

## **CURRICULUM VITAE - JEFFREY MILBRANDT, M.D., Ph.D.**

**Date:** December 2019

**CITIZENSHIP:** USA

### **ADDRESS AND TELEPHONE NUMBERS:**

Office: Department of Genetics  
Washington University School of Medicine  
660 S. Euclid Avenue, Box 8232  
St. Louis, MO 63110  
Telephone: (314) 362-4651  
E-mail: [jmilbrandt@wustl.edu](mailto:jmilbrandt@wustl.edu)

Home: 4 Brentmoor Park  
St. Louis, MO 63105  
Telephone: (314) 304-4691

### **PRESENT POSITION:**

James S. McDonnell Professor and Head, Department of Genetics  
Executive Director, McDonnell Genome Institute  
Co-Director, Needleman Center for Neurometabolism and Axonal Therapeutics  
Professor of Pathology & Immunology, Medicine and Neurology  
Washington University School of Medicine, St. Louis, MO

### **EDUCATION:**

B.S., University of Nebraska, 1974  
M.D., Washington University School of Medicine, 1978  
Ph.D., University of Virginia School of Medicine, 1983  
Resident, Department of Pathology, University of Virginia  
Hospital, Charlottesville, VA, 1978-1980; 1983

### **ACADEMIC POSITIONS/EMPLOYMENT:**

|              |   |
|--------------|---|
| 1983-1989    | Assistant Professor of Pathology and Medicine, Washington University School of Medicine, St. Louis, MO                    |
| 1989-1994    | Associate Professor of Pathology and Medicine, Washington University School of Medicine, St. Louis, MO                    |
| 1994-present | Professor of Pathology and Immunology and Medicine Washington University School of Medicine, St. Louis, MO                |
| 2005-2009    | David Clayson Professor of Neurology Washington University School of Medicine, St. Louis, MO                              |
| 2009-present | James S. McDonnell Professor and Head, Department of Genetics Professor of Pathology & Immunology, Medicine and Neurology |

2018-present Washington University School of Medicine, St. Louis, MO  
Executive Director, McDonnell Genome Institute  
2018-present Co-Director, Needleman Center for Neurometabolism and Axonal  
Therapeutics

**UNIVERSITY AND HOSPITAL APPOINTMENTS AND COMMITTEES:**

Consulting Physician, Barnes-Jewish Hospital, St. Louis, Missouri

**MEDICAL LICENSURE AND BOARD CERTIFICATION**

Missouri (Physician), July 1984

**HONORS AND AWARDS:**

Towe Scholarship, University of Nebraska  
Phi Eta Sigma  
Phi Beta Kappa  
Graduation with High Distinction, University of Nebraska, 1974  
Washington University Alumni Faculty Award, 1998  
David Clayson Endowed Professor, 2005  
James S. McDonnell Endowed Professor, 2009  
Second Century Award, 2018  
Distinguished Investigator Award, 2019

**RESEARCH SUPPORT:**

**ACTIVE**

|  |                |        |
|--|----------------|--------|
| 5RF1 AG013730-22 (Milbrandt)   | 7/1/17-6/30/22 | 2.7 CM |
| NIH/NIA  | \$349,969      | 22.5%  |
| Regulating NAD Metabolism to Inhibit Axon Degeneration in Neurodegenerative Diseases<br>The major goals of this project are to investigate the molecular underpinnings of axon degeneration after injury and in disease. |                |        |
| 2R01 NS087632-06 (Milbrandt/DiAntonio)   | 7/1/19-6/30/24 | 1.2 CM |
| NIH/NINDS  | \$324,097      | 10%    |
| Dissection of Sarm1-Induced Axon Degeneration and Cell Death<br>Our research is focused on defining the molecular underpinnings that cause neurons to die and their axons to degenerate in neurodegenerative disorders.  |                |        |
| 5R01 CA218263-03 (Milbrandt/DiAntonio)   | 6/9/17-5/31/20 | 1.2 CM |
| NIH/NCI  | \$324,644      | 10%    |
| Identifying Inhibitors of Axon Degeneration for the Treatment of TIPN<br>Major goal is to develop a high throughput screening assay to identify compounds useful in treating TIPN.                                       |                |        |
| 5R01 NS105645-02 (Milbrandt)   | 8/1/18-4/30/22 | 2.4 CM |
| NIH/NINDS  | \$262,143      | 20%    |
| Jun O-Glyncylation Regulates Schwann Cell Injury Response  |                |        |

The major goals are to investigate the role of O-GlcNacylation on transcriptional activity of cJun and its role in Schwann cell de-differentiation.

5R01 CA219866-02 (DiAntonio/Milbrandt) 8/16/17-7/31/22 0.6 CM  
NIH/NCI \$305,180 (\$152,590 Milbrandt) 5%  
(PQ#9) Promoting Axon Stability to Prevent Therapy-Induced Peripheral Neuropathy  
The major goal of this project is to identify novel treatment strategies for the prevention of TIPN.

**PENDING**

2P01 DK096990-06A1 (Perlmutter) 4/1/19-3/31/24 0.6 CM  
NIH/NIDDK \$100,000 (Core B) 5%  
New Therapies for Liver Fibrosis and Hyperproliferation in Alpha 1-AT Deficiency (Perlmutter)  
Core C: Genome Engineering and iPSC Center (Milbrandt)  
Major goal is to provide genome engineering for production of modified iPSCs and cell lines.  
Role: Core Director

1R01 (Synder) 04/01/20-03/31/25 0.24 CM  
NIH/ \$40,000 2%  
Subaward from Univ of Maryland  
Structure-function characterization of NADase active bacterial Toll-IL-1 receptor (TIR)  
resistance proteins  
Major goal: Functional assessment of NADase activity using previously established and  
published NADase assays and protocols developed in the laboratories of Dr. DiAntonio and  
Milbrandt.  
Role: Subaward Co-Investigator

**BIBLIOGRAPHY:**

1. Milbrandt J, Heintz NH, White WC, Rothman SM, Hamlin JL: Methotrexate-resistant Chinese hamster ovary cells have amplified a 135-kilobase-pair region that includes the dihydrofolate reductase gene. *Proc Natl Acad Sci USA*, 78:6043-6047, 1981.
2. Heintz NH, Milbrandt J, Greisen KS, Hamlin JL: Cloning of the initiation region of a mammalian chromosomal replicon: *Nature*, 302:439-441, 1983.
3. Milbrandt J, Azizkhan JC, Griesen K, Hamlin JL: Organization of a Chinese hamster ovary dihydrofolate reductase gene identified by phenotypic rescue. *Mol Cell Biol*, 3:1266-1273, 1983.
4. Milbrandt J, Azizkhan JC, Hamlin JL: Amplification of a cloned Chinese hamster dihydrofolate reductase gene after transfer into a dihydrofolate reductase-deficient cell line. *Mol Cell Biol*, 3:1274-1282, 1983. PMID:370118.
5. Hamlin JL, Milbrandt JD, Heintz NH, Azizkhan JC. DNA sequence amplification in mammalian cells. *Int Rev Cytol*, 90:31-82, 1984. Review. PMID:6389416.
6. Milbrandt J: Nerve growth factor rapidly induces c-fos mRNA in PC12 rat pheochromocytoma cells. *Proc Natl Acad Sci USA*, 83:4789-4793, 1986. PMID:323827.
7. Wice BM, Milbrandt J, Glaser L: Control of muscle differentiation in BC<sub>3</sub>H1 cells by fibroblast growth factor and vanadate. *J Biol Chem*, 262:1810-1817, 1987. PMID:323827.

8. Majack RA, Milbrandt J, Dixit VM: Induction of thrombospondin mRNA levels occurs as an immediate primary response to PDGF. *J Biol Chem*, 262:8821-8825, 1987.
9. Rotwein P, Pollack KM, Watson M, Milbrandt J: Insulin-like growth factor gene expression during rat embryonic development. *Endocrinology*, 121:2141-2144, 1987. PMID:3678142.
10. Milbrandt J: A nerve growth factor induced gene encodes a possible transcriptional regulatory factor. *Science*, 238:797-799, 1987. PMID:3672127.
11. Milbrandt J: Nerve growth factor rapidly induces a gene homologous to members of the steroid receptor gene family. *Neuron*, 1:183-188, 1988. PMID:3272167.
12. Rotwein P, Burgess S, Milbrandt J, Krause J: Differential expression of insulin-like growth factor genes in the rat central nervous system. *Proc Natl Acad Sci USA*, 85:265-269, 1988. PMCID:279525.
13. Changelian PS, Feng P, King TC, Milbrandt J: Structure of the NGFI-A gene and detection of upstream sequences responsible for its transcriptional induction by nerve growth factor. *Proc Natl Acad Sci USA*, 86:377-381, 1989. PMCID:286468.
14. Watson MA and Milbrandt J: The NGFI-B gene, a transcriptionally inducible member of the steroid receptor gene superfamily: Genomic structure and expression in rat brain after seizure induction. *Mol Cell Biol*, 9(10):4213-4219, 1989. PMCID:362500.
15. Day ML, Fahrner TJ, Aykent S, and Milbrandt J: The zinc finger protein NGFI-A exists in both nuclear and cytoplasmic forms in NGF-stimulate PC12 cells. *J Biol Chem*, 265:15253-15260, 1990. PMID:2118523.
16. Mack K, Day M, Milbrandt J, Gottlieb DL: Localization of the NGFI-A protein in the rat brain. *Molec Brain Research*, 8:177-180, 1990. PMID:2169569.
17. Watson MA, Milbrandt J: Expression of the nerve growth factor-regulated NGFI-A and NGFI-B genes in the developing rat. *Development*, 110:173-183, 1990. PMID:2081458.
18. Wanaka A, Johnson EM, Jr., Milbrandt J: Localization of FGF receptor mRNA in the adult rat CNS by in situ hybridization. *Neuron*, 5:267-281, 1990. PMID:2169267.
19. Fahrner T, Carroll S and Milbrandt J: The NGFI-B protein, an inducible member of the thyroid/steroid receptor family, is rapidly modified posttranslationally. *Mol Cell Biol*, 10:6454-6459, 1990. PMCID:362922.
20. Li Y, Milner P, Chauhan A, Watson M, Hoffman R, Kodner C, Milbrandt J, and Deuel T: Cloning and expression of a developmentally regulated protein that induces mitogenic and neurite outgrowth activity. *Science*, 250:1690-1694, 1990. PMID:2270483.
21. Wanaka A, Milbrandt J, and Johnson E: Expression of FGF receptor gene in rat development. *Development*, 111:455-468, 1991. PMID:1654250.
22. Wilson TE, Fahrner TJ, Johnston M, and Milbrandt J: Identification of the DNA Binding Site for NGFI-B by Genetic Selection in Yeast. *Science*, 252:1297-1300, 1991. PMID:1925541.
23. Crosby SD, Puetz JJ, Simburger KS, Fahrner TJ, and Milbrandt J: The early response gene, NGFI-C, encodes a zinc finger transcriptional activator and is a member of the GCGGGGGCG (GSG) element binding protein family. *Mol Cell Biol*, 11:3835-3841, 1991. PMCID:361165.

24. Matheny C, Distefano PS, and Milbrandt J: Differential activation of NGF receptor and early response genes in neural crest-derived cells. *Mol Brain Res*, 13:75-81, 1992. PMID:1315920.
25. Wilson TE, Day ML, Pexton T, Padgett KA, Johnston M and Milbrandt J: In Vivo mutational analysis of the NGFI-A zinc fingers. *J Biol Chem*, 267:3718-3724, 1992. PMID:1740423.
26. Crosby SD, Veile RA, Donis-Keller H, Baraban JM, Bhat RV, Simburger K, Milbrandt J: Neural specific expression, genomic structure, and chromosomal localization of the gene encoding the zinc finger protein NGFI-C. *Proc Natl Acad Sci USA*, 89:6663, 1992. PMCID:49562.
27. Wilson TE, Paulsen RE, Padgett KA, Milbrandt J: Participation of Non-Zinc Finger Residues in DNA Binding by Two Nuclear Orphan Receptors. *Science*, 256:107-110, 1992. PMID:1314418.
28. Paulsen RE, Weaver CA, Fahrner TJ, and Milbrandt J: Domains regulating transcriptional activity of the Inducibel Orphan Receptor NGFI-B. *J Biol Chem*, 267:16491-16496, 1992. PMID:1644831.
29. Carroll SL, Silos-Santiago I, Frese SE, Ruit KG, Milbrandt J and Snider WD: Dorsal Root Ganglion Neurons Expressing *trk* Are Selectively Sensitive to NGF Deprivation *In Utero*. *Neuron*, 9:779-788, 1992. PMID:1389185.
30. Wanaka A, Carroll SL, Milbrandt J: Developmentally Regulated Expression Of Pleiotrophin, A Novel Heparin Binding Growth Factor, In The Nervous System of The Rat. *Brain Research*, 72:133-144, 1993. PMID:8453763.
31. Wilson TE, Mouw, AR, Weaver CA, Milbrandt J and Parker K: The Orphan Nuclear Receptor NGFI-B Regulates Expression of the Gene Encoding Steroid 21-hydroxylase. *Mol Cell Biol*, 13:861-868, 1993. PMCID:358969.
32. Wilson TE, Fahrner T J, and Milbrandt J: The Orphan Receptors NGFI-B and Steroidogenic Factor 1 Establish Monomer Binding as a Third Paradigm of Nuclear Receptor/DNA Interaction. *Mol Cell Biol*, 13:5794-5804, 1993. PMCID:360322.
33. Russo MW, and Milbrandt J: Transcriptional Activity of the Zinc Finger Protein NGFI-A is Influenced by its Interaction with a Cellular Factor. *Mol Cell Biol*, 13:6858-6865, 1993. PMCID:364748.
34. Wilson TE, Padgett KA, Johnston M and Milbrandt J: A Genetic Method for Defining DNA Binding Domains: Application to the Nuclear Receptor NGFI-B. *Proc Natl Acad Sci USA*, 1993; 90:9186-9190. PMCID:47527.
35. Hirata Y, Kiuchi K, Chen HC, Milbrandt J, and Guroff G: Phosphorylation of the NGFI-B DNA Binding Domain Inhibits its Ability to Bind the NBRE. *J Biol Chem*, 268:24808-24812, 1993. PMID:8227042.
36. Kotzbauer PT, Lampe PA, Estus S, Milbrandt J, and Johnson EM: Postnatal Development of Survival Responsiveness in Rat Sympathetic Neurons to LIF and CNTF. *Neuron*, 12:763-773, 1994. PMID:8161448.

37. Matheny C, Day ML, and Milbrandt J: The Nuclear Localization Signal of NGFI-A is Located within the Zinc Finger DNA Binding Domain. *J Biol Chem*, 269:8176-8181, 1994. PMID:8132543.
38. Carroll SL, Schweitzer JB, Holtzman DM, Miller ML, Sclar GM, and Milbrandt J: Elements in the 5' Flanking Sequence of the Mouse Low Affinity NGF Receptor Gene Direct Appropriate CNS, but Not PNS, Expression in Transgenic Mice. *J Neuroscience*, 15:3342-3356, 1995. PMID:7751914.
39. Lee SL, Tourtellotte LC, Wesselschmidt RL and Milbrandt J: Growth and differentiation proceeds normally in cells deficient in the immediate early gene NGFI-A. *J Biol Chem*, 270:9971-9977, 1995. PMID:7730380.
40. Swirnoff AH and Milbrandt J: The DNA Binding Specificity of NGFI-A and Related Zinc Finger Transcription Factors. *Mol Cell Biol*, 15:2275-2287, 1995. PMID:230455.
41. Lee SL, Wesselschmidt RL, Linette GP, Kanagawa O, and Milbrandt J: Unimpaired Thymic and Peripheral T Cell Death in Mice Lacking the Nuclear Receptor NGFI-B (nur77). *Science*, 269:532-535, 1995. PMID:7624775.
42. Russo MW, Severson BR and Milbrandt J: Identification of NAB1, A Repressor of NGFI-A and KROX20 Mediated Transcription. *PNAS*, 92:6873-6877, 1995. PMID:41432.
43. Hirata Y, Whelin R, Ginty DD, Xing I, Greenberg ME, Milbrandt J and Guroff G: The Induction of a Nerve Growth Factor Sensitive Kinase that Phosphorylates NGFI-B DNA Binding Domain. *J Neurochem*, 65:1780-1788, 1995. PMID:7561876.
44. Crawford PA, Sadovsky Y, Woodson K, Lee SL, and Milbrandt J: Adrenocortical Function and Regulation of the Steroid 21-Hydroxylase Gene in NGFI-B Deficient Mice. *Mol Cell Biol*, 15:4331-4336, 1995. PMID:230672.
45. Sadovsky Y, Crawford PA, Woodson K, Polish JA, Clements MA, Tourtellotte LA, Simburger K and Milbrandt J: Mice Deficient in the Orphan Receptor SF-1 Lack Adrenal Glands and Gonads, but Express p450<sub>scc</sub> in the Placenta, and have Normal Embryonic Serum Levels of Corticosteroids. *PNAS*, 92:10939-10943, 1995. PMID:40546.
46. Nakagawara A, Muramatsu T, Deuel TF, Milbrandt J, Brodeur GM: Differential Expression of Pleiotrophin and Midkine in Advanced Neuroblastomas. *Cancer Research*, 55:1792-1797, 1995. PMID:7712489.
47. Lee S, Wang Y, Milbrandt J: Unimpaired Macrophage Differentiation and Activation in Mice Lacking The Zinc Finger Transcription Factor NGFI-A. *Mol Cell Biol*, 16:4566-4572, 1996. PMID:231455.
48. Svaren J, Severson BR, Apel ED, Zimonjic DB, Popescu NC, Milbrandt J: NAB2, a co-repressor of NGFI-A (Egr-1) and Krox20, is induced by proliferative and differentiative stimuli. *Mol Cell Biol*, 16:3545-3553, 1996. PMID:231349.
49. Lee SL, Sadovsky Y, Swirnoff AH, Polish JA, Goda P, Gavriliina G and Milbrandt J: Luteinizing Hormone Deficiency and Female Infertility in Mice Lacking the Transcription Factor NGFI-A (Egr-1). *Science*, 273:1219-1221, 1996. PMID:8703054.

50. Kotzbauer PL, Lampe PA, Heuckeroth RO, Golden JP, Creedon DJ, Johnson EM, Jr, Milbrandt J: Neurturin, a relative of glial-cell-derived neurotrophic factor. *Nature*, 384:467-470, 1996. PMID:8945474.
51. Araki T and Milbrandt J: Ninjurin, a Novel Adhesion Molecule, Is Induced by Nerve Injury and Promotes Axonal Growth. *Neuron*, 17:353-361, 1996. PMID:8780658.
52. Woodson KG, Crawford PA, Sadovsky Y, Milbrandt J: Characterization of the promoter of SF-1, an orphan nuclear receptor required for adrenal and gonadal development. *Mol Endoc*, 11:117-126, 1997. PMID:9013759.
53. Svaren J, Apel ED, Simburger KS, Jenkins NA, Gilbert DJ, Copeland NA, Milbrandt J: The *Nab2* and *Stat6* Genes Share a Common Transcription Termination Region. *Genomics*, 41:33-39, 1997. PMID:9126479.
54. Creedon DJ, Tansey MG, Baloh RH, Osborne PA, Lampe PA, Fahrner TJ, Heuckeroth RO, Milbrandt J, Johnson EM Jr: Neurturin shares receptors and signal transduction pathways with glial cell line-derived neurotrophic factor. *PNAS*, 94:7018-7023, 1997. PMID:21277.
55. Baloh RH, Tansey MG, Golden JP, Creedon DJ, Heuckeroth RO, Keck CL, Zimonjic DB, Popescu NC, Johnson EM Jr, Milbrandt J: TrnR2, a novel receptor which mediates Neurturin and GDNF signaling through Ret. *Neuron*, 18:793-802, 1997. PMID:9182803.
56. Crawford PA, Sadovsky Y and Milbrandt J: The nuclear receptor steroidogenic factor-1 directs embryonic stem cells toward the steroidogenic lineage. *Mol Cell Biol*, 17:3997-4006. 1997. PMID:232252.
57. Heuckeroth RO, Kotzbauer P, Copeland N, Gilbert DJ, Jenkins N, Zimonjic DB, Popescu NC, Johnson EM, Milbrandt J: Neurturin, A Novel Neurotrophic Factor, is Localized to Mouse Chromosome 17 and Human Chromosome 19p13.3. *Genomics*, 44:137-140, 1997. PMID:9286710.
58. Araki T, Zimonjic DB, Popescu NC, Milbrandt J: Mechanism of homophilic binding mediated by ninjurin, a novel widely expressed adhesion molecule. *J Biol Chem*, 272:21373-21380, 1997. PMID:9261151.
59. Katagiri Y, Hirata Y, Milbrandt J, and Guroff G: Differential Regulation of the Transcriptional Activity of the Orphan Nuclear Receptor NGFI-B by Membrane Depolarization and Nerve Growth Factor. *J Biol Chem*, 272:31278-31284, 1997. PMID:9395454.
60. Gorodinsky A, Zimonjic DB, Popescu NC, and Milbrandt J: Assignment of the GDNF family receptor alpha (GDNFRA) to human chromosome band 10q26 by *in situ* hybridization. *Cytogenetics and Cell Genetics*, 78:289-290, 1997. PMID:9465905.
61. Swirnoff AH, Apel ED, Svaren J, Severson BR, Zimonjic DB, Popescu NC, and Milbrandt J: Nab1, a corepressor of NGFI-A (Egr-1), contains an active transcriptional repression domain. *Mol Cell Biol*, 18:512-524, 1998. PMID:115883.
62. Ratovitski EA, Kotzbauer PT, Milbrandt J, Lowenstein CJ, and Burrow CR: Midkine Induces Wilms' Tumor Cell Proliferation and Binds to a High Affinity Signalling Receptor Associated with JAK Tyrosine Kinases. *J Biol Chem*, 273:3654-3660, 1998. PMID:9452495.
63. Milbrandt J, Sauvage FJ, Fahrner TJ, Baloh RH, Leitner ML, Tansey MG, Lampe PA, Heuckeroth RO, Kotzbauer PT, Simburger KS, Golden JP, Davies JA, Vejsada R, Kato AC,

- Hynes M, Sherman D, Nishimura M, Wang LC, Vandlen R, Moffat B, Klein RD, Poulsen K, Gray C, Garces A, Henderson CE, Phillips HS, Johnson EM, Jr: Persephin, a novel neurotrophic factor related to GDNF and Neurturin. *Neuron*, 20: 245-253, 1998. PMID:9491986.
64. Crawford PA, Dorn C, Sadovsky Y, and Milbrandt J: Nuclear Receptor DAX-1 recruits nuclear receptor co-repressor N-CoR to steroidogenic factor-1. *Mol Cell Biol*, 18:2949-2956, 1998. PMCID:110674.
65. Baloh RH, Gorodinsky A, Golden JP, Tansey MG, Keck CL, Popescu NC, Johnson EM, Jr, Milbrandt J: GFR $\alpha$ 3, a novel orphan receptor in the GDNF/NTN/PSP receptor family. *PNAS*, 95:5801-5806, 1998. PMCID:20460.
66. Zaiou M, Azrolan N, Hayek T, Wang H, Wu L, Haghpassand M, Cizman B, Madaio MP, Milbrandt J, Marsh JB, Breslow JL and Fisher EA: The full induction of human apoprotein A-I gene expression by the experimental nephrotic syndrome in transgenic mice depends on cis-acting elements in the proximal 256 base-pair promoter region and the trans-acting factor early growth response factor 1. *J Clin Invest*, 101:1699-1707, 1998. PMCID:508752.
67. Yan SF, Zou YS, Gao Y, Zhai C, Mackman N, Lee SL, Milbrandt J, Pinsky D, Kisiel W, Stern D: Tissue factor transcription driven by Egr-1 is a critical mechanism of murine pulmonary fibrin deposition in hypoxia. *PNAS*, 14:8298-8303, 1998. PMCID:20970.
68. Horger B, Nishimura M, Armanini M, Wang LC, Poulsen K, Rosenblad C, Kirik D, Moffat B, Simmons L, Johnson E, Milbrandt J, Rosenthal A, Bjorklund A, Vandlen R, Hynes M, and Phillips H: Neurturin exerts potent actions on survival and function of midbrain dopaminergic neurons. *J Neuroscience*, 18:4929-4937, 1998. PMID:9634558.
69. Golden JP, Baloh RH, Kotzbauer PT, Lampe PA, Osborne PA, Milbrandt J, Johnson EM, Jr: Expression of NTN, GDNF and their receptors in the adult mouse CNS. *J Comp Neurol*, 398:139-150, 1998. PMID:9703032.
70. Heuckeroth RO, Lampe PA, Johnson Jr. EM, Milbrandt, J: Neurturin and GDNF promote proliferation and survival of enteric neuron and glial progenitors in vitro. *Dev Biol*, 200:116-129, 1998. PMID:9698461.
71. Kilduff TS, Vugrinic C, Lee SL, Milbrandt J, Mikkeisen JD, O'Hara BF, Haller HC: Characterization of the circadian system of NGFI-A and NGFI-A/NGFI-B deficient mice. *J Biol Rhythms*, 18:4929-4937, 1998. PMID:9711509.
72. Enomoto H, Araki T, Jackman A, Heuckeroth RO, Snider WD, Johnson EM, Jr and Milbrandt J: GFR $\alpha$ 1 Deficient Mice Have Deficits in the Enteric Nervous System and Kidneys. *Neuron*, 21:317-324, 1998. PMID:9728913.
73. Qu Z, Wolfrain LA, Svaren J, Ehrengruber MU, Davidson N, Milbrandt J: The transcriptional corepressor NAB2 inhibits NGF-induced differentiation of PC12 cells. *J Cell Biol*, 142:1075-1082, 1998. PMCID:2132876.
74. Tourtellotte WG, Tourtellotte Cabalka LM, Gavriline G, Gorodinsky T, Milbrandt J: Sensory Ataxia and Muscle Spindle Agenesis in Mice Lacking the Transcription Factor Egr3. *Nature Genetics*, 20:87-91, 1998. PMID:9731539.



75. Svaren J, Sevetson BR, Golda T, Stanton J, Swirnoff AH, Milbrandt J: Novel Mutants of NAB Corepressors Enhance Activation by Egr Transactivators. *EMBO J*, 17:6010-6019, 1998. PMID:1170927.
76. Srivastave S, Weitzmann MN, Kimble RB, Rizzo M, Zahner M, Milbrandt J, Ross FP, Pacifici R: Estrogen blocks M-CSF gene expression and osteoclast formation by regulating phosphorylation of Egr-1 and its interaction with Sp-1. *J Clin Invest*, 102:1850-1859, 1998. PMID:509135.
77. Baloh RH, Tansey MG, Lampe PA, Fahrner TJ, Enomoto H, Simburger KS, Leitner ML, Araki T, Johnson EM Jr, Milbrandt J: Artemin, a Novel Member of the GDNF Ligand Family, Supports Peripheral and Central Neurons and Signals through the GFR $\alpha$ 3-RET Receptor Complex. *Neuron*, 21:1291-1302, 1998. PMID:9883723.
78. O'Donovan KJ, Tourtellotte WG, Milbrandt J, Baraban JM: The Egr family of transcription-regulatory factors: progress at the interface of molecular and systems neuroscience. *Trends Neurosci*, 22:167-173, 1999.
79. Heuckeroth RO, Enomoto H, Grider JR, Golden JP, Hanke JA, Jackman A, Molliver DC, Bardgett ME, Snider WD, Johnson EM, Jr, Milbrandt J: Gene targeting reveals a critical role for Neurturin in the development and maintenance of enteric, sensory and parasympathetic neurons. *Neuron*, 22:253-263, 1999. PMID:10069332.
80. Jomary C, Thomas M, Grist J, Milbrandt J, Neal MJ, Jones SE: Expression patterns of neurturin and its receptor components in developing and degenerative mouse retina. *Invest Ophthalmol Vis Sci*, 40(3):568-74, 1999. PMID:10067959.
81. Warner LE, Svaren J, Milbrandt J, Lupski JR: Functional consequences of mutations in the early growth response 2 gene (EGR2) correlate with severity of human myelinopathies. *Hum Mol Genet*, Jul;8(7):1245-1251, 1999. PMID:10369870.
82. Davies JA, Millar CB, Johnson EM Jr, Milbrandt J : Neurturin: an autocrine regulator of renal collecting duct development. *Dev Genet*, 24(3-4):284-92, 1999. PMID:10322636.
83. Golden JP, DeMaro JA, Osborne PA, Milbrandt J, Johnson EM, Jr. Expression of Neurturin, GDNF, and GDNF family receptor mRNA in the developing and mature mouse. *Exp Neurol*, 158:504-528, 1999. PMID:1015156.
84. Hashino E, Johnson EM, Jr, Milbrandt J, Shero M, Salvi RJ, Cohan CS. Multiple actions of neurturin correlate with spatio-temporal patterns of Ret expression in developing chick cranial ganglion neurons. *J Neurosci*, 19:8476-8486, 1999. PMID:10493748.
85. Leitner ME, Lampe PA, Milbrandt J, Johnson EM, Jr. Analysis of the retrograde transport of glial cell lined neurotrophic factor (GDNF), neurturin, and persephin suggest that in vivo signaling for the GDNF family is GFR $\alpha$  coreceptor-specific. *J Neurosci*, 19:9322-9331, 1999. PMID:10531437.
86. Tourtellotte WG, Nagarajan R, Auyeung A, Mueller C, Milbrandt J: Infertility associated with incomplete spermatogenic arrest and oligozoospermia in Egr4-deficient mice. *Development*, 126:5061-5071, 1999. PMID:10529423.

87. Abdulkadir SA, Carvalhal GF, Kaleem Z, Kisiel W, Humphrey PA, Catalona WJ, Milbrandt J. Tissue factor of expression and angiogenesis in human prostate carcinoma. *Human Pathol*, 31(4):443-447, 2000. PMID:10821491.
88. Araki T, Milbrandt J. Ninjurin2, a novel homophilic adhesion molecule, is expressed in mature sensory and enteric neurons and promotes neurite outgrowth. *J Neurosci*, 20:187-195, 2000. PMID:10627596.
89. Severson BR, Svaren J, Milbrandt J. A novel activation function for NAB proteins in Egr-dependent transcription of the luteinizing hormone  $\beta$  (LH $\beta$ ) gene. *J Biol Chem*, 275:9749-9757, 2000. PMID:10734128.
90. Baloh RH, Tansey MG, Johnson Jr EM, Milbrandt J. Functional mapping of receptor specificity domains of glial cell line-derived neurotrophic factor (GDNF) family ligands and production of GDNF family receptor  $\alpha$ -component-RET-specific agonists. *J Biol Chem*, 275:3412-3420, 2000. PMID:10652334.
91. Tansey MG, Baloh RH, Milbrandt J, Johnson Jr EM. GFR $\alpha$ -mediated localization of RET to lipid rafts is required for effective downstream signaling, differentiation, and neuronal survival. *Neuron*, 25(3):611-623, 2000. PMID:10774729.
92. Wei F, Xu ZC, Qu Z, Milbrandt J, Zhuo M. Role of EGR1 in hippocampal synaptic enhancement induced by tetanic stimulation and amputation. *J Cell Biol*, 149:1325-1334, 2000. PMCID:2175137.
93. Tourtellotte WG, Nagarajan R, Bartke A, Milbrandt J. Functional compensation by Egr4 in Egr1-dependent luteinizing hormone regulation and leydig cell steroidogenesis. *Mol Cell Biol*, 20:5261-5268, 2000. PMCID:85975.
94. Ho TW, Bristol LA, Coccia C, Li Y, Milbrandt J, Johnson E, Jin L, Bar-Peled O, Griffin JW, Rothstein JD. TGF $\beta$  trophic factors differentially modulate motor axon outgrowth and protection from excitotoxicity. *Exp Neurol*, 161:664-675, 2000. PMID:10686085.
95. Baloh RH, Enomoto H, Johnson EM Jr., Milbrandt J. The GDNF family ligands and receptors – implications for neural development. *Curr Opin Neurobiol*, 10:103-110, 2000. PMID:10679429.
96. Zaidi AU, Enomoto H, Milbrandt J, Roth KA. Dual fluorescent in situ hybridization and immunohistochemical detection with tyramide signal amplification. *J Histochemistry & Cytochemistry*, 48:1369-1375, 2000. PMID:10990490.
97. Svaren J, Ehrig T, Abdulkadir SA, Ehrenguber MU, Watson MA, Milbrandt J. EGR1 Target Genes in Prostate Carcinoma Cells Identified by Microarray Analysis. *J Biol Chem*, 275:38524-38531, 2000. PMID:10984481.
98. Enomoto H, Heuckeroth RO, Golden JP, Johnson EM, Milbrandt J. Development of cranial parasympathetic ganglia requires sequential actions of GDNF and neurturin. *Development*, 127:4877-89, 2000. PMID:11044402.
99. Abdulkadir SA, Qu Z, Garabedian E, Song SK, Peters TJ, Svaren J, Carbone JM, Naughton CK, Catalona WJ, Ackerman JJ, Gordon JI, Humphrey PA, Milbrandt J. Impaired prostate tumorigenesis in Egr1-deficient mice. *Nat Med*, 7:101-07, 2001. PMID:11135623.

100. Das A, Chendil D, Dey S, Mohiuddin M, Modiuddin M, Milbrandt J, Rangnekar VM, Ahmed MM. Ionizing radiation down-regulated p53 protein in primary Egr-1<sup>-1</sup> mouse embryonic fibroblast cells causing enhanced resistance to apoptosis. *J Biol Chem*, 276:3279-3286, 2001. PMID:11035041.
101. Encinas M, Tansey mG, Tsui-Pierchala BA, Comella JX, Milbrandt J, Johnson EM Jr. c-Src is required for glial cell line-derived neurotrophic factor (GDNF) family ligand-mediated neuronal survival via a phosphatidylinositol-3 kinase (PI-3K)-dependent pathway. *J Neurosci*, 21:1464-1472, 2001. PMID:11222636.
102. Ehrig T, Abdulkadir SA, Dintzis SM, Milbrandt J, Watson MA. Quantitative amplification of genomic DNA from histological tissue sections after staining with nuclear dyes and alser capture microdissection. *J Mol Diagn*, 3:22-25, 2001. PMCID:1907345.
103. Jomary C, Grist J, Milbrandt J, Neal MJ, Jones SE. Epitope-tagged recombinant AAV vectors for expressing neurturin and its receptor in retinal cells. *Mol Vis*, 7:36-41, 2001. PMID:11239244.
104. Silverman ES, DeSanctis GT, Boyce J, Maclean JA, Jiao A, Green FH, Grasmann H, Milbrandt J, Drazen JM, et al. The transcription factor early growth-response factor 1 modulates tumor necrosis factor-alpha, immunoglobulin E, and airway responsiveness in mice. *Am J Respir Crit Care Med*, 163:778-785, 2001. PMID:11254538.
105. Dzialo-Hatton R, Milbrandt J, Hockett RD Jr, Weaver CT. Differential expression of fas ligand in th1 and th2 cells is regulated by early growth response gene and nf-at family members. *J Immunol*, 667:4534-4542, 2001. PMID:11254710.
106. Houston P, Campbell CJ, Svaren J, Milbrandt J, Braddock M. The transcriptional corepressor NAB2 blocks Egr-1 mediated growth factor activation and angiogenesis. *Biochem Biophys Res Commun*, 283:480-486, 2001. PMID:11327726.
107. Nagarajan R, Svaren J, Le N, Araki T, Watson M, Milbrandt J. Egr2 mutations in inherited neuropathies dominant-negatively inhibit myelin gene expression. *Neuron*, 30:355-368, 2001. PMID:11394999.
108. Tourtellotte WG, Keller-Peck C, Milbrandt J, Kucera J. The transcription factor Egr3 modulates sensory axon-myotube interactions during muscle spindle morphogenesis. *Dev Biol*, 232:388-399, 2001. PMID:11401400.
109. Araki T, Nagarajan R, Milbrandt J. Identification of genes induced in peripheral nerve after injury, expression profiling and novel gene discovery. *J Biol Chem*, 276:34131-34141, 2001. PMID:11427537.
110. Magee JA, Araki T, Patil S, Ehrig T, True L, Humphrey PA, Catalona WJ, Watson MA, Milbrandt J. Expression profiling reveals hepsin overexpression in prostate cancer. *Cancer Res*, 61:5692-5696, 2001. PMID:11479199.
111. Abdulkadir SA, Carbone JM, Naughton CK, Humphrey PA, Catalona WJ, Milbrandt J. Frequent and early loss of the EGR1 corepressor NAB2 in human prostate carcinoma. *Hum Pathol*, 32:935-939, 2001. PMID:11567222.

112. Hasino E, Shero M, Junghans D, Rohrer H, Milbrandt J, Johnson EM Jr. GDNF and neurturin are target-derived factors essential for cranial parasympathetic neuron development. *Development*, 128:3773-3782, 2001. PMID:11585803.
113. Enomoto H, Crawford PA, Gorodinsky A, Heuckeroth RO, Johnson EM Jr., Milbrandt J. RET signaling is essential for migration, axonal growth and axon guidance of developing sympathetic neurons. *Development*, 128:3963-3974, 2001. PMID:11641220.
114. Tsui-Pierchala BA, Milbrandt J, Johnson EM Jr. NGF utilizes c-Ret via a novel GFL-independent, inter-RTK signaling mechanism to maintain the trophic status of mature sympathetic neurons. *Neuron*, 33:261-273, 2002. PMID:11804573.
115. Abdulkadir SA, Magee JA, Peters TJ, Kaleem Z, Naughton CK, Humphrey PA, Milbrandt J. Conditional loss of Nkx3.1 in adult mice induces prostates intraepithelial neoplasia. *Mol Cell Biol*, 22:1495-1503, 2002. PMCID:134699.
116. Rakowicz WP, Staples CS, Milbrandt J, Brunstrom JE, Johnson EM Jr. Glial cell line-derived neurotrophic factor promotes the survival of early postnatal spinal motor neurons in the lateral and medial motor columns in slice culture. *J Neuroscience*, 22:3953-3962, 2002. PMID:12019314.
117. Nagarajan R, Le N, Mahoney H, Araki T, Milbrandt J. Deciphering peripheral nerve myelination by using Schwann cell expression profiling. *Proc Natl Acad Sci USA*, 99:8998-9003, 2002. PMCID:124412.
118. Song SK, Qu Z, Garabedian EM, Gordon JI, Milbrandt J, Ackerman JJ. Improved magnetic resonance imaging detection of prostate cancer in a transgenic mouse model. *Cancer Res*, 62:1555-1558, 2002. PMID:11888935.
119. Honma Y, Araki T, Gianino S, Bruce A, Heuckeroth RO, Johnson EM Jr., Milbrandt J. Artemin is a vascular-derived neurotrophic factor for developing sympathetic neurons. *Neuron*, 35:267-282, 2002. PMID:12160745.
120. Tsui-Pierchala B, Ahrens R, Crowder R, Milbrandt J., Johnson EM Jr. The long and short isoforms of Ret function as independent signaling complexes. *J Biol Chem*, 277:34618-34625, 2002. PMID:12091387.
121. Tsui-Pierchala BA, Encinas M, Milbrandt J, Johnson EM Jr. Lipid rafts in neuronal signaling and function. *Trends Neurosci*, 25:412-417, 2002. PMID:12127758.
122. Bettini M, Xi H, Milbrandt J, Kersh GJ. Thymocyte development in early growth response gene 1-deficient mice. *J Immunol*, 169:1713-1720, 2002. PMID:12165491.
123. Modur V, Nagarajan R, Evers BM, Milbrandt J. FOXO proteins regulate TRAIL expression: Implications for PTEN mutation in prostate cancer. *J Biological Chemistry*, 277:47928-47937, 2002. PMID:12351634.
124. Chen B, Knowles CH, Scott M, Anand P, Williams NS, Milbrandt J, Tam PK. Idiopathic slow transit constipation and megacolon are not associated with neurturin mutations. *Neurogastroenterol Motil*, 14:513-517, 2002. PMID:12358679.
125. Clements M, Duncan D, Milbrandt J. Drosophila NAB (dNAB) is an orphan transcriptional co-repressor required for correct CNS and eye development. *Developmental Dynamics*, 226:67-81, 2003. PMID:12508226.

126. Magee JA, Abdulkadir SA, Milbrandt J. Haploinsufficiency at the Nkx3.1 locus. A paradigm for stochastic, dosage-sensitive gene regulation during tumor initiation. *Cancer Cell*, 3:273-83, 2003. PMID:12676585.
127. Araki T, Milbrandt J. ZNRF proteins constitute a family of presynaptic E3 ubiquitin ligases. *J Neurosci*, 23:9385-94, 2003. PMID:14561866.
128. Song XJ, Li DQ, Farley W, Luo LH, Heuckeroth RO, Milbrandt J, Pflugfelder SC. Neuturin-deficient mice develop dry eye and keratoconjunctivitis sicca. *Invest Ophthalmol Vis Sci*, 44:4223-9, 2003. PMID:14507865.
129. Luker GD, Luker KE, Sharma V, Pica CM, Dahlheimer JL, Ocheskey JA, Fahrner TJ, Milbrandt J, Piwnica-Worms D. In vitro and in vivo characterization of a dual-function green fluorescent protein--HSV1-thymidine kinase reporter gene driven by the human elongation factor 1 alpha promoter. *Mol Imaging*, 1:65-73, 2002. PMID:12920846.
130. Ley TJ, Minx PJ, Walter MJ, Ries RE, Sun H, McLellan M, DiPersio JF, Link DC, Tomasson MH, Graubert TA, Milbrandt JD, Mardis ER, Wilson RK. A pilot study of high-throughput, sequence-based mutational profiling of primary human acute myeloid leukemia cell genomes. *Proc Natl Acad Sci*, 100:14275-80, 2003. PMCID:283582.
131. Golden JP, Milbrandt J, Johnson EM Jr. Neurturin and persephin promote the survival of embryonic basal forebrain cholinergic neurons in vitro. *Exp Neurol*, 184:447-55, 2003. PMID:14637114.
132. Encinas M, Crowder RJ, Milbrandt J, Johnson EM Jr. Tyrosine 981, a novel Ret autophosphorylation site, binds c-Src to mediate neuronal survival. *J Biol Chem*, 279:18262-69, 2004. PMID:14766744.
133. Ethier I, Beaudry G, St\_Hilaire M, Milbrandt J, Rouillard C, Levesque D. The transcription factor NGFI-B (Nur77) and retinoids play a critical role in acute neuroleptic-induced extrapyramidal effect and striatal enuropeptide gene expression. *Neuropsychopharmacology*, 29:335-46, 2004. PMID:14603264.
134. Wanigasekara Y, Airaksinen MS, Heuckeroth RO, Milbrandt J, Keast JR. Neurturin signaling via GFRalpha2 is essential for innervation of glandular but not muscle targets of sacral parasympathetic ganglion neurons. *Mol Cell Neurosci*, 25:288-300, 2004. PMID:15019945.
135. Lee CG, Cho SJ, Kang MJ, Chapoval SP, Lee PJ, Noble PW, Yehualaeshet T, Lu B, Flavell RA, Milbrandt J, Homer RJ, Elias JA. Early growth response gene 1-mediated apoptosis is essential for transforming growth factor beta1-induced pulmonary fibrosis. *J Exp Med*, 200:377-389, 2004. PMCID:2211975.
136. Young HM, Bergner AJ, Anderson RB, Enomoto H, Milbrandt J, Newgreen DF, Whittington PM. Dynamics of neural crest-derived cell migration in the embryonic mouse gut. *Developmental Biol*, 270:455-73, 2004. PMID:15183726.
137. Wilson RK, Ley TJ, Cole FS, Milbrandt JD, Clifton S, Fulton L, Fewell G, Minx P, Sun H, McLellan M, Phol C, Mardis ER. Mutational profiling in the human genome. Cold Spring Harbor Symposium Quat Biol, 68:23-29, 2003. PMID:15338599.

138. Schalch P, Patejunas G, Retuerto M, Sarateanu S, Milbrandt J, Thankker G, Kim D, Carbray J, Crystal RG, Rosengart TK. Homozygous deletion of early growth response 1 gene and critical limb ischemia after vascular ligation in mice: evidence for a central role in vascular homeostasis. *J Thorac Cardiovasc Surg*, 128:595-601, 2004. PMID:15457161.
139. Jain S, Watson MA, DeBenedetti MK, Hiraki Y, Moley JF, Milbrandt J. Expression profiles provide insights into early malignant potential and skeletal abnormalities in multiple endocrine neoplasia type 2B syndrome tumors. *Cancer Res*, 64:3907-13, 2004. PMID:15173001.
140. Yan H, Bergner AJ, Enomoto H, Milbrandt J, Newgreen DF, Young HM. Neural cells in the esophagus respond to glial cell line-derived neurotrophic factor and neurturin, and are RET-dependent. *Dev Biol*, 272:118-33, 2004. PMID:15242795.
141. Crowder RJ, Enomoto H, Yang M, Johnson EM Jr, Milbrandt J. Dok-6, a novel p62 Dok family member, promotes Ret-mediated neurite outgrowth. *J Biol Chem*, 279:42072-81, 2004. PMID:15286081.
142. Araki T, Sasaki Y, Milbrandt J. Increased nuclear NAD biosynthesis and SIRT1 activation prevent axonal degeneration. *Science*, 305:1010-3, 2004. PMID:15310905.
143. Jain S, Naughton CK, Yang M, Strickland M, Vij K, Encinas M, Golden J, Gupta A, Heuckeroth R, Johnson EM Jr, Milbrandt J. Mice expressing a dominant negative Ret mutation phenocopy human Hirschsprung disease and delineate a direct role of Ret in spermatogenesis. *Development*, 131:5503-13, 2004. PMID:15469971.
144. Enomoto H, Hughes I, Golden J, Baloh RH, Yonemura S, Heuckeroth RO, Johnson EM Jr, Milbrandt J. GFRalpha1 expression in cells lacking RET is dispensable for organogenesis and nerve regeneration. *Neuron*, 44:623-36, 2004. PMID:15541311.
145. Ko SW, Vadakkan KI, Ao H, Gallitano-Mendel A, Wei F, Milbrandt J, Zhuo M. Selective contribution of Egr1 (zif/268) to persistent inflammatory pain. *J Pain*, 6:12-20, 2005. PMID:15629414.
146. Leitner ML, Wang LH, Osborne PA, Golden JP, Milbrandt J, Johnson EM Jr. Expression and function of GDNF family ligands and receptors in the carotid body. *Exp. Neurol*, 191:S68-79, 2004. PMID:15629763.
147. Le N, Nagarajan R, Wang J, Araki T, Schmidt RE, Milbrandt J. Analysis of congenital hypomyelinating Egr2<sup>Lo/Lo</sup> nerves identifies Sox2 as an inhibitor of Schwann Cell differentiation and myelination. *PNAS*, 102:2596-2601, 2005. PMCID:548989.
148. Skinner MA, Kalyanaraman S, Safford SD, Heuckeroth RO, Tourtellotte W, Goyeau D, Goodfellow P, Milbrandt J, Freemerman A. A human yeast artificial chromosome containing the multiple endocrine neoplasia type 2B Ret mutation does not induce medullary thyroid carcinoma but does support the growth of kidneys and partially rescues enteric nervous system development in Ret-deficient mice. *Am J Pathol*, 166:265-74, 2005. PMCID:16023065.
149. Le N, Nagarajan R, Wang J, Svaren J, LaPash C, Araki T, Schmidt RE, Milbrandt J. Nab proteins are essential for peripheral nervous system myelination. *Nature Neuroscience*, 8:932-40, 2005. PMID:16136673.

150. Ko SW, Ao HS, Mendel AG, Qiu CS, Wei F, Milbrandt J, Zhuo M. Transcription factor Egr-1 is required for long-term memory and anxiety. *Sheng Li Xue Bao, Acta Physiologica Sinica*, 57:421-432, 2005. PMID:16094488.
151. Kim SJ, Qu Z, Milbrandt J, Zhuo M. A transcription factor for cold sensation. *Mol Pain*, 1:11, 2005. PMCID:1079937.
152. Magee JA, Chang LW, Stormo GD, Milbrandt J. Direct, androgen receptor mediated regulation of the FKBP5 gene via a distal enhancer element. *Endocrinology*, 147:590-598, 2005. PMID:16210365.
153. Naughton CK, Jain S, Strickland AM, Gupta A, Milbrandt J. Glial cell-line derived neurotrophic factor (GDNF)-mediated RET signaling regulates spermatogonial stem cell fate. *Biol Reproduction*, 74:314-21, 2005.
154. Sarateanu CS, Retuerto MA, Beckmann JT, McGregor L, Carbray J, Patejunas G, Nayak L, Milbrandt J, Rosegart TK. An Egr-1 master switch for arteriogenesis: studies in Egr-1 homozygous negative and wild-type animals. *J Thorac Cardiovasc Surg*, 131:138-145, 2006. PMID:16399305.
155. Bermingham JR, Shearin H, Pennington J, O'Moore J, Jaegle M, Driegen S, van Zon A, Darbas A, Ozkaynak E, Ryu EJ, Milbrandt J, Meijer D. The claw paw mutation reveals a role for Lgi4 in peripheral nerve development. *Nat Neurosci*, 9:76-84, 2006. PMID:16341215.
156. Jain S, Encinas M, Johnson Jr, EM, Milbrandt J. Critical and distinct roles for key RET tyrosine docking sites in renal development. *Genes & Develop*, 20:321-33, 2006. PMCID:1361703.
157. Chang LW, Nagarajan R, Magee JA, Milbrandt J, Stormo GD. A systematic model to predict transcriptional regulatory mechanisms based on overrepresentation of transcription factor binding profiles. *Genome Res*, 16:405-13, 2006. PMCID:1415218.
158. Pierchala BA, Milbrandt J, Johnson EM Jr. Glial cell-line derived neurotrophic factor-dependent recruitment of Ret into lipid rafts enhances signaling by partitioning Ret from proteasome-dependent degradation. *J Neurosci*, 26:2777-87, 2006. PMID:16525057.
159. Wang X, Baloh RH, Milbrandt J, Garcia KC. Structure of artemin complexed with its receptor GFRalpha3: convergent recognition of glial cell line-derived neurotrophic factors. *Structure*, 14:1083-92, 2006. PMID:16765900.
160. Sasaki Y, Araki T, Milbrandt J. Stimulation of nicotinamide adenine dinucleotide biosynthetic pathways delays axonal degeneration after axotomy. *J Neurosci*, 26:8484-91, 2006. PMID:16914673.
161. Jain S, Golden JP, Wozniak D, Pehek E, Johnson Jr EM, Milbrandt J. RET is dispensable for maintenance of midbrain dopaminergic neurons in adult mice. *J Neurosci*, 26:11230-8, 2006.
162. Baloh RH, Schmidt RE, Pestronk A, Milbrandt J. Altered axonal mitochondrial transport in the pathogenesis of Charcot-Marie-Tooth disease from mitofusin 2 mutations. *J Neurosci*, 27:422-30, 2007. PMID:17215403.

163. Gustin JA, Yag M, Johnson Jr EM, Milbrandt J. Deciphering adaptor specificity in GFL-dependent Ret-mediated proliferation and neurite outgrowth. *J Neurochem*, 102:1184-94, 2007. PMID:17663753.
164. Pierchala BA, Tsui CC, Milbrandt J, Johnson EM. NGF augments the autophosphorylation of Ret via inhibition of ubiquitin-dependent degradation. *J Neurochem*, 100:1169-76, 2007. PMID:17241133.
165. Dasgupta B, Milbrandt J. Resveratrol stimulates AMP kinase activity in neurons. *PNAS*, 104:7217-22, 2007. PMCID:1855377.
166. Uesaka T, Jain S, Yonemura S, Uchiyama Y, Milbrandt J, Enomoto H. Conditional ablation of GFRalpha1 in postmigratory enteric neurons triggers unconventional neuronal death in the colon and causes a Hirschsprung's disease phenotype. *Development*, 134:2171-81, 2007. PMID:17507417.
167. Lee KW, Cobb LJ, Paharkova-Vatchkova V, Liu B, Milbrandt J, Cohen P. Contribution of the orphan nuclear receptor Nur77 to the apoptotic action of IGFBP-3. *Carcinogenesis*, 28:1653-8, 2007. PMID:17434920.
168. Mullican SE, Zhang S, Konopleva M, Ruvolo V, Andreeff M, Milbrandt J, Conneely OM. Abrogation of nuclear receptors Nr4a3 and Nr4a1 leads to development of acute myeloid leukemia. *Nature Med*, 13:730-735, 2007. PMID:17515897.
169. Baloh RH, Salavaggione E, Milbrandt J, Pestronk A. Familial parkinsonism and ophthalmoplegia from a mutation in the mitochondrial DNA helicase twinkle. *Arch Neurol*, 64:998-1000, 2007. PMID:17620490.
170. Gallitano-Mendel A, Wozniak DF, Pehek EA, Milbrandt J. Mice lacking the immediate early gene Egr2 respond to the anti-aggressive effects of clozapine yet are relatively resistant to its sedating effects. *Neuropsychopharmacology*, 33:1266-75, 2007. PMID:17637609.
171. Zhang B, Jain S, Song H, Fu M, Heuckeroth RO, Erlich JM, Jay PY, Milbrandt J. Mice lacking sister chromatid cohesion protein PDS5B exhibit developmental abnormalities reminiscent of Cornelia de Lang syndrome. *Development*, 134:3191-3201, 2007. PMID:17652350.
172. Gallitano-Mendel A, Izumi Y, Tokuda K, Zorumski CF, Howell MP, Muglia LJ, Wozniak DF, Milbrandt J. The immediate early gene Egr2 mediates adaptation to stress and novelty. *J Neurosci*, 148:633-43, 2007. PMCID:2597331.
173. Ryu EJ, Wang JY, Le N, Baloh RH, Gustin JA, Schmidt RE, Milbrandt J. Misexpression of Pou3f1 results in peripheral nerve hypomyelination and axonal loss. *J Neurosci*, 27:11552-9, 2007. PMID:17959798.
174. Revollo JR, Korner A, Mills KF, Satoh A, Wang T, Garten A, Dasgupta B, Sasaki Y, Wolberger C, Townsend RR, Milbrandt J, Kiess W, Imai S. Nampt PBEF/Visfatin regulates insulin secretion in beta cells as a systemic NAD biosynthetic enzyme. *Cell Metab*, 6:363-75, 2007. PMCID:2098698
175. Press C and Milbrandt J. Nmnat delays axonal degeneration caused by mitochondrial and oxidative stress. *J Neurosci*, 28:4861-71, 2008. PMCID:PMC2678678.



176. Brantley MA Jr, Jain S, Barr EE, Johnson EM Jr, Milbrandt J. Neurturin-mediated ret activation is required for retinal function. *J Neurosci*, 28:4123-35, 2008. PMID:PMC2704905.
177. Ryu E, Yang M, Gustin J, Chang L, Freimuth R, Nagarajan R, Milbrandt J. Analysis of peripheral nerve expression profiles identifies a novel myelin glycoprotein Mp11. *J Neurosci*, 23:7563-73, 2008. PMID:PMC2643251.
178. Chen Y, Stevens B, Chang J, Milbrandt J, Barres BA, Hell JW. NS21: Re-defined and modified supplement B27 for neuronal cultures. *J Neurosci Methods*, 171:239-47, 2008. PMID:PMC2678682.
179. Encinas M, Rozen EJ, Dolcet X, Jain S, Comella JX, Milbrandt J, Johnson EM Jr. Analysis of Ret knockin mice reveals a critical role for IKKs, but not PI 3-K, in neurotrophic factor-induced survival of sympathetic neurons. *Cell Death Differ*, 15:1510-21, 2008. PMID:PMC2646785.
180. Press C, Milbrandt J. The purine nucleosides adenosine and guanosine delay axonal degeneration in vitro. *J Neurochem*, 109:595-602, 2009. PMID:2682787.
181. Dasgupta B, Milbrandt J. AMP-activated protein kinase phosphorylates retinoblastoma protein to control mammalian brain development. *Dev Cell*, 16:256-70, 2009. PMID:PMC2662481.
182. Baloh, RH, Strickland A, Ryu E, Le N, Fahrner T, Yang M, Nagarajan R, Milbrandt J. Congenital hypomyelinating neuropathy with lethal conduction failure in mice carrying the Egr2 I268N mutation. *J Neurosci*, 29:2312-21, 2009. PMID:PMC2679588.
183. Sasaki Y, Vohr BP, Lund FE, Milbrandt J. Nicotinamide mononucleotide adenyl transferase-mediated axonal protection requires enzymatic activity but not increased levels of neuronal nicotinamide adenine dinucleotide. *J Neurosci*, 29:5525,35, 2009. PMID:PMC3162248.
184. Miller B, Press C, Daniels RW, Sasaki Y, Milbrandt J, Diantonio A. A dual leucine kinase-dependent axon self-destruction program promotes Wallerian degeneration. *Nat Neurosci*, 12:387-9, 2009. PMID:PMC2696160.
185. Zhang B, Chang J, Fu M, Huang J, Kashyap R, Salavaggione E, Jain S, Shashikant K, Deardorff MA, Giovannucci Uzielli ML, Dorsett D, Beebe DC, Jay PY, Heuckeroth RO, Krantz I, Milbrandt J. Dosage effects of cohesion regulatory factor PDS5 on mammalian development: implications for cohesinopathies. *PLOS One*, 4:1-17, 2009. PMID:PMC2672303.
186. Sasaki Y, Vohra BP, Baloh RH, Milbrandt J. Transgenic mice expressing the Nmnat1 protein manifest robust delay in axonal degeneration in vivo. *J Neurosci*, 29:6526-34, 2009. PMID:PMC2697066.
187. Chang J, Baloh RH, Milbrandt J. The NIMA-family kinase Nek3 regulates microtubule acetylation in neurons. *J Cell Sci*, 122:2274-82, 2009. PMID:PMC2723145.
188. Song H, Zhang B, Watson MA, Humphrey PA, Lim H, Milbrandt J. Loss of Nkx3.1 leads to the activation of discrete downstream target genes during prostate tumorigenesis. *Oncogene*, 28:3307-19, 2009. PMID:PMC2746257.

189. Bhattacharyya S, Wei J, Melichian DS, Milbrandt J, Takehara K, Varga J. The transcriptional cofactor nab2 is induced by tgf-Beta and suppresses fibroblast activation: physiological roles and impaired expression in scleroderma. *PLoS One*, 4:E7620, 2009. PMID:PMC2768752.
190. Canty AJ, Dietze J, Harvey M, Enomoto H, Milbrandt J, Ibanez CF. Regionalized loss of parvalbumin interneurons in the cerebral cortex of mice with deficits in Gfr{alpha}1 signaling. *J Neurosci*, 29:10695-705, 2009. NIHSID:271886.
191. Luo W, Enomoto H, Rice FL, Milbrandt J, Ginty DD. Molecular identification of rapidly adapting mechanoreceptors and their developmental dependence on ret signaling. *Neuron*, 64:841-56, 2009. PMID:PMC2813518.
192. Kaneda MM, Sasaki Y, Lanza GM, Milbrandt J, Wicklin e SA. Mechanisms of nucleotide trafficking during siRNA delivery to endothelial cells using perfluorocarbon nanoemulsions. *Biomaterials*,31:3079-86, 2010. PMID: PMC2827659.
193. Jain S, Knoten A, Hoshi M, Wang H, Vohra B, Heuckeroth RO, Milbrandt J. Organotypic specificity of key RET adaptor-docking sites in the pathogenesis of neurocristopathies and renal malformations in mice. *J Clin Invest*, 120:778-90, 2010. PMID:PMC2827965.
194. Golden JP, Hoshi M, Nassar MA, Enomoto H, Wood JN, Milbrandt J, Gereau RW 4<sup>th</sup>, Johnson EM Jr, Jain S. RET signaling is required for survival and normal function of nonpeptidergic nociceptors. *J Neurosci*, 30:3983-94, 2010. PMID:PMC2850282.
195. Misko A, Jiang S, Wegorzewska I, Milbrandt J, Baloh RH. Mitofusion 2 is necessary for transport of axonal mitochondria and interacts with the Miro/Milton complex. *J Neurosci*, 30:4232-4940, 2010. PMID:PMC285190.
196. Sidorova YA, Matlik K, Paveliev M, Lindahl M, Piranen E, Milbrandt J, Arumae U, Saarna M, Bespalov MM. Persephin signaling through GFRalpha: the potential for the treatment of Parkinson's disease. *Mol Cell Neurosci*, 44:223-232, 2010. **PMID:20350599**.
197. Vohra BP, Sasaki Y, Miller BR, Chang J, DiAntonio A, Milbrandt J. Amyloid precursor protein cleavage-dependent and -independent axonal degeneration programs share a common nicotinamide mononucleotide adenylytransferase 1-sensitive pathway. *J Neurosci*, 30:13729-13738, 2010. PMID:PMC3104322.
198. Sasaki Y, Milbrandt J. Axonal degeneration is blocked by nicotinamide mononucleotide adenylytransferase (NMNAT) protein transduction into transected axons. *J Biol Chem*, 2010. PMID:PMC3009846.
199. Chang J, Zhang B, Heath H, Galjart N, Wang X, Milbrandt J. Nicotinamide adenine dinucleotide (NAD)-regulated DNA methylation alters CCCTC-binding factor (CTCF)/cohesion binding and transcription at the BDNF locus. *Proc Natl Acad Sci USA*, 107:21836-21841, 2010. PMID:PMC3003122.
200. Viader A, Golden JP, Baloh RH, Schmidt RE, Hunter DA, Milbrandt J. Schwann cell mitochondrial metabolism supports long-term axonal survival and peripheral nerve function. *J Neurosci*, 31:10128-10140, 2011. PMID:PMC3147283.

201. Gerdt J, Sasaki Y, Vohra B, Marasa J, Milbrandt J. Imaged-based screening identifies novel roles for I $\kappa$ B kinase and glycogen synthase kinase 3 in axonal degeneration. *J Biol Chem*, 286:28011-28018, 2011. PMID:PMC3151046.
202. Beirowski B, Gustin J, Armour SM, Yamamoto H, Viader A, North BJ, Michan S, Baloh RH, Golden JP, Schmidt RE, Sinclair DA, Auwerx J, Milbrandt J. Sir-two-homolog 2 (Sirt2) modulates peripheral myelination through polarity protein Par-3/atypical protein kinase C (aPKC) signaling. *Proc Natl Acad Sci USA*, 108:E952-961, 2011. PMID:PMC3203793.
203. Verghese PB, Sasaki Y, Yang D, Stewart F, Sabar F, Finn MB, Wroge CM, Mennerick S, Neill JJ, Milbrandt J, Holtzman DM. Nicotinamide mononucleotide adenylyl transferase 1 protects against acute neurodegeneration in developing CNS by inhibiting excitotoxic-necrotic cell death. *Proc Natl Acad Sci USA*, 108:19054-19059, 2011. PMID:PMC3223466.
204. Viader A, Wright-Jin EC, Vohra BP, Heuckeroth RO, Milbrandt J. Differential regional and subtype-specific vulnerability of enteric neurons to mitochondrial dysfunction. *PLoS One*, 6:e27727, 2011. PMID:PMC3218017.
205. Viader A, Chang LW, Fahrner T, Nagarajan R, Milbrandt J. MicroRNAs modulate Schwann Cell response to nerve injury by reinforcing transcriptional silencing of dedifferentiation-related genes. *J Neurosci*, 31:17358-17369, 2011, PMID:PMC3388739.
206. Zhang Y, Bekku Y, Dzhashvili Y, Armenti S, Meng X, Sasaki Y, Milbrandt J, Salzer JL. Assembly and maintenance of nodes of ranvier rely on distinct sources of proteins and targeting mechanisms. *Neuron*, Jan 12;73(1):92-107, 2012. PMID:PMC3448493.
207. Misko AL, Sasaki Y, Tuck E, Milbrandt J, Baloh RH. Mitofusin2 mutations disrupt axonal mitochondrial positioning and promote axon degeneration. *J Neurosci*, Mar 21;32(12):4145-55, 2012. PMID:PMC3319368.
208. Bhattacharya MR, Gerdt J, Naylor SA, Royse EX, Ebstein SY, Sasaki Y, Milbrandt J, DiAntonio A. A model of toxic neuropathy in Drosophila reveals a role for MORN4 in promoting axonal degeneration. *J Neurosci*, Apr 11;32(15):5054-61, 2012. PMID:PMC3336743.
209. Dasgupta B, Ju JS, Sasaki Y, Liu X, Jung SR, Higashida K, Lindquist D, Milbrandt J. The AMPK  $\beta$ 2 subunit is required for energy homeostasis during metabolic stress. *Mol Cell Biol*, Jul;32(14):2837-48, 2012. PMID:PMC3416196.
210. Shin JE, Cho Y, Beirowski B, Milbrandt J, Cavalli V, DiAntonio A. Dual leucine zipper kinase is required for retrograde injury signaling and axonal regeneration. *Neuron*, Jun 21;74(6):1015-22, 2012. PMID:PMC3383631.
211. Patel A, Harker N, Moreira-Santos L, Ferreira M, Alden K, Timmis J, Foster K, Garefalaki A, Pachnis P, Andrews P, Enomoto H, Milbrandt J, Pachnis V, Coles MC, Kioussis D, Veiga-Fernandes H. Differential RET Signaling Pathways Drive Development of the Enteric Lymphoid and Nervous Systems. *Sci Signal*, Jul 31;5(235):ra55, 2012. PMID: 22855506.
212. Shin JE, Miller BR, Babetto E, Cho Y, Sasaki Y, Qayum S, Russler EV, Milbrandt J, DiAntonio A. SCG10 is a JNK target in the axonal degeneration pathway. *Proc Natl Acad Sci USA*, Dec 109:E3696-3705, 2012. PMID:PMC3535671.

213. Zhu Y, Zhang L, Sasaki Y, Milbrandt J, Giddy JM. Protection of mouse retinal ganglion cell axons and soma from glaucomatous and ischemic injury by cytoplasmic overexpression of Nmnat1. *Invest Ophthalmol Vis Sci*, Jan 54:25-36, 2013. PMID:PMC3541947.
214. Chang LW, Viader A, Varghese N, Payton JE, Milbrandt J, Nagarajan R. An integrated approach to characterize transcription factor and microRNA regulatory networks involved in Schwann cell response to peripheral nerve injury. *BMC Genomics*, Feb 14:84, 2013. PMID: PMC3599357.
215. Viader A, Sasaki Y, Kim S, Strickland A, Workman CS, Yang K, Gross RW, Milbrandt J. Aberrant Schwann Cell Lipid Metabolism Linked to Mitochondrial Deficits Leads to Axon Degeneration and Neuropathy. *Neuron*, Mar 77:886-898, 2013. PMID:PMC3594792.
216. Scott B, Sun CL, Mao X, Yu C, Bohra BP, Milbrandt J, Crowder CM. Role of oxygen consumption in hypoxia protection by translation factor depletion. *J Exp Biol*, Jun 26, 216(Pt 12):2283-92, 2013. PMID:23531825.
217. Babetto E, Beirowski B, Russler EV, Milbrandt J, DiAntonio A. The Phr1 ubiquitin ligase promotes injury-induced axon self-destruction. *Cell Reports*, 3:1422-1429, 2013. PMID: PMC3671584.
218. Gerdtts J, Summers D, Sasaki Y, DiAntonio A, Milbrandt J. Sarm1-mediated Axon Degeneration Requires both SAM and TIR Interactions. *J Neuroscience*, 33:13569-13580, 2013. PMID: PMC3742939.
219. Sharma MK, Phillips J, Agarwal S, Wiggins WS, Shrivastava S, Koul SB, Bhattacharjee M, Houchins CD, Kalakota RR, George B, Meyer RR, Spencer DH, Lockwood CM, Nguyen TT, Duncavage EJ, Al-Kateb H, Cottrell CE, Godala S, Lokineni R, Sawant SM, Chatti V, Surampudi S, Sunkishala RR, Darbha R, Macharla S, Milbrandt JD, Virgin HW, Mitra RD, Head RD, Kulkarni S, Bredemeyer A, Pfeifer JD, Seibert K, Nagarajan R. Clinical genomicist workstion. *AMIA Summits Transl Sci Proc*, Mar 18:156-7, 2013.
220. Cottrell CE, Al-Kateb H, Bredemeyer AJ, Duncavage EJ, Spencer DH, Abel HJ, Lockwood CM, Hagemann IS, O'Guin SM, Burcea LC, Sawyer CS, Oschwald DM, Stratman JL, Sher DA, Johnson MR, Brown JT, Cliften PF, George B, McIntosh LD, Shrivastava S, Nguyen TT, Payton JE, Watson MA, Crosby SD, Head RD, Mitra RD, Nagarajan R, Kulkarni S, Seibert K, Virgin HW 4th, Milbrandt J, Pfeifer JD. Validation of a next-generation sequencing assay for clinical molecular oncology. *J Mol Diagn*, Jan;16(1):89-105, 2014. PMID: 24211365.
221. Summers D, DiAntonio A, Milbrandt J. Mitochondrial dysfunction induces Sarm1-dependent cell death in sensory neurons. *J Neurosci*, Jul 9, 34:9338-9350, 2014. PMID: 25009267. PMID: PMC4087211.
222. Beirowski B, Babetto, E, Golden, JP, Chen YJ, Yang K, Gross RW, Patti GJ, Milbrandt J. Metabolic regulator LKB1 is crucial for Schwann cell-mediated axon maintenance. *Nat Neuro*, Oct; 17(10): 1351-61 2014. PMID: 25195104.
223. Frey E, Valakh V, Karney-Grobe S, Shi Y, Milbrandt J, DiAntonio A. An in vitro assay to study induction of the regenerative state in sensory neurons. *Exp Neurol*, Jan; 263:350-63, 2015. doi: 10.1016/j.expneurol.2014.10.012. Epub 2014 Nov 4 PMID: 25447942.

224. Gerdtts J, Brace EJ, Sasaki Y, DiAntonio A, Milbrandt J. SARM1 activation triggers axon degeneration locally via NAD<sup>+</sup> destruction. *Science*, 348(6233):453-7, 2015. NIHMSID: NIHMS708673, PMCID: PMC4513950.
225. Fairfield H, Srivastava A, Ananda G, Liu R, Kircher M, Lakshminarayana A, Harris BS, Karst SY, Dionne LA, Kane CC, Curtain M, Berry ML, Ward-Bailey PF, Greenstein I, Byers C, Czechanski A, Sharp J, Palmer K, Gudis P, Martin W, Tadenev A, Bogdanik L, Pratt CH, Chang B, Schroeder DG, Cox GA, Cliften P, Milbrandt J, Murray S, Burgess R, Bergstrom DE, Donahue LR, Hamamy H, Masri A, Santoni FA, Makrythanasis P, Antonarakis SE, Shendure J, Reinholdt LG. Exome sequencing reveals pathogenic mutations in 91 strains of mice with Mendelian disorders. *Genome Res*, Jul;25(7):948-57, 2015. doi: 10.1101/gr.186882.114. Epub 2015 Apr 27. PMID: 25917818.
226. Sasaki Y, Margolin Z, Borgo B, Havranek JJ, Milbrandt J. Characterization of Leber Congenital Amaurosis-associated NMNAT1 Mutants. *J Biol. Chem*, 290(28):17228-38, 2015. PMID: 26018082 PMCID: PMC4498062.
227. Goyal MS, Venkatesh S, Milbrandt J, Gordon JI, Raichle ME. Feeding the brain and nurturing the mind: Linking nutrition and the gut microbiota to brain development. *Proc Natl Acad Sci U S A*, Nov; 17;112(46):14105-12, 2015. doi: 10.1073/pnas.1511465112. PMID:26578751.
228. Gerdtts J, Summers D, Milbrandt J, DiAntonio, A. Axon self-destruction: new links among SARM1, MAPKs, and NAD<sup>+</sup> metabolism. *Neuron*, Feb; 3;89(3):449-60, 2016. doi: 10.1016/j.neuron.2015.12.023. Review. PMID:26844829.
229. Ippolito JE, Brandