/Disease Mechanisms, 3: 343-350, 2006.

555. Rush, A.M., Cummins, T.R., Waxman, S.G. Multiple sodium channels and their roles in electrogenesis within dorsal root ganglion neurons. J. Physiol., 579:1-14, 2007. PMID: 17158175

556. Han, C, Lampert A, Rush A.M., Dib-Hajj, S, Wang, X, Yang, Y, Waxman, S.G. Temperature dependence of erythromelalgia mutation L858F in sodium channel Nav1.7. Molec. Pain, 3.3: 1-10, 2007. PMID: 17239250

557. Waxman, S.G. Nav1.7, its mutations, and the syndromes that they cause, Neurology, 69:505-507, 2007. PMID: 17679668

558. Zhao, P., Waxman, S.G., Hains, B.C. ERK-regulated microglia-neuron signaling by PGE2 underlies pain following spinal cord injury. J. Neurosci., 27: 2357-2368, 2007. PMID: 17329433

559. Sheets, P.L., Jackson, J.O., Waxman, S.G., Dib-Hajj, S., Cummins, T.R. A Nav1.7 channel mutation associated with hereditary erythromelalgia contributes to neuronal hyperexcitability and displays reduced lidocaine sensitivity. J. Physiol., 581: 1019-1031, 2007. PMID: 17430993

560. Carrithers M.D., Dib-Hajj, S., Carrithers L., Tokmoulina, G., Pypaert M., Jonas, E.A., Waxman, S.G. Expression of the voltage-gated sodium channel Nav1.5 in the macrophage late endosome regulates endosomal acidification. J. Immunol., 178: 7822-7832, 2007. PMID: 17548620

1. Black, J.A., Liu, S., Carrithers, M., Carrithers, L.M., Waxman, S.G. Exacerbation of EAE after withdrawal of phenytoin and carbamazepine. Ann. Neurol., 62: 21-33, 2007. PMID: 17654737
2. Waxman, S.G. and Black, J.A. Retinal involvement in multiple sclerosis. Neurology, 69: 1562-1563,

2007. PMID: 17938366

563. Harty, T.P., and Waxman, S.G. Inactivation properties of sodium channel Nav1.8 maintain action potential amplitude in small DRG neurons in the context of depolarization. Molec. Pain, 3: 12, 2007. PMID: 17540018

564. Black, J.A., Newcombe, J., Trapp, B.D., Waxman, S.G. Sodium channel expression within chronic MS plaques. J. Neuropath. Exper. Neurol. 66: 828-838, 2007. PMID: 17805013

565. Kocsis J.D., Waxman, S.G. Schwann cells and their precursors for repair of central nervous system myelin, Brain, 130: 1978-1980, 2007. PMID: 17626033

566. Cummins, T.R., Sheets, P.L., Waxman, S.G. The roles of sodium channels in nociception: implications for mechanisms of pain. Pain, 131:243-257, 2007. PMID: 17766042

567. Dib-Hajj, S.D., Cummins, T.R., Black, J.A., Waxman, S.G. From genes to pain: Nav1.7. and human pain disorders. TINS (Trends in Neurosci), 30: 555-564, 2007. PMID: 17950472

568. Abuzetun, J., Hazin, R., Khan, F., Fischer, T.Z., Waxman, S.G. Erythromelalgia. Medlink Neurology, 2008.

569. Drenth, J, Waxman, S.G. Mutations in sodium channel gene SCN9A cause a spectrum of human genetic pain disorders. J. Clin. Invest., 177: 3603-3609, 2007. PMID: 18060017

570. Zhao, P., Waxman, S.G., Hains, B.C. Modulation of thalamic nociceptive processing after SCI through remote activation of thalamic microglia by cysteine-cysteine chemokine ligand 21 (CCL21). J. Neurosci., 27:8893-8902, 2007. PMID: 17699671

571. Blumenfeld, H., Klein, J.P., Schridde, U., Vestal, M., Rice, T., Khera, D.S., Bashyal, C., Giblin, K., Paul-Laughinghouse, C., Wang, F., Phadke, A., Mission, J., Agarwal, R.K., Englot, D.J., Motelow, J., Nersesyan, H., Waxman, S.G., Levin, A.R. Early treatment suppresses the development of spike-wave epilepsy in a rat model. Epilepsia, 49:400-410, 2008. PMID: 18070091

572. Ping Lin, Z., Zhu, Y., Johnson, D.R., Rice, K.P., Nottoli, T., Hains, B.C., McGrath, J., Waxman, S.G., Sartorelli, A.C. Disruption of cAMP and PGE2 transport by Mrp4 deficiency alters cAMP-mediated signaling and nociceptive response. Molec. Pharmacology, 73:243-251,2008. PMID: 17959714

573. Bangalore, L., Black, J.A., Carrithers, M.D., Waxman, S.G. Sodium channel expression and function in multiple sclerosis. In: J. Kesselring, G. Comi & A. Thompson (Eds.), Multiple Sclerosis Recovery of Function and Neurorehabilitation, Cambridge University Press, to be published October 2010.

574. Shaw, S.K., Owolabi, S.A., Bagley, J., Morin, N., Cheng, E., LeBlanc, B.W., Kim, M., Harty, P., Waxman, S.G., Saab, C.Y. Activated polymorphonuclear cells promote injury and excitability of dorsal root ganglia neurons. Experimental Neurology, 210:286-294, 2008. PMID: 18201702

575. Hains, B.C., Waxman, S.G. Sodium channel expression and the molecular pathology of pain after SCI. J. Weber & A.I. Maas (Eds), Progress in Brain Research, (Neurotrauma: New Insights into Pathology and Treatment) 161: 195-204, 2007. PMID: 17618978

576. Cheng, X., Dib-Hajj, S.D., Tyrrell, L., Waxman, S.G. Mutation I136V alters electrophysiological properties of the Nav1.7 channel in a family with onset of erythromelalgia in the second decade. Molecular Pain, 4:1 (1-9), 2008. PMID: 18171466

577. Waxman, S.G. Sodium channels and neuroprotection in MS: current status. Nature Clinical Neurology, 4:159-170, 2008. PMID: 18227822

578. Waxman, S.G., Estacion, M. Nav1.9, G-proteins, and nociceptors, J Physiol, 586:917-918, 2008. PMID: 18287383

579. Hudmon, A, Choi, JS, Tyrrell, L, Black, JA, Rush, AM, Waxman S.G., Dib-Hajj, SD. Phosphorylation of

Sodium channel Nav1.8 by p38 mitogen-activated protein kinase increases current density in dorsal root

ganglion neurons. J Neurosci, 28(12):3190-3201, 2008. PMID: 18354022

580. Zhao, P., Barr, T, Hou, Q, Dib-Hajj, S.D., Black, J.A., Albrecht, P.J., Petersen, K., Eisenberg, E., Wymer,

J.P., Rice, F.L., Waxman, S.G. Voltage-gated sodium channel expression in rat and human epidermal

Keratinocytes: evidence for a role in pain. Pain, 139: 90-106, 2008. PMID: 18442883

581. Waxman, S.G. Axonal dysfunction in chronic MS: meltdown in the membrane. Ann Neurol, 63:411-413,

2008. PMID: 18350590

582. Deumens, R., Joosten, E.A.J, Waxman, S.G., Hains, B.C. Locomotor dysfunction and pain: the Scylla

and Charybdis of fiber sprouting after spinal cord injury. Molec Neurobiology, 37:56-63, 2008. PMID:

18415034

583. Black, J.A., Waxman, S.G. Phenytoin protects central axons in experimental autoimmune encephalomyelitis. J Neurol Sci, 274: 57-63, 2008. PMID: 18485368

584. Saab, C., Waxman, S.G., Hains, B.C. Alarm or curse? The pain of neuroinflammation. Brain Research Reviews, 58: 226-235, 2008. PMID: 18486228

585. Blumenfeld, H., Lampert, A., Klein, J.P., Mission, J., Chen, M.C., Rivera, M., Dib-Hajj, S., Brennan, A.R., Hains, B.C., Waxman, S.G., Role of hippocampal sodium channel Nav1.6 in kindling epileptogenesis. Epilepsia, 50(1): 44-55, 2009. PMID: 18637833

586. Lampert A, O’Reilly A.O., Dib-Hajj S.D., Tyrrell L., Wallace B.A., Waxman, S.G. A pore-blocking hydrophobic motif at the cytoplasmic aperature of the closed-state Nav1.7 channel is disrupted by the erythromelalgia-associated F1449V mutation. J Biol Chem, 283: 24117-24128, 2008. PMID: 18550534

587. Dib-Hajj, S.D., Estacion, M., Jarecki, B.W., Tyrrell, T., Fischer, T., Lawden, M., Cummins, T.R., and Waxman, S.G. Paroxysmal extreme pain disorder M1627K mutation in human Nav1.7 renders DRG neurons hyperexcitable. Molec. Pain, 4:37, 2008. PMID: 18803825.

588. Black, J.A., Nikolajsen, L., Kroner, K., Jensen, T.S., and Waxman, S.G.,   Multiple sodium channel isoforms and MAP kinases are present in painful human neuromas.  Annals of Neurology, 64(6): 644-53, 2008. PMID: 19107992.

589. Tan, A.M., Stamboulian, S., Chang, Y-W.,  Zhao, P., Hains, A.B.,  Waxman, S.G., and Hains, B.C.  Neuropathic pain memory is maintained by RAC1-regulated dendritic spine remodeling after spinal cord injury.  J. Neurosci., 28(49):13173-13183, 2008. PMID: 19052208

590. Estacion, M., Dib-Hajj, S.D., Benke, P.J., te Morsche, R.H.M., Eastman, E.M., Macala, L.J., Drenth, J.P.H., and Waxman, S.G.  NaV1.7 gain-of-function mutations as a continuum:  A1632E displays physiological changes associated with erythromelalgia and paroxysmal extreme pain disorder mutations and produces symptoms of both disorders.  J. Neurosci., 28(43): 11079-11088, 2008. PMID: 18945915

591. Black J.A., Liu S., Waxman S.G. Sodium channel activity modulates multiple functions in microglia. Glia, 57:1072-1082, 2009. PMID: 19115387

592. Cummins, T.R. and Waxman, S.G. Sodium channels in Pain Pharmacology. In Beaulieu, P., Lussier, D., Porreca, F., and Dickenson, A.H. (eds). Pharmacology of Pain, Seattle: IASP Press, 2010.

593. Choi, J-S., Zhang, L., Dib-Hajj, S.D., Han, C.Y., Tyrrell, L, Lin, Z., Wang, X., Yang, Y., and Waxman, S.G.   Mexiletine-responsive erythromelalgia due to a new Nav1.7 mutation showing use-dependent current fall-off.  Experimental Neurology, 16(2):383-9, 2009. PMID: 19162012

594 Fischer, T.Z., Gilmore, E.S., Estacion, M., Eastman, E., Taylor, S, Melanson, M, Dib-Hajj, S, Waxman, S.G. A novel Nav1.7 mutation producing carbamazepine-responsive erythromelalgia. Ann. Neurol., 65:733- 741, 2009. PMID: 19557861

595. Tan, A.M., Zhao, P., Waxman, S.G., Hains, B.C. Early microglial inhibition preemptively mitigates chronic pain development after experimental spinal cord injury. J Rehab Res and Dev, 46:123-133, 2009. PMID: 19533525

596. Dib-Hajj, S.D., Yang, Y., Waxman, S.G. Genetics and molecular pathophysiology of Nav1.7-related pain syndromes. Adv. Genet., 63:85-110, 2008. PMID: 19185186

597. Carrithers, M.D., Chatterjee, G., Carrithers, L.M., Offoha, R., Iheagwara, U., Rahner, C., Graham, M., and Waxman, S.G. Regulation of podosome formation in macrophages by a novel splice variant of the sodium channel SCN8A. J. Biol. Chem., 284(12):8114-26, 2009. PMID: 19136557

1. Fischer, T.Z, Tan, A.M., Waxman, S.G. Thalamic neuron hyperexcitability and enlarged receptive fields

in the STZ model of diabetic pain. Brain Res, 1268:154-61, 2009. PMID: 19285053

599. Dib-Hajj, S.D., Choi, J.S., Macala, L.J., Tyrell, L., Black, J.A., Cummins, T.R., Waxman, S.G.  Transfection of rat or mouse neurons by biolistics or electroporation, Nature Protocols, 4(8):1118-26, 2009. PMID: 19617884

600. Cummins, T.R., Rush, A.M., Estacion, M., Dib-Hajj S.D., and Waxman, S.G.  Voltage-clamp and current-clamp recording from mammalian DRG Neurons, Nature Protocols, 4(8):1103-12, 2009. PMID: 19617882

601. Fischer, T.Z. and Waxman, S.G. Familial pain syndromes from mutations of the NaV1.7 sodium channel. Ann NY Acad Sci The Year in Neurology, 1184:196-207, 2010. PMID: 20146699

602. Sharkey, L., Cheng, X., Drews, V., Buchner, B., Jones, J., Justice, M., Waxman, S.G., Dib-Hajj, S.D., Meisler, M. The ataxia3 mutation in the N-terminal cytoplasmic domain of sodium channel Nav1.6 disrupts intracellular trafficking. J. Neurosci, 29(9):2733-41, 2009. PMID 19261867

603. Chang, Y-W, Tan, A.M., Saab, C.Y., Waxman, S.G. Unilateral focal burn injury is followed by long-lasting

bilateral allodynia and neuronal hyperexcitability in spinal cord dorsal horn. J. Pain, 11(2):119-30, 2010. PMID: 19744891

604. Han, C., Dib-Hajj, S.D., Lin, Z., Li, Y., Eastman, E.M., Tyrrell, L, Cao, X., Yang, Y., Waxman, S.G. Early-and late-onset inherited erythromelalgia: genotype-phenotype correlation. Brain, 132:1711-1723, 2009. PMID 19369487

1. Laezza, F., Lampert, A., Kozel, M.A., Gerber, B.R., Rush, A.M., Nerbonne, J.M., Waxman, S.G., Dib-Hajj,

S.D., Ornitz, D.M., 2009. FGF14N-Terminal splice variants differentially modulate Nav1.2 and Nav1.6 sodium channels. Molec. Cell Neurosci., 42(2):90-101, 2009. PMID: 19465131

1. Tan, A.M., Choi, J-S., Waxman, S.G., and Hains, B.C. Dendritic spine remodeling after spinal cord injury

alters neuronal signal processing. J. Neurophysiol., 102:2396-409, 2009. PMID: 19692517

1. Lampert A., Dib-Hajj S.D., Eastman, E.M., Tyrell, L., Lin, Z., Yang, Y., Waxman, S.G. Erythromelalgia

mutation L823R shifts activation and inactivation of threshold sodium channel Nav1.7 to hyperpolarized

potentials. Biochem Biophys Res Commun, 390: 319-324, 2009. PMID: 19800314

608. Stamboulian, S., Choi, J-S., Ahn, H.S., Chang, Y.W., Tyrrell, L., Black, J., Waxman, S.G., Dib-Hajj, S. ERK1/2 mitogen-activated protein kinase phosphorylates sodium channel Na(v)1.7 and alters its gating properties. J. Neurosci., 30(5):1637-1647, 2010. PMID: 20130174

609. Fischer, T., and Waxman, S.G. Neuropathic pain in diabetes: evidence for a central mechanism. Nature Rev. Neurology, 6(8):462-466, 2010. PMID: 20625378

610. Black, J., Newcombe, J., Waxman, S.G. Astrocytes within multiple sclerosis lesions upregulate

sodium channel Nav1.5. Brain, 133: 835 – 846, 2010. PMID: 20147455

611. Estacion, M., Harty, T.P., Choi, J.S., Tyrrell, L., Dib-Hajj, S.D., Waxman, S.G. A sodium channel gene SCN9A polymorphism that increases nociceptor excitability. Ann. Neurol., 66(6): 862-6, 2009. PMID: 20033988

612. Dib-Hajj, S.D., Cummins, T.R., Black, J.A., Waxman, S.G. Sodium channels in normal and pathological pain. Ann. Rev. Neurosci., 33:325-47, 2010. PMID: 20367448

613. Estacion, M., Choi, J.S., Eastman, E. Lin, Z., Li, Y., Tyrrell, L., Yang, Y., Dib-Hajj, S., Waxman, S.G. Can robots patch-clamp as well as humans? Characterization of a novel sodium channel mutation. J. Physiol., 588(Pt11):1915-1927, 2010. PMID: 20123784

614. Chang, Y.W., Waxman, S.G. Minocycline attenuates mechanical allodynia and central sensitization following peripheral second-degree burn injury. J. Pain, 11(11), 1146-1154, 2010. PMID: 20418178

615. Ahn, H-S, Dib-Hajj, S., Cox, J.J., Tyrrell, L., Elmslie, F.V., Clarke, A.A., Drenth, J.P.H., Woods, C.G., Waxman, S.G. A new Nav1.7 sodium channel mutation I234T in a child with severe pain. Eur. J. Pain, 14(9):944-950. 2010. PMID: 20385509.

616. Cheng, X., Dib-Hajj, S.D., Tyrrell, L., Wright, D.A., Fischer, T.Z., and Waxman, S.G. Mutations at opposite ends of the DIII/S4-S5 linker of sodium channel Nav1.7 produce distinct pain disorders. Molec. Pain, 6:24, 2010. PMID: 20429905

617. Kullmann, D.M., and Waxman, S.G. Neurological channelopathies: new insights into disease mechanisms and ion channel function. J. Physiol, 588:1823-1827, 2010. PMID: 20375141

618. Estacion, M., Waxman, S.G., Dib-Hajj. S.D. Effects of ranolazine on wild-type and mutant NaV1.7 channels and on DRG neuron excitability. Molec. Pain, 6:35, 2010. PMID: 20529343

619. Choi, J.S., Cheng, X., Foster, E., Leffler, A., Tyrrell, L., Te Morsche, R.H., Eastman, E.M., Jansen, H.J., Huehne, K., Nau, C., Dib-Hajj, S.D., Drenth, J.P., Waxman, S.G. Alternative splicing may contribute to time-dependent manifestation of inherited erythromelalgia. Brain, 133:1823-1835, 2010. PMID: 20478850

620. Estacion, M., Gasser, A., Dib-Hajj, S.D., and Waxman, S.G. A sodium channel mutation linked to epilepsy increases ramp and persistent current of NaV1.3 and induces hyperexcitability in hippocampal neurons. Exper. Neurol., 224:362-368, 2010. PMID: 20420834

621. Choi, J-S, Boralevi, F., Brissaud, O., Sanchez-Martin, J., te Morsche, R.H.M., Dib-Hajj, S.D., Drenth, J.P.H., Waxman, S.G. Paroxysmal Extreme Pain Disorder: A molecular lesion of peripheral neurons. Nature Reviews Neurology 7(1):51-5, 2011. PMID: 21079636

622. Nikolajsen, L., Black, J.A., Kroner, K., Jensen, T.S., Waxman, S.G. Neuroma removal for neuropathic pain: efficacy and predictive value of lidocaine infusion. Clin. J. Pain, 26(9) 788-793, 2010. PMID: 20973154

623. Waxman, S.G. Channelopathic pain: a growing but still small list of model disorders. Neuron, 66, 622-624, 2010. PMID: 20547120

624. Gasser, A., Cheng, X., Gilmore, E.S., Tyrrell, L., Waxman, S.G., and Dib-Hajj, S.D. Two Nedd4-binding motifs underlie modulation of sodium channel Nav1.6 by p38 MAPK. J. Biol. Chem., 285(34):26149-61, 2010. PMID: 20530479

625. Waxman, S.G. Polymorphisms in ion channel genes: emerging roles in pain. Brain, 133: 2514-2518. 2010. PMID: 20802201

626. Freilich, E.R., Jones, J.M., Gaillard, W.D., Conry, J.A., Tsuchida, T.N., Reyes, C., Dib-Hajj, S.D., Waxman, S.G., Meisler, M.H., and Pearl, P.L. Novel SCN1A Mutation in a Patient with Malignant Migrating Partial   
Seizures of Infancy. Arch. Neurol., 68(5):665-71, 2011. PMID: 21555645

627. Gurkiewicz,M., Korngreen,A., Waxman, S.G., Lampert, A.  Kinetic modeling of Nav1.7 provides mechanistic insight into erythromelalgia-associated F1449V mutation.  J. Neurophysiol., 105(4):1546-57. 2011. PMID: 21289137

628. Wilkins, A., Kondo, Y., Song, J., Liu, S., Compston, A., Black, J.A., Waxman, S.G., and Duncan, I.D.  Slowly progressive axonal degeneration in a rat model of chronic, non-immune mediated demyelination.  J. Neuropath. Exper. Neurol., 69(12):1256-1269, 2010. PMID: 21107138

629. Dib-Hajj, S.D., Waxman, S.G. Isoform-specific and pan-channel partners regulate trafficking and plasma membrane stability; and alter sodium channel gating properties. Neurosci. Lett., 486(2):84-91, ePub Sep 17, 2010. PMID: 20817075

630. Persson, A-K., Black, J.A., Gasser, A., Fischer, T., and Waxman, S.G. Sodium-calcium exchanger and multiple sodium channel isoforms in intra-epidermal nerve terminals. Molec. Pain, 6:84, 2010. PMID: 21118538

631. Honmou, O., Houkin, K., Matsunaga, T., Niitsu, Y., Ishiai, S., Onodera, R., Waxman, S.G., and Kocsis, J.D. Intravenous administration of auto serum-expanded autologous mesenchymal stem cells derived from bone marrow into stroke patients. Brain, 134: 1790-2807, 2011. PMID: 21493695

632. Tan, A.M. and Waxman, S.G. Spinal cord injury, dendritic spine remodeling, and spinal memory mechanisms. Exper. Neurol., 235: 142-51, 2012. PMID: 21925174

633. Shields, S. and Waxman, S.G. Cerebellar dysfunction in multiple sclerosis: In the blink of an eye. Multiple Sclerosis Journal, 17(10): 1152-1154, 2011. PMID: 21980147

634. Ahn, H.S., Black, J.A., Zhao, P., Tyrrell, L., Waxman, S.G., and Dib-Hajj, S.D. Nav1.7 is the predominant sodium channel in rodent olfactory sensory neurons. Molec. Pain, 7:32, open access 2011. PMID: 20385509

635. Cheng, X., Dib-Hajj, S.D., Tyrrell, L, te Morsche, R.H., Drenth, J.P.H., and Waxman, S.G. Deletion mutation of sodium channel NaV1.7 in inherited erythromelalgia: Enhanced slow-inactivation modulates dorsal root ganglion neuron hyperexcitability. Brain, 134(Pt. 7):1972-86, 2011. PMID: 21705421

636. Waxman, S.G., Channelopathies have many faces. Nature, 472: 173-174, 2011. PMID: 21490662

637. Persson, A-K., Gasser, A.; Black, J.A., and Waxman, S.G. NaV1.7 accumulates and co-localizes with phosphorylated ERK1/2 within transected axons in early experimental neuromas. Exper. Neurol., 230(2): 273-9, 2011. PMID: 21601570

638. Faber, C.G., Hoeijmakers, J.G.J., Ahn, H.S., Cheng, X, Han, C., Choi, J.S., Estacion, M., Lauria, G., Vanhoutte, E.K., Gerrits, M.M., Dib-Hajj, S., Drenth, J.P.H., Waxman, S.G., and Merkies, I.S.J. Gain-of-function NaV1.7 mutations in idiopathic small fiber neuropathy. Ann. of Neurol., 71(1):26-39, 2012. PMID: 21698661

639. Black, J.A. and Waxman, S.G. Sodium channels and microglial function. Exper. Neurol., 234(2): 302-315, 2011. PMID: 21985863

640. Tan, A.M., Cheng, Y-W, Zhao, P, Hains, B.C., and Waxman, S.G. RAC1-regulated dendritic spine remodeling contributes to neuropathic pain after peripheral nerve injury. Exper. Neurol., 232(2): 222-33, 2011. PMID: 21963650

641. Choi, J.S. and Waxman, S.G. Physiological interactions between Nav1.7 and Nav1.8 sodium channels: A computer simulation study. J. Neurophysiol., 106: 3173-3184, 2011. PMID: 21940606

642. Fischer, T.Z. and Waxman, S.G. Extraterritorial temperature pain threshold abnormality in subjects with a healed thermal injury. J. Rehab. Res. Dev., 49(4): 515-22, 2012. PMID: 22773255

643. Han, C., Hoeijmakers, J.G.J., Ahn, H-S., Zhao, P., Shah, P., Lauria, G., Gerrits, M.M., te Morsche, R.H.M., Dib-Hajj, S.D., Drenth, J.P.H., Faber, C.G., Merkies, I.S.J., and Waxman, S.G. NaV1.7-related small fiber neuropathy: Impaired slow-inactivation and DRG neuron hyperexcitability. Neurology, 78: 1635-1643, 2012. PMID: 22539570

644. Shields, S.D., Cheng, X., Gasser, A., Saab, C.Y., Tyrrell, L, Eastman, E.M., Iwata, M., Zwinger, P.J., Black, J.A., Dib-Hajj, S.D., and Waxman, S.G. A channelopathy contributes to cerebellar dysfunction in a model of multiple sclerosis. Ann. Neurol., 71(2): 186-94, 2012. PMID: 22367990

645. Hoeijmakers, J.G.J., Han, C., Merkies, I.S.J., Macala, L., Lauria, G., Gerrits, M.M., Dib-Hajj, S., Faber, C.G., Waxman, S.G. Small nerve fibers, small hands and small feet: A new syndrome of pain, dystautonomia and acromesomelia in a kindred with a novel NaV1.7 mutation. Brain, 135: 345-258, 2012. PMID: 22286749

646. Estacion, M., Han, C., Choi, JS., Hoeijmakers, J.G.J., Lauria, G., Drenth, J.P.H., Gerrits, M.M., Dib-Hajj, S., Faber, C.G., Merkies, I.S.J., Waxman, S.G. Intra- and interfamily phenotypic diversity in pain syndromes associated with a gain-of-function variant of NaV1.7. Molec. Pain, 7:92, 2011. PMID: 22136189

647. Baker, M.D., and Waxman, S.G. Sodium channel slow-inactivation and adaptation in C-fibres. J. Physiol., 590(pt 7): 1513-4, 2012. PMID: 22467918

648. Gasser, A., Ho, T.S., Cheng, X., Chang, K-J, Waxman, S.G., Rasband, M.N., and Dib-Hajj, S. An ankyrinG-binding motif is necessary and sufficient for targeting Nav1.6 Na+ channels to axon initial segments and nodes of Ranvier. J. Neurosci., 32(21): 7232-7243, 2012. PMID: 22623668

649. Lauria, G., Merkies, I.S.J., Waxman, S.G., and Faber, C.G. (2012 in press) Epidermal Nerve Fibers. M.J. Aminoff, & R.B. Daroff (Eds). *Encyclopedia of Neurological Sciences.* 2nd Edition.

650. Veeramah, K.R., O’Brien, J.E., Meisler, M.H., Cheng, X., Dib-Hajj, S.D., Waxman, S.G., Talwar, D., Girirajan, S., Eichler, E.E., Restifo, L.L., Erickson, R.P., Hammer, M.F. *De novo* pathogenic mutation of *SCN8A* identified by whole genome sequencing of a family quartet with infantile epileptic encephalopathy and SUDEP, Amer. J. Human Genetics, 90(3): 502-510, 2012. PMID: 22365152

651. Bryce, T.N., Biering-Sorensen, F., Finnerup, N.B., Cardenas, D.D., Defrin, R., Ivan, E., Lundeberg, T., Norrbrink, C., Richards, J.S., Siddall, P., Stripling, T., Treede, R-D, Waxman, S.G., Widerstrom-Noga, E., Yezierski, R.P., Dijkers, M. International spinal cord injury pain classification: Part I. Background and description. Spinal Cord, 1-9, 2012. PMID: 22182852

652. Hoeijmakers, J.G.J., Faber, C.G., Lauria, G., Merkies, I.S.J., Waxman, S.G. Small fiber neuropathies: advances in diagnosis, pathophysiology and management. Nature Rev. Neurology, 8(7): 369-79, 2012. PMID: 22641108

653. Lauria, G., Merkies, I.S.J., Waxman, S.G., Faber, C.G. Approach to small fiber neuropathy. H. Kaminski, R. Ruff, and B. Katirji (Eds). *Neuromuscular Disorders in Clinical Practice, 2nd Edition,* Springer, (in preparation).

654. Wu,D., Chandra,D., McMahon,T., Wang,D., Stecher, J., Dadgar, J., Kharazia, V.N., Qi, Z-H., Liang,Y., Waxman, S.G., Dib-Hajj, S.D., and Messing, R.O.   PKCe-mediated phosphorylation of Nav­1.8 enhances sodium channel function and produces mechanical hyperalgesia.  J. Clin. Invest, 122(4): 1306-15, 2012. PMID: 22426212

655. Bryce, T.N., Biering-Sorensen, F., Finnerup, N.B., Cardenas, D.D., Defrin, R., Ivan, E., Lundeberg, T., Norrbrink, C., Richards, J.S., Siddall, P., Stripling, T., Treede, R-D, Waxman, S.G., Widerstrom-Noga, E., Yezierski, R.P., Dijkers, M. International spinal cord injury pain (ISCIP) classification: Part 2. Initial validation using vignettes. Spinal Cord, 1-9, 2012. PMID: 22310319

656. Waxman, S.G. Sodium channels, the electrogenisome, and the electrogenistat: Lessons and questions from the clinic. J. Phys., 590(11): 2601-2612, 2012. PMID: 22411010

657. Honmou, O., Onodera, R., Sasaki, M., Waxman, S.G., Kocsis, J.D. Mesenchymal stem cells: Therapeutic outlook for stroke. Trends in Molecular Medicine, 18(5): 292-297, 2012. PMID: 22459358

658. Tan, A., Samad, O., Fischer, T., Zhao, P., Persson, A-K., Waxman, S.G. Maladaptive dendritic spine remodeling contributes to diabetic neuropathic pain. J. Neurosci., 32(20): 6795-807, 2012. PMID: 22593049

659. O'Brien, J.E., Sharkey, L.M., Vallianatos, C.N., Han, C., Blossom, J.C., Yu, T., Waxman, S.G., Dib-Hajj, S.D., Meisler, M.H. Interaction of Voltage-gated sodium channel Nav1.6 (SCN8A) with microtubule associated protein MAP1B. J. Biol. Chem., 287(22):18459-66, 2012. PMID: 22474336

660. Shields, S.D., Ahn, H., Yang, Y., Han, C., Seal, R.P., Wood, J.N., Waxman, S.G., Dib-Hajj, S.D.   Nav1.8 expression is not restricted to nociceptors in mouse peripheral nervous system. Pain, 153:2017-30, 2012. PMID: 22703890

661. Vasylyev, D.V., and Waxman, S.G.  Membrane Properties and Electrogenesis in the Distal Axons of Small Dorsal Root Ganglion Neurons in vitro.  J. Neurophysiol., 108(3): 729-40, 2012. PMID: 22572942

662. Han, C., Hoeijmakers, J.G.J., Liu, S., Gerrits, M.M., te Morsche, R.H.M., Lauria, G., Dib-Hajj., S.D., Drenth, J.P.H., Faber, C.G., Merkies, I.S.J., and Waxman, S.G. Functional profiles of SCN9A variants in DRG and SCG neurons correlate with autonomic symptoms in small fiber neuropathy. Brain, 135(Pt 9): 2613-28, 2012. PMID: 22826602

663. Shields, S.D., Cheng, X., Üçeyler, N., Sommer, C., Dib-Hajj, S.D., Waxman, S.G. Sodium channel Nav1.7 is essential for lowering heat pain threshold after burn injury. J Neurosci, 32(32):10819-32, 2012. PMID: 22875917

664. Estacion, M., and Waxman, S.G.  The response of NaV1.3 sodium channels to ramp stimuli: Multiple components and mechanisms, J. Neurophysiol., 109(2): 306-314, 2013. PMID: 23114218

665. Hoeijmakers, J.G.J., Merkies, I.S.J., Gerrits, M.M., Waxman, S.G., Faber, C.G. Genetic aspects of sodium channelopathy in small fiber neuropathy. Clin. Genetics., 82(4): 351-8, 2012. PMID: 22803682

666. Samad, O.A., Tan, A. M., Cheng, X., Foster, E., Dib-Hajj, S.D., Waxman, S.G. Virus-mediated shRNA knockdown of NaV1.3 in rat dorsal root ganglion attenuates nerve-injury induced neuropathic pain. Molec. Therapy, 21(1): 49-56, 2013. PMID: 22910296

667. Persson, A-K, Liu, S., Faber, C.G., Merkies, I.S.J., Black, J.A., Waxman, S.G. Neuropathy-associated Nav1.7 variant I228M impairs integrity of DRG neuron axons. Ann. Neurol., 73(1): 140-5, 2013. PMID: 23280954

668. Black, J.A., Newcombe, J., and Waxman, S.G.  Nav1.5 sodium channels in macrophages in multiple sclerosis lesions. Multiple Sclerosis Journal, 19:532-542, 2013. PMID: 22951351

669. Yang, Y., Dib-Hajj, S.D., Zhang, J., Zhang, Y., Tyrrell, L., Estacion, M., and Waxman, S.G. Structural modeling and mutant cycle analysis predict pharmacoresponsiveness of a NaV1.7 mutant channel,

Nature Comm., 3: 1186, 2012. PMID: 23149731

670. Faber, C.G., Lauria, G., Merkies, I.S.J., Cheng, X., Han, C., Ahn, H-S., Persson, A-K., Hoeijmakers, J.G.J., Gerrits, M.M., Pierro, T., Lombardi, R., Kapetis, D., Dib-Hajj, S.D., and Waxman, S.G. Gain-of-function NaV1.8 mutations in painful neuropathy. Proc. Natl. Acad. Sci., 109:19444-19449, 2012. PMID: 23115331

671. Black, J.A., Frézel, N., Dib-Hajj, S., and Waxman, S.G. Nav1.7 is expressed in peripheral and central projections and terminals of dorsal root ganglion neurons. Molec. Pain, 8:82, 2012. PMID: 23134641

672. Dib-Hajj, S.D., Yang, Y., Black, J.A., Waxman, S.G. The NaV1.7 sodium channel: from molecule to man. Nature Rev Neurosci, 14(1): 49-62, 2013. PMID: 23232607

673. Estacion, M., Yang, Y., Dib-Hajj, S.D., Tyrrell, L., Lin, Z, Yong, Y. and Waxman, S.G. A new NaV1.7 mutation in an erythromelalgia patient. Biochem. Biophys. Res. Comm., 432(1): 99-104, 2013. PMID: 23376079

674. Yang, Y., Estacion, M., Dib-Hajj, S.D., and Waxman, S.G.  Molecular architecture of a sodium channel S6 helix: radial tuning of the Nav1.7 activation gate. J. Biol. Chem., 288(19): 13741-13747, 2013. PMID: 23536180

675. Waxman, S.G. Painful Na-channelopathies: An expanding universe. Trends Molec. Med., 19(7):406-9, 2013. PMID: 23664154

676. Tan, A.M., Samad, O.A., Liu, S., Zhao, P., and Waxman, S.G. Burn injury-induced mechanical allodynia is maintained by Rac1-regulated dendritic spine dysplasia. Exper. Neurol., 248: 509-519, 2013. PMID: 23933578

677. Ahn, H-S., Vasylyev, D., Estacion, M., Macala, L., Shah, P., Faber, C.G., Merkies, I.S.J., Dib-Hajj, S.D., and Waxman, S.G. Differential effect of D623N variant and wild-type Nav1.7 sodium channels on resting potential and interspike membrane potential of dorsal root ganglion neurons. Brain Research, 529: 165-77, 2013. PMID: 23850641

678. Andres, C., Hasenauer, J., Ahn, H-S., Joseph, E.K., Isensee, J., Theis, F.J., Allgöwer, F., Levine, J.D., Dib-Hajj, S.D., Waxman, S.G., and Hucho, T. Wound healing growth factor, basic FGF, induces Erk1/2 dependent mechanical hyperalgesia. Pain, 154(2216-2226), 2013. PMID: 23867734

679. Huang, J., Yang, Y., Zhao P., Gerrits, M., Hoeijmakers, J.G., Bekelaar, J., Merkies, I.S.J., Faber, C.G., Dib-Hajj, S.D., and Waxman, S.G. Small-fiber neuropathy Nav1.8 mutation shifts activation to hyperpolarized potentials and increases excitability of dorsal root ganglion neurons, J. Neurosci., 33(35): 14087-14097, 2013. PMID: 23986244

680. Lauria, G., Faber, C.G., Merkies, I.S., Waxman, S.G. Diagnosis of neuropathic pain: challenges and possibilities. Expert Opin Med Diagn. 2013; 6:89-93. PMID: 23480652

681. Black, J.A., Hoeijmakers, J.G.J., Faber, C.G., Merkies, I.S.J., Waxman, S.G. Nav1.7: Stress-induced changes in immunoreactivity within magnocellular neurosecretory neurons of the supraoptic nucleus, Molec. Pain, 9: 39, 2013. PMID: 23924059

682. Han, C., Vasylyev, D., Macala, L.J., Gerrits, M.M., Hoeijmakers, J.G.J., Bekelaar, K.J., Dib-Hajj, S.D., Faber, C.G., Merkies, I.S.J., Waxman, S.G. The G1662S NaV1.8 Mutation in Small Fiber Neuropathy: Impaired Inactivation underlying DRG Neuron Hyperexcitability. J. Neurol. Neurosurg. Psychiatry, 85(5): 499-505, 2014. PMID: 24006052

683. Yang, Y., Vasylyev, D.V., Dib-Hajj, F., Veeramah, K.R., Hammer, M.F., Dib-Hajj, S.D., Waxman, S.G. Multi-state structural modeling and voltage-clamp analysis of epilepsy/autism mutation Kv10.2-R327H demonstrate the role of this residue in stabilizing the channel closed state, J. Neurosci., 33(42): 16586-93, 2013. PMID: 24133262

684. Black, J.A. and Waxman, S.G. Non-canonical roles of voltage-gated sodium channels, Neuron, 80(2): 280-91, 2013. PMID: 24139034

685. Park, J., Werley, C., Venkatachalam, V., Dib-Hajj, S.D., Waxman, S.G., and Cohen, A. Screening fluorescent voltage indicators with spontaneously spiking HEK cells, PLOS One, 8(12): e85221., 2013. PMID: 24391999

686. Bird, E.V., Christmas, C.R., Loescher, A.R., Smith, K.G., Robinson, P.P., Black, J.A., Waxman, S.G., and Boissonade, F.M. The correlation of NaV1.8 and NaV1.9 sodium channels to neuropathic pain in human subjects with lingual nerve neuromas. Molec. Pain, 9(1): 52, 2013. PMID: 24144460

687. Persson, A-K., Kim, I., Zhao, P., Estacion, M., Black, J.A., and Waxman, S.G. Sodium Channels contribute to degeneration of dorsal root ganglion neurites induced by mitochondrial dysfunction in an *in vitro* model of axonal injury. J. Neurosci., 33(49): 19250-61, 2013. PMID: 24305821

688. Waxman, S.G., and Zamponi, G.W. Regulating excitability of peripheral afferents: Emerging ion channel targets. Nature Neuroscience, 17: 153-63, 2013. PMID: 24473263

689. Black, J.A., Vasylyev, D., Dib-Hajj, S.D., and Waxman, S.G. Nav1.9 expression in magnocellular neurosecretory cells of supraoptic nucleus. Exper. Neurol., 253: 174-9, 2014. PMID: 24424281

690. Vasylyev, D.V., Han, C., Zhao, P., Dib-Hajj, S., Waxman, S. Dynamic-clamp analysis of wild-type hNaV1.7 and erythromelalgia mutant channel L858H. J. Neurophys., 111(7): 1429-43, 2014. PMID: 24401712

691. Huang, J., Han, C., Estacion, M., Vasylyev, D., Hoeijmakers, J.G.J., Gerrits, M.M., Tyrrell, L., Lauria, G., Faber, C.G., Dib-Hajj, S.D., Merkies, I.S.J., Waxman, S.G. Gain-of-function mutations in sodium channel NaV1.9 in painful neuropathy. Brain, 137(Pt.6): 1627-1642, 2014. PMID: 24776970

692. Oliva, M.K., McGarr, T.C., Beyer, B.J., Gazina, E., Kaplan, D.I., Cordeiro, L., Thomas, E., Dib-Hajj, S.D., Waxman, S.G., Frankel, W.N., Petrou, S. Physiological and genetic analysis of multiple sodium channel variants in a model of genetic absence epilepsy. Neurobiol. of Disease, 67: 180-90, 2014. PMID: 24657915

693. Mishra, A.M., Bai, X., Sanganahalli, B.G., Waxman, S.G, Shatillo, O., Hyder, F., Pitäkanen, A., and Blumenfeld, H. Decreased resting functional connectivity after traumatic brain injury in the rat. PLOS One, 9(4): e952820, 2014. PMID: 24748279

694. Liu, S., Zwinger, P., Black, J.A., Waxman, S.G.   Tapered withdrawal of phenytoin worsens EAE without inflammatory rebound and mortality. J. Neurol. Sci., 341(1-2): 8-12, 2014. PMID: 24690348

695. Pappalardo, L.W., Samad, O.A., Black, J.A., Waxman, S.G. Voltage-gated sodium channel Nav1.5 contributes to astrogliosis in an *in vitro* model of glial injury via reverse Na+/Ca2+ exchange. Glia, 62(7): 1162-75, 2014. PMID: 24740847

696. Devigili, G., Eleopra, R., Pierro, T., Lombardoi, R., Rinaldo, S., Lettieri, C., Faber, C.G., Merkies, I.S.J., Waxman, S.G., and Lauria, G.  Paroxysmal itch caused by gain-of-function Nav1.7 mutation.  Pain, 155: 1702-1707, 2014. PMID: 24820863

697. Estacion, M., O'Brien, J.E., Conravey, A., Hammer, M.F., Waxman, S.G., Dib-Hajj, S.D., and Meisler, M.  A novel de novo mutation of SCN8A (Nav1.6) with enhanced channel activation in a child with epileptic encephalopathy. Neurobiol of Disease, 69: 117-23, 2014. PMID: 24874546

698. Lampert, A., Eberhardt, M., and Waxman, S.G.  Altered Sodium Channel Gating as Molecular Basis for Pain: Contribution of Activation, Inactivation, and Resurgent Currents**.** [Handbook of Experimental Pharmacology](http://link.springer.com/bookseries/164), Volume 221: 91-110, 2014. PMID: 24734233

699. Hoeijmakers, J.G.J., Faber, C.G., Merkies, I.S.J., Waxman, S.G. Channelopathies, painful neuropathy and diabetes: which way does the causal arrow point? Trends in Molec. Med., 20(10): 544-50, 2014. PMID: 25008557

700. Waxman, S.G., Merkies, I.S.J., Gerrits, M.M., Dib-Hajj, S.D., Lauria, G., Cox, J.J., Wood, J.N., Woods C.G., Drenth, J.P.H., and Faber, C.G. Sodium channel genes in pain-related disorders: review of phenotype genotype relationships and recommendations on clinical use. The Lancet Neurology, 13: 1152-60, 2014. PMID: 25316021

701. Dib-Hajj, S.D. and Waxman, S.G. Translational Pain Research: Lessons from Genetics and Genomics,Science Translat. Med., 6(249): 249sr4, 2014. PMID: 25122641

702. Pappalardo, L.W., Liu, S., Black, J.A., Waxman, S.G. Dynamics of sodium channel Nav1.5 expression is astrocytes in mouse models of multiple sclerosis. NeuroReport, 25(15): 1208-15, 2014. PMID: 25144393

703. Lauria, G., Merkies, I.S.J., Waxman, S.G., and Faber, C.G. Epidermal Nerve Fibers. Encyclopedia of the Neurological Sciences, Volume 2: 76-79, 2014.

704. Persson, A-K., Estacion, M., Ahn, H., Liu, S., Stamboulian-Platel, S., Waxman, S.G., Black, J.A.  Contribution of sodium channels to lamellipodial protrusion and Rac1 and ERK1/2 activation in ATP-stimulated microglia.  Glia, 62(12): 2080-95, 2014. PMID: 25043721

705. Bandaru, S., Liu, S., Waxman, S., and Tan, A. Dendritic spine dysgenesis contributes to hyperreflexia after spinal cord injury. J.Neurophysiol., 113(5): 1598-615, 2014. PMID: 25505110

706. Huang, J., Yang Y., Dib-Hajj, S.D., van Es M., ZhaoP., Salomon J., DrenthJ.P.H., and Waxman, S.G,   Depolarized inactivation overcomes impaired activation to produce DRG neuron hyperexcitability in a Nav1.7 mutation in a patient with distal limb pain,  J. Neurosci., 10;43(37): 12328-40, 2014. PMID: 25209274

707. Harrer, J.U., Üçeyler, N., Doppler, K., Fischer, T.Z., Dib-Hajj, S., Waxman, S.G., and Sommer, C.L. Neuropathic pain in two-generation twins carrying the sodium channel NaV1.7 functional variant R1150W. Pain, 155(10): 2199-203, 2014. PMID: 25116815

708. Kovel, C.G.F., Meisler, M.H., Brilstra, E.H., van Berkestijn, F.M., van ‘t Slot, R., van Lieshout, S., Nijman, I.J., O’Brien, J.E., Hammer, M.F., Estacion, M., Waxman, S.G., Dib-Hajj, S.D., and Koeleman, B.P. Characterization of a de novo SCN8A mutation in a patient with epileptic encephalopathy. Epilepsy Research, 108(9): 1511-8, 2014. PMID: 25239001

709. Tan, A.M., Waxman, S.G. Dendritic spine dysgenesis in neuropathic pain. Neurosci. Lett., 601: 54-60, 2015. PMID: 25445354

710. Shields, S.D., Butt, R.P., Dib-Hajj, S.D., and Waxman, S.G. Oral administration of PF-01247324, a subtype-selective Nav1.8 blocker, reverses cerebellar deficits in a mouse model of multiple sclerosis. PLOS One, 10(3): e0119067. 2015. PMID: 25747279

711. Lampert, A., Stühmer, W., and Waxman, S.G. Sodium Channels. Encyclopedia of Life Sciences, Wiley Online Library, 2015.

712. Doppler, K., Appeltshauser, L., Wilhelmi, K., Villmann, C., Dib-Hajj, S.D., Waxman, S.G., Mäurer, M., Weishaupt, A., Sommer, C. Severe destruction of paranodal architecture in inflammatory neuropathy with anti-contactin-1 auto-antibodies.J. Neurol. Neurosurg. Psychiatry, 86(7): 720-8, 2015. PMID: 25694474

713. Blanchard, M.G., Willemsen, M.H, Walker, J., Dib-Hajj, S.D., Waxman, S.G., Jongmans, C.J., Kleefstra, T., van de Warrenburg, B.P., Praamstra, P., Nicolai, J., Yntema, H.G., Bindels, R.J.M., Meisler, M.H., Kamsteeg, E-J. De novo gain-of-function and loss-of-function mutations of SCN8A in patients with intellectual disabilities and epilepsies. J. Med. Gen., 52(5): 330-7, 2015. PMID: 25725044

714. Han, C., Yang, Y., de Greef, B.T.A., Hoeijmakers, J.G.J., Gerrits, M.M., Verhamme, C., Qu, J., Laurai, G., Merkies, I.S.J., Faber, C.G., Dib-Hajj, S.D., and Waxman, S.G. The domain II S4-S5 linker in NaV1.9: A missense mutation enhances activation, impairs fast-inactivation, and produces human painful neuropathy. Neuromolecular Med., 17:159-169, 2015. PMID: 25791876

715. Rice, F.L., Albrecht, P.J., Wymer, J.P., Black, J.A., Merkies, I.S.J., Faber C.G., and Waxman, S.G.  Sodium channel NaV1.7 in vascular myocytes, endothelium, and innervating axons in human skin,  Molec. Pain,  11:26, 2015. PMID 25957174

716. Namer, B., Orstavik, K., Schmidt, R., Kleggetveit, I-P., Weidner, C., Mörk, C., Kvernebo, M.S., Kvernebo, K., Salter, H., Carr, T.H., Segerdahl, M., Quiding, H., Waxman, S.G., Handwerker, H.O., Torebjörk, H.E., Jorum, E., Schmelz, M.  Specific changes in conduction velocity recovery cycles of single nociceptors in an erythromelalgia patient with the I848T gain-of-function mutation of NaV1.7.  Pain, 156(9):1637-46, 2015. PMID 25993546

717. Dib-Hajj, S.D., Black, J.A., and Waxman, S.G. NaV1.9: A sodium channel linked to human pain. Nat. Rev. Neurosci., 16: 511-19, 2015. PMID 26243570

718. Tan, A., Samad, O., Dib-Hajj, S.D, and Waxman, S.G., Virus-mediated knockdown of Nav1.3 in dorsal root ganglia of STZ-induced diabetic rats alleviates tactile allodynia.  Molec. Medicine, 21:544-52, 2015. PMID 26101954

719. Doppler, K., Appeltshauser, L., Krämer, H.H., Ng, J.K., Meinl, E., Villmann, C., Brophy, P., Dib-Hajj, S.D., Waxman, S.G., Weishaupt, A., Sommer, C.  Contactin-1 and neurofascin-155/-186 are not targets of auto-antibodies in multifocal motor neuropathy.PLoS One, 10(8):e0137443, 2015. PMID 26218529

720. Estacion, M., Vohra, B.P.S., Liu, S., Hoeijmakers, J., Faber, C.G., Merkies, I.S.J., Lauria, G., Black, J.A., Waxman, S.G. Ca2+ toxicity due to reverse Na+/Ca2+ exchange contributes to degeneration of neurites of DRG neurons induced by a neuropathy-associated Nav1.7 mutation. J. Neurophysiol., 114(3):1554-64, 2015. PMID 26156380

721. Akin A.J., Solé,L., Dib-Hajj,S.D. Waxman, S.G., and Tamkun, M.M.  Preferential targeting of Nav1.6 voltage-gated Na+ channels to the initial segment during axon initial segment development.  PLoS One,  10(4); e0124397, 2015. PMID 25874799

722. Han C, Estacion M, Huang J, Vasylyev D, Zhao P, Dib-Hajj SD, Waxman SG. Human Nav1.8: enhanced persistent and ramp currents contribute to distinct firing properties of human DRG neurons.  J. Neurophysiol., 113: 3172-3185, 2015. PMID 25787950

723. Han, C., Huang, J., and Waxman, S.G. Sodium Channel NaV1.8: Emerging links to human disease. Neurology, 86:473-483, 2016. PMID 26747884

724. Waxman, S.G. and Kantarci, O. The cerebellar channelopathy of multiple sclerosis. Neurology, 86(5):406-7, 2016. PMID 26740676

725. Hoeijmakers, J.G., Faber, C.G., Merkies, I.S., and Waxman, S.G. Painful peripheral neuropathy and sodium channel mutations. Neurosci. Lett., 596: 51-9, 2015. PMID: 25556685

726. Brouwer, B.A., Merkies, I.S., Gerrits, M.M., Waxman, S.G., Hoeijmakers, J.G., and Faber, C.G. Painful neuropathies: The emerging role of sodium channelopathies. J. Peripher. Nerv. Syst., 19(2) 53-64, 2014. PMID: 25250524

727. Lauria, G., Ziegler, D., Malik, R., Merkies, I.S., Waxman, S.G., Faber, C.G., PROPANE Study group. The role of sodium channels in painful diabetic idiopathic neuropathy. Curr. Diab. Rep., 14(10): 538, 2014. PMID: 25142720

728. Pappalardo LW, Black JA, and Waxman SG. Sodium channels in astroglia and microglia. Glia, 64(10):1628-45, 2016. PMID: 26919466

729. McDonnell,A., Schulman,B., Ali,Z., Dib-Hajj,S.D., Brock,F., Cobain,S., Mainka, T., Vollert, J., Tarabar,S., and Waxman, S.G.  Inherited Erythromelalgia due to mutations in *SCN9A:* natural history, clinical phenotype and somatosensory profile**.** Brain, 139(Pt 4):1052-65, 2016. PMID: 26920677

730. Alexandrou, A.J., Brown, A., Chapman, M.L., Estacion, M., Turner, J., Mis, M.A., Wilbrey, A., Payne, E.C., Gutteridge, A., Cox, P.J., Doyle, R., Printzenhoff, D., Lin, Z., Marron, B.E., West, C., Swain, N.A., Storer, R.I., Stupple, P.A., Castle, N.A., Hounshel, J.A., Rivarac, M., Randall, A., Dib-Hajj, S.D., Krafte, D., Waxman, S.G., Patel, M.K., Butt, R.P., and Stevens, E.B. Subtype-selective small molecule inhibitors reveal a fundamental role for NaV1.7 in nociceptor electrogenesis, axonal conduction and presynaptic release. PLOS One, 11(4): e0152305, 2016. PMID: 27050761

731. Zhao, P., Hill, M., Liu, S., Chen, L., Bangalore, L., Waxman, S.G., and Tan, A.M. Dendritic spine remodeling following early and late RAC1-inhibition after spinal cord injury: Evidence for a pain biomarker. J. Neurophysiol., 115(6):2893-910, 2016. PMID: 26936986

732. Geha, P., Yang, Y., Estacion, M., Schulman, B.R., Tokuno, H., Apkarian, A.V., Dib-Hajj, S.D., Waxman, S.G. Pharmacotherapy for pain in a family with inherited erythromelalgia guided by genomic analysis and functional profiling. JAMA Neurol., 73(6):659-67, 2016. PMID: 27088781

733. Persson, A.K., Hoeijmakers, J.G.J., Estacion, M., Black, J.A., and Waxman, S.G. Sodium channels, mitochondria and axonal degeneration in peripheral neuropathy. Trends in Molec. Med., 22(5): 377-90, 2016. PMID: 27085813

734. Geha, P., and Waxman, S.G. Pain perception: Multiple “matrices” or one? JAMA Neurol., 73(6):628-30, 2016. PMID: 27111104

735. Cao, L., Nitzsche, N., McDonnell, A., Alexandrou, A., Saintot, P-P., Loucif, A.J.C., Brown, A.R., Young, G., Mis, M., Randall, A., Waxman, S.G., Stanley, P., Kirby, S., Tarabar, S., Gutteridge, A., Butt, R., McKernan, R.M., Whiting, R., Ali, Z., Bilsland, J., Stevens, E.B.Pharmacological reversal of pain phenotype in iPSC-derived sensory neurons and human subjects with inherited erythromelalgia, Science Trans. Medicine**,**8(335): 335ra56, 2016**.** PMID: 27099175

736. Duan, G., Han, C., Wang, Q., Guo, S., Zhang, Y., Ying, Y., Huang, P., Zhang, L., Macala, L., Shah, P., Zhang, M., Li, N., Dib-Hajj, S.D., Waxman, S.G., Zhang, X. A SCN10A SNP biases human pain sensitivity. Molec. Pain, 12:1-16, 2016. PMID: 27590072

737. Han C., Yang Y., te Morsche R.H., Drenth J.P.H., Politei J.M., Waxman S.G., Dib-Hajj S.D. Familial gain-of-function Nav1.9 mutation in a painful channelopathy. J. Neurol. Neurosurg. Psychiatry, 88(3):233-240, 2017.  PMID: 27503742

738. Tanaka, B.S., Zhao, P., Dib-Hajj, F.B., Morisset, V., Tate, S., Waxman, S.G., Dib-Hajj, S.D. A gain-of-function mutation in Nav1.6 in a case of trigeminal neuralgia. Molec. Med, 22:338-348, 2016. PMID: 27496104

739. Yang, Y., Huang, J., Mis, M., Estacion, M., Macala, L., Shah, P., Schulman, B., Horton, D., Dib-Hajj, S., and Waxman, S. NaV1.7-A1632G mutation from a family with inherited erythromelalgia: Enhanced firing of dorsal root ganglia neurons evoked by thermal stimuli. J Neurosci., 36(28):7511-22, 2016. PMID: 27413160

740. Asiedu, M.N, Han, C.Y., Dib-Hajj, S.D., Waxman, S.G., Price, T.J., and Dussor, G.  The AMPK activator A769662 blocks voltage-gated sodium channels: discovery of a novel pharmacophore with potential utility for analgesic development.   PLOS One, 12(1):e0169882, 2017. PMID: 28118359

741. Rolyan, H., Liu, S., Hoeijmakers, J.G.J., Faber, C.G., Merkies, I.S.J., Lauria, G., Black, J.A., and Waxman, S.G. Painful neuropathy-associated G856D mutation of Nav1.7 produces time dependent decrease in ATP and increase in ROS in small-diameter axons of DRG neurons *in vitro,*Molec. Pain, 12:1-13, 2016. PMID: 27821467

742. Martinelli-Boneschi, F., Colombi, M., Castori, M., Devigili, G., Eleopra, R., Malik, R.A., Ritelli, M.,

Zoppi, N., Dordoni, C., Sorosina, M., Grammatico, P., Fadavi, H., Gerrits, M.M., Almomani, R., Faber, C.G., Merkies, I.S.J., Toniolo, D., Cocca, M., Doglioni, C., Waxman, S.G., Dib-Hajj, S.D.,

Taiana, M.M., Sassone, J., Lombardi, R., Cazzato, D., Zauli, A., Santoro, S., Marchi, M., and Lauria, G. *COL6A5* variants in Familial neuropathic chronic itch. Brain, 140:555-567, 2016. PMID: 28073787

743. Lee, S-J., Kim, S-H., Hahn, S.J., Waxman, S.G., and Choi, J-S. Mechanism of inhibition by chlorpromazine of the human pain threshold sodium channel, NaV1.7. Neurosci Lett., 639:1-7, 2017. PMID: 28017662

744. Kapetis, D., Sassone, J., Yang, Y., Galbardi, B., Xenakis, M., Westra, R., Szklarczyk, R., Lindsey, P., Faber, C., Gerrits, M.M., Merkies, I., Dib-Hajj, S.D., Mantegazza, M., Waxman, S.G., Lauria, G., Network topology of NaV1.7 mutations in sodium channel-related painful disorders, BMC Systems Biology, 11(1):28, 2017. PMID: 28235406

745. Cao, X.C., Pappalardo, L.W., Waxman, S.G. and Tan, A. Dendritic spine dysgenesis in superficial dorsal horn sensory neurons after spinal cord injury. Molec. Pain, 13:1-10, 2017. PMID: 28326929

746. Dib-Hajj, S.D., Geha, P., and Waxman, S.G. Sodium channels in pain disorders: Pathophysiology and prospects for treatment. Pain, 158:S7-S107, 2017. PMID: 28240647

747. Deuis, J.R., Dekan, Z., Wingerd, J.S., Smith, J.J., Munasinghe, N.R., Bhola, R.F., Imlach, W.L.,Herzig, V., Armstrong, D.A., Rosengren, K.J., Bosmans, F., Waxman, S.G., Dib-Hajj, S.D., Escoubas, P., Minett, M.S., Christie, M.J., King, G.F., Alewood, P.F., Lewis, R.J., Wood, J.N., Vetter, I.  Pharmacological characterisation of the highly NaV1.7 selective spider venom peptide Pn3a.Scientific Reports, 7:40883, 2017. PMID: 28106092

748. Estacion, M.E., and Waxman, S.G.  Nonlinear effects of hyperpolarizing shifts in activation of mutant NaV1.7 channels on resting membrane potential.   J. Neurophysiol., 117(4):1702-1712, 2017. PMID: 28148645

749. Torii, M., Sasaki, M., Mohammed, S., Chang, Y-W., Waxman, S.G., Kocsis, J.D., Rakic, P., and Hashimoto-Torii, K.,   Detection of vulnerable neurons damaged by environmental insults in utero. Proc. Natl. Acad. Sci., 114(9):2367-2372, 2017. PMID: 28123061

750. Zakrzewska, J.M., Palmer, J., Morisset, V., Giblin, G.M.P., Obermann, M., Ettlin, D.A., Cruccu, G., Bendtsen, L., Estacion, M., Derjean, D., Waxman, S.G., Layton, G., Gunn, K., and Tate, S. Safety and efficacy of a NaV1.7-selective sodium channel blocker in trigeminal neuralgia: a double-blind, placebo-controlled, randomized withdrawal phase 2a trial. Lancet Neurol., 16(4):291-300, 2017. PMID: 28216232

751. Huang, J., Vanoye, C.G., Cutts, C., Goldberg, Y.P., Dib-Hajj, S.D., Cohen, C.J., Waxman, S.G., and George, A.L. Sodium channel NaV1.9 mutations associated with insensitivity to pain dampen neuronal excitability. J. Clin. Invest., 127(7):2805-2814, 2017. PMID: 28530638

752. Tanaka, B.S., Nguyen, P.T., Zhou, E.Y., Yang, Y., Yarov-Yarovoy, V., Dib-Hajj, S.D., and Waxman S.G. Gain-of-Function Mutation of a Voltage-Gated Sodium Channel Nav1.7 Associated with Peripheral Pain and Impaired Limb Development. J. Biol. Chem., 292(22):9262-9272, 2017. PMID: 28381558

753. Yang, Y., Adi, T., Effraim, P., Chen, L., Dib-Hajj, S.D., and Waxman, S.G. Reverse

pharmacogenomics: carbamazepine normalizes activation and attenuates thermal-induced hyperexcitability of sensory neurons due to Nav1.7 mutation I234T. British Journal of Pharmacol., 175(12):2261-2271, 2018. PMID: 28658526

754. Tham, S.W., Li, L., Effraim, P., and Waxman, S.G.  Between Fire and Ice:  Refractory Hypothermia and Warmth-induced Pain in Inherited Erythromelalgia, BMJ Case Reports, Jul 26;2017, 2017. PMID: 28751508

755. Yang, Y., Mis, M.A., Estacion, M., Dib-Hajj, S.D., and Waxman, S.G. NaV1.7 as a pharmacogenomics target for pain: Moving toward precision medicine. Trends in Pharmacolog. Sci., 39(3):258-275, 2018. PMID: 29370938

756. Geha, P., Schulman, B.R., Dib-Hajj. S.D., and Waxman, S.G. Brain activity associated with pain in inherited erythromelalgia: Stimulus-free pain engages brain areas involved in valuation and learning. Neurobiology of Pain, 3:8-14, 2018.

757. Huang, J., Mis, M., Tanaka, B., Adi, T., Estacion, M., Liu, S., Walker, S., Dib-Hajj, S.D., and Waxman, S.G.  Atypical changes in DRG neuron excitability and complex pain phenotype associated with a Nav1.7 mutation that massively hyperpolarizes activation, Scientific Reports, 8(1):1811, 2018. PMID: 29379075

758. Chen, L., Huang, J., Zhao, P., Persson, A-K., Dib-Hajj, F.B., Cheng, X., Tan, A., Waxman, S., and Dib-Hajj, S.D. Conditional knockout of NaV1.6 in adult mice ameliorates neuropathic pain. Scientific Reports, 8(1): 3845, 2018. PMID: 29497094

759. Li Y., Zhu T., Yang H., Dib-Hajj S.D., Waxman, S.G., Yu Y., Xu T-L., Cheng, X. Nav1.7 is phosphorylated by Fyn tyrosine kinase which modulates channel expression and gating in a cell type-dependent manner. Mol. Pain, 14:1-14, 2018. PMID: 29790812

760. Dash, B., Han, C., Waxman, S.G., and Dib-Hajj, S.D. Non-muscle myosin II isoforms interact with sodium channel alpha subunits. Mol Pain, 14:1744806918788638, 2018. PMID: 29956586

761. Nettuwakul, C., Praditsap, O., Sawasdee, N., Rungroj, N., Ruamyod, K, Watanapa, W.B., Junking, M., Sittideth, S., Sritippayawan, S., Cheunsuchon, B., Chuawattana, D., Rojsatapong, S., Chaowagul, W., Dib-Hajj, S.D., Waxman, S.G., and Yenchitsomanus, P-t. Loss-of-function mutations of SCN10A encoding NaV1.8  subunit of voltage-gated sodium channel in patients with human kidney stone disease. Nature Sci. Rep., 8:10453, 2018. PMID: 29992996

762. Pappalardo, L.W., Samad, O.A., Liu, S., Zwinger, P.J., Black, J.A., and Waxman, S.G. NaV1.5 in astrocytes plays a sex-specific role in clinical outcomes in a mouse model of multiple sclerosis. Glia, 66(10):2174-2187. PMID: 30194875

763. Bennett, D.L., Clark, A.J., Huang, J., Waxman, S.G., and Dib-Hajj S.D. The role of voltage gated sodium channels in pain signaling. Physiological Rev., 99:1079-1151, 2019.

764. Guo, Y., Benson, C., Hill, M., Henry, S., Effraim, P., Waxman S.G., Dib-Hajj, S.D., and Tan, A. Therapeutic potential of PAK1 inhibition for pain associated with cutaneous burn injury. Mol Pain, 24:1744806918788648. PMID: 29956587

765. Hoffstaetter, L.J., Mastrotto, M., Merriman, D.K., Dib-Hajj, S.D., Waxman, S.G., Bagriantsev, S.N., and Gracheva, E.O. Somatosensory neurons enter a state of altered excitability during hibernation. Current Biology, 28(18):2998-3004, 2018. PMID: 30174191

766. Cummins, T.C., Waxman, S.G., and Wood, J.N. Sodium Channels in Pain, in The Oxford Handbook of Neurobiology of Pain, Oxford University Press, 2018.

767. Arthur, L., Kenn, K., Verriotis, M., Peters, J., Kelly, A., Howard, R. F., Dib-Hajj, S.D., Waxman, S.G., and Walker, S. M. Pediatric erythromelalgia and SCN9A mutations: systematic review and single-center case series. J. Pediatrics, 206:217-224.e9, 2019. PMID: 30416015

768. Dash, B., Dib-Hajj, S.D., and Waxman, S.G.  Multiple myosin motors interact with sodium/potassium-ATPase alpha 1 subunits.  Mol Brain, 11(1):45, 2018. PMID: 30086768

769. Han, C., Themistocleous, A.C., Estacion, M., Dib-Hajj, F.B., Blesneac, I., Macala, L., Fratter, C., Bennett, D.L., Waxman, S.G., and Dib-Hajj, S.D. The novel activity of CBZ as an activation modulator extends from NaV1.7 mutations to the NaV1.8-S242T mutant channel from a patient with painful diabetic neuropathy. Mol Pharmacol, 94(5):1256-1269, 2018. PMID: 30135145

770. Hofmann, L., Hose, D., Grießhammer, A., Blum, R., Döring, F., Dib-Hajj, S., Waxman, S., Sommers, C., Wischmeyer, E., and Üçeyler, N. Characterization of small fiber pathology in a mouse model of Fabry disease. eLife, 7:e39300, 2018. PMID: 30328411

771. Hashimoto-Torii, K., Sasaki, M., Chang, Y-W., Waxman, S.G., Kocsis, J.D., Rakic, P., and Torri, M. Detection of local and remote cellular damage caused by spinal cord and peripheral nerve injury using a heat shock signaling reporter system, IBRO Reports, 5:91-98, 2018. PMID: 30480161

772. Adi, T., Estacion, M., Schulman, B.F., Vernino, S., Dib-Hajj. S.D., and Waxman, S.G. A novel gain-of-function NaV1.7 mutation in carbamazepine-responsive patient with adult-onset painful peripheral neuropathy. Mol. Pain, 14:1744806918815007, 2018. PMID: 30392441

773. Dib-Hajj, S.D., and Waxman, S.G. Sodium channels in human pain disorders: Genetics and pharmacogenomics. Ann Rev Neurosci., 42:87-106, 2019. PMID: 30702961

774. Eijkenboom, I., Sopacua, M., Otten, A.B.C., Gerrits, M.M., Hoeijmekers, J.G.J., Waxman, S.G., Lombard, R., Lauria, G., Merkies, I.S.J., Smeets, H.J.M., Faber, C.G., and Vanoevelen, J.M. Expression of pathogenic SCN9A mutations in the zebrafish: A model to study small-fiber neuropathy. Exp. Neuro., 311:257-264, 2019. PMID: 30316835

775. Waxman, S.G. Pointer-kindreds and Pain: Big Lessons from Small Families. Pain, Suppl 1:S49-S52, 2019. PMID: 31008849

776. de Greef, B.T.A., Hoeijmakers, J.G.J., Geerts, M., Oakes, M., Church, T.J.E., Waxman, S.G., Dib-Hajj, S.D., Faber, C.G., and Merkies, I.S.J. Lacosaamide in patients with NaV1.7 mutations-related small fiber neuropathy: A randomized controlled trial. Brain, 142:263-275, 2019. PMID: 30649227

777. Mis., M., Yang, Y., Tanaka, B., Gomis-Perez, C., Liu, S., Dib-Hajj, F., Adi, T., Garcia-Milian, R., Schulman, B., Dib-Hajj, S., and Waxman, S. Resilience to pain: A peripheral component identified using induced pluripotent stem cells and dynamic clamp. J. Neurosci, 39(3):382-392, 2019. PMID: 30459225

778. Sopacua, M., Hoeijmakers, J.G.H., Merkies, I.S.J., Lauria, G., Waxman, S.G. and Faber, C. Small fibre neuropathy: Expanding the clinical pain universe. J. Periph. Nervous System, 24(1):19-33, 2019. PMID: 30569495

779. Waxman, S.G., and Dib-Hajj, S.D. The two sides of NaV1.7: Painful and painless channelopathies. Neuron, 202(5):765-767, 2019. PMID: 30844393

780. Vrselja, Z., Daniele, S.G., Silbereis, J., Talpo, F., Morozov, Y.M., Sousa, A.M.M., Tanaka, B.S., Skarica, M., Pletikos, M., Kaur, N., Zhuang, Z.W., Liu, Z., Alkawadri, R., Sinusas, A.J., Latham, S., Waxman, S.G., and Sestan, N. Restoration of brain circulation and cellular functions hours postmortem. Nature, 568(7752):336-343, 2019. PMID: 30996318

781. Waxman, S.G. Peripheral afferents and the pain experience. Pain, 160(7):1487-1488, 2019. PMID: 30939586

782. Effraim, P.R., Huang, J., Lampert, A., Stamboulian, S., Zhao, P., Black, J., Dib-Hajj, S.D., and Waxman, S.G. Fibroblast growth factor homologous factor 2(FGF-13) associates with NaV1.7 in DRG neurons and alters its current properties in an isoform-dependent manner. Neurobiology of Pain, 6:100029, 2019. PMID: 31223136

783. Alsaloum, M., Estacion, M., Almomani, R., Gerrits, M.M., Bönhof, G.J., Ziegler, D., Malik, R., Ferdousi, M., Lauria, G., Merkies, I.S.J., Faber, C.G., Dib-Hajj, S.D., and Waxman, S.G. A gain-of-function sodium channel β2 subunit mutation in painful diabetic neuropathy. Molecular Pain, 15:1-14, 2019. PMID: 31041876

784. Israel, M.R., Tanaka, B.S., Castro, J., Thongyoo, P., Robinson, S.D., Zhao, P., Deuis, J.R., Craik, D.J., Durek, T., Brierley, S.M., Waxman, S.G., Dib-Hajj, S.D., and Vetter, I. NaV1.6 regulates excitability of mechanosensitive sensory neurons. J. Physiol., 597(14):3751-3768, 2019. PMID: 31087362

785. Kiernan, M.C., Bostock, H., Kaji, R., Kraup, C., Krishnan, A., Kuwabara, S., Lin, C. S-Y., Misawa, S., Moldovan, M., Park, S.B., Sung, J., Vucic, S., Wainger, B.J., Waxman, S., and Burk, D. Measurement of axonal excitability: Consensus guidelines. Clin. Neurophys., 131(1):308-323, 2020. PMID: 31471200

786. Akin, E.J., Higerd, G.P., Mis, M.S., Tanaka, B.S., Adi, T., Liu, S., Dib-Hajj, F.B., Waxman, S.G., and Dib-Hajj, S.D. Building sensory axons: delivery and distributions of NaV1.7 channels and effects of inflammatory mediators. Sci. Adv., 5(10):eaax4755, 2019. PMID: 31681845

787. Huang, J., Estacion, M., Zhao, P., Dib-Hajj, F., Schulman, B., Abicht, A., Kurth, I., Brockman, K., Waxman, and S., Dib-Hajj, S.D., A novel gain-of-function NaV1.9 mutation in a child with episodic pain, Front. In Neurosci/Percep. Sci, 13:918, 2019. PMID: 31551682

788. Grubinska, B., Chen, L., Alsaloum, M., Rampal, N., Matson, D.J., Yang, C., Taborn, K., Zhang, M., Youngblood, B., Liu, D., Galbreath, E., Allred, S., Lepherd, M., Ferrando, R., Kornecook, T.J., Lehto, S.G., Waxman, S.G., Moyer, B.D., Dib-Hajj, S., Gingras, J. Rat NaV1.7 loss-of-function genetic model: Deficient nociceptive and neuropathic pain behavior with retained olfactory function and intraepidermal nerve fibers. Mol. Pain, 15:1744806919881846. PMID: 31550995

789. Patwa, S., Benson, C.A., Dyer, L., Olson, K-L., Bangalore, L., Hill, M., Waxman, S.G., and Tan, A.M. Spinal cord motor neuron plasticity accompanies second-degree burn injury and chronic pain. Physiological Rep., 7(23):e14288, 2019. PMID: 31858746

790. Sizova, D.V., Huang, J., Akin, E.J., Estacion, M., Gomis-Perez, C., Waxman, S.G., and Dib-Hajj, S.D. A 49-residue sequence motif in the C-terminus of NaV1.9 regulates trafficking of the channel to the plasma membrane. J. Biol. Chem., 295(4):1077-1090, 2020. PMID: 31822564

791. Labau, J.I.R., Estacion, M., Tanaka, B., de Greef, B.T.A., Hoeijmakers, J.G.J., Geerts, M., Gerrits, M.M., Smeets, H.J.M., Faber, C.G., Merkies, I.S.J., Lauria, G., Dib-Hajj, S.D., and Waxman, S.G. Differential effect of lacosamide on NaV1.7 variants from responsive and non-responsive patients with small fiber neuropathy. Brain, 143(3):771-782, 2020. PMID: 32011655

792. Lee, S-I., Hoeijmakers, J.G.J., Faber, C.G., Merkies, I.S.J., Lauria, G., and Waxman, S.G. The small fiber neuropathy NaV1.7 I228M mutation: impaired neurite integrity via bioenergetic and mitotoxic mechanisms, and protection by dexpramiprexole. J. Neurophys., 123(2):645-657, 2019. PMID: 31851560

793. Di Stefano, G.D., Yuan, J-H., Crucco, G., Waxman, S.G., Dib-Hajj, S.D., and Truini A. Familial trigeminal neuralgia – a systematic clinical study with a genomic screen of the neuronal electrogenisome. Cephalagia, 40(8):767-777, 2020. PMID: 31928344

794. Chen, L., Effraim, P., Carrara, J., Zhao, P., Dib-Hajj, F.B., Dib-Hajj, S.D., and Waxman, S.G. Pharmacological characterization of a rat NaV1.7 loss-of-function model with insensitivity to pain. Pain, 161(6):1350-1360, 2020. PMID: 31977939

795. Urru, M., Muzzi, M., Coppi, E., Ranieri, G., Buonvicino, D., Camaioni, E., Coppini, R., Pugliese, A.M., Tanaka, B., Estacion, M., Waxman, S.G., Dib-Hajj, S.D., and Chiarugi, A. Dexpramipexole blocks NaV1.8 sodium channels and provides analgesia in multiple nociceptive and neuropathic pain models. Pain, 161(4):831-841, 2020. PMID: 31815915

796. Benson, C., Fenrich, K., Olson, K-L., Patwa, S., Bangalore, L., Waxman, S., and Tan, A. Dendritic spine dynamics after peripheral nerve injury: An intravital structural study. J. Neurosci, 40(22):4292-4308, 2020. PMID: 32371602

797. Nestler, E.J., and Waxman, S.G. Resilience to stress and resilience to pain: Lessons from molecular neurobiology and genetics. Trends in Mol. Med., 26(10):924-935, 2020. PMID: 32976800

798. Alsaloum, M., Higerd, G.P., Effraim, P.R., and Waxman, S.G. Toward Non-addictive analgesia: A status report on clinical studies on peripheral sodium channel blockers. Nature Rev. Neuro., 16(12):689-705, 2020. PMID: 33110213

799. Chen, L., Huang, J., Benson, C., Lankford, K.L., Zhao, P., Carrara, J., Tan, A.M., Kocsis, J.D., Waxman, S.G., Dib-Hajj, S.D. Sodium channel NaV1.6 in sensory neurons contributes to vincristine-induced pain. Brain, 143(8):2421-2436, 2020. PMID: 32830219

800. Yuan, J-H., Schulman, B.R., Effraim, P.R., Dib-Hajj, S.D., Jacobs, D.S., Waxman, S.G. Genomic analysis of 21 patients with corneal neuralgia following refractive surgery, Pain Reports, 5(4);e926, 2020. PMID: 32766464

801. Xenakis, M.N., Kapetis, D., Yang, Y., Heijman, J., Waxman, S.G., Lauria, G., Faber, C.G., Smeets, H.J.M., Westra, R.L., and Lindsey, P. Cumulative hydropathic topology of a voltage-gated sodium channel at atomic resolution. Physica A, 88(10):1319-1328, 2020. PMID: 32447794

802. McMahon, K.L., Tay, B., Deuis, J.R., Tanaka, B.S., Peigneur, S., Jin, A-H, Tytgat, J., Waxman, S.G., Dib-Hajj, S.D., Vetter, I, and Schroeder, C.I. Pharmacological activity and NMR solution structure of the leech peptide HSTX-I. Biochemical Pharmacology, 181:114082, 2020. PMID: 32524995

803. Waxman, S.G. Rational drug design for pain medicine: A new NaV1.7 inhibitor. Anesthesiology, 133(3):497-499, 2020. PMID: 32788556

804. Almomani, R., Marchi, M., Sopacua, M., Lindsey, P., Salvi, E., de Koning, B., Santoro, S., Magri, S., Smeets, H.J.M., Boneschi, F.M., Malik, R.R., Ziegler, D., Hoeijmakers, J.G.J., Bönhof, G., Dib-Hajj, S., Waxman, S.G., Merkies, I.S.J., Lauria, G., Faber, C.G., and Gerrits, M.M., on behalf of the PROPANE Study Group. Evaluation of molecular inversion probe versus TruSeq® custom methods for targeted next-generation sequencing. PLoS One. 2020;15(9):e0238467. PMID: 32877464

805. Toffano, A., Chiarot, G., Zamuner, S., Marchi, M., Salvi, E., Waxman, S.G., Faber, C.G., Lauria, G., Giacometti, A., and Simeoni, M. Computational pipeline to probe NaV1.7 gain-of-functions variants in neuropathic painful syndromes. Sci Rep., 10, 17930, 2020. PMID: 33087732

806. Cheng, X., Choi, J-S., Waxman, S.G., and Dib-Hajj, S.D. Sodium channels and beyond in peripheral nerve disease: Modulation by cytokines and their effector protein kinases. Neurosci Let., 74; 1354461, 2020. PMID: 33166641

807. Dong, W., Jin, S.C., Allocco, A., …Dib-Hajj, S., Waxman, S.G., … Lifton, R.P., Kahle, K.T. (49 authors). Exome sequencing implicates impaired GABA signaling and neuronal ion transport in trigeminal neuralgia. iScience, 2020; 23(10):101552. PMID: 33083721

808. Reimer, M., Bangalore, L., Waxman, S., and Tan, A. Core principles for the implementation of the neurodata without borders data standard. J Neurosci Meth., 2020; Nov 4; 108972. PMID: 33157146

809. Honmou, O., Yamashita, T., Morita, T., Oshigiri, T., Hirota, R., Iyama, S., Kato, J., Sasaki, Y., Ishiai, S., Ito,Y.M., Namioka, A., Namioka, T., Nakazaki, M., Kataoka-Sasaki, Y., Onodera, R., Oka, S., Sasaki, M., Waxman, S.G., and Kocsis, J.D. Intravenous Infusion of Auto Serum-expanded Autologous Mesenchymal Stem Cells in Spinal Cord Injury Patients: 13 Case Series, Clin. Neuro. and Neurosurg., 203:106565, 2021. PMID: 33667953

810. Gualdani, R., Yuan, J-H., Effraim, P., Di Stefano, G., Truini, A., Cruccu, G., Dib-Hajj, S.D., Gailly, P., and Waxman, S.G. Trigeminal neuralgia TRPM8 mutation: Enhanced activation, basal [Ca2+]i and menthol response, Neur Gen., 7(91):e550, 2021. PMID: 33977138

811. Akin, E.J., Alsaloum, M., Higerd, G.P., Liu, S., Zhao, P., Dib-Hajj, F.B., Waxman, S.G., Dib-Hajj, S.D. Paclitaxel increases axonal localization and vesicular trafficking of NaV1.7. Brain, awab113, 2021. PMID: 33734317

812. Xenakis, M.N., Kapetis, D., Yang, Y., Heijman, J., Waxman, S.G., Lauria, G., Faber, C.G., Smeets, H.J., Lindsey, P.J., and Westra, R.L. Non-extensitivity and criticiality of atomic hydropathicity around a voltage-gated sodium channel’s pore: A modeling study. J. Biol. Physics., 2021, 47(1);61-77. PMID: 33735400

813. Benson, C.B., Olson, K.A., Patwa, S., Reimer, M., Bangalore, L., Hill, M., Liu, S., Waxman, S.G., and Tan, A. Conditional RAC1 knockout in motor neurons restores H-reflex rate-dependent depression after spinal cord injury. Sci. Reports., 11(1):7838, 2021. PMID: 33837249

814. Xenakis, M., Kapetis, D., Yang, Y., Gerrits, M., Heijman, J., Waxman, S., Lauria, G., Faber, C., Westra, R., Lindsey, P., & Smeets, H. Hydropathicity-based prediction of pain-causing NaV1.7 variants. BMC Bioinformatics, 22(1):212, 2021. PMID: 33892629

815. Chen, L., Wimalasena, N.K., Shim, J., Han, C., Lee, S.I., Gonzalez-Cano, R., Estacion, M. Faber, C.G., Lauria, G., Dib-Hajj, S.D., Woolf, C.J., & Waxman, S.G. Two independent mouse lines carrying the NaV1.7-I228M gain-of-function variant display DRG neuron hyperexcitability but a minimal pain phenotype. Pain, 162(6):1759-1770, 2021. PMID: 33323889

816. Renthal, W., Chamessian, A., Curatolo, M., Davidson, S., Burton, M., Dib-Hajj, S., Dougherty, P.M., Ebert, A., Gereau IV, R.W., Ghetti, A., Gold, M.S., Hoben, G., Menichella, D.M., Mercier, P., Ray, W.Z., Salvemini, D., Seal, R.P., Waxman, S., Woolf, C.J., Stucky, C.L., Price, T.J. Human cells and networks of pain: Transforming pain target identification and therapeutic development. Neuron, 109(9):1426-1429, 2021. PMID: 33957072

817. Shibata, M., Pattabiraman, K., Muchnik, S.K., Kaur, N., Morozov, Y.M., Cheng, X., Waxman, S.G., & Sestan, N. Hominini-specific regulation of *CBLN2* increases prefrontal cortical dendritic spinogenesis. in press, 2021.

818. Alsaloum, M., Sosniak, D., Zhao, P., Almomani, R., Gerrits, M., Hoeijmakers, J.G.J., Lauria, G., Faber, C., Waxman, S., & Dib-Hajj, S. A novel gain-of-function sodium channel β2 subunit mutation in idiopathic small fiber neuropathy. J. Neurophys., in press, 2021. PMID: 34320850

819. Lu, W., Cheng, X., Chen, J., Chen, Y., Wang, M., Liu, J., Sang, M., Zhao, N., Yan, H., Cheng, X., Zhou, Q., Ye, J., Wang, J., Xu, E., Tang, Z., Zhou, X., Rong, M., Nilsen, E.A., Dib-Hajj, S.D., Waxman, S.G., Yu, W., & Cao, P. A buthus martensii kirsch scorpion sting targets NaV1.7 in mice and mimics a phenotype of human chronic pain. Pain, in press, 2021. PMID: 34252912

820. Yuan, J-H., Estacion, M., Mis, M., Tanaka, B., Schulman, B., Liu, S., Dib-Hajj, F., Dib-Hajj, S., & Waxman, S.G. KCNQ variants and pain modulation: A missense variant in Kv7.3 contributes to pain resilience. Brain Comm., 3(3):fcab212, 2021. PMID: 34557669

821. Alsaloum, M., and Waxman, S.G. IPSCs and DRGs: stepping stones to new pain therapies, Trends in Molec. Medicine, in press, 2021. PMID: 34933815

822. Alsaloum, M., Labau, J.I.R., Liu, S., Estacion, M., Zhao, P., Dib-Hajj, F., Waxman, S.G. Contributions of NaV1.8 and NaV1.9 to excitability in human induced pluripotent stem-cell derived somatosensory neurons. Science Reports, 11(1):24283, 2021. PMID: 34930944

823. Labau, J.I.R., Alsaloum, M., Estacion, M., Tanaka, B., Dib-Hajj, F.B., Lauria, G., Smeets, H.J.M., Faber, C.G., Dib-Hajj, S., and Waxman, S.G. Lacosamide inhibition of NaV1.7 channels depends on its interaction with the voltage sensor domain and the channel pore, Frontiers in Pharmacology, in press.

824. Alsaloum, M., Labau, J.I.R., Liu, S., Effraim, P., and Waxman, S.G. Normalizing excitability in human stem-cell derived sensory neurons: How much NaV1.7 blockade is needed? Brain, in press.

825. Higerd, G., Alsaloum, M., Estacion, M., Akin, E., Dib-Hajj, F., Liu, S., Zhao, P., Waxman, S. and Dib-Hajj, S. Nav channels and other axonal proteins are selectively co-trafficked in sensory neurons. J. Cell Biology, submitted.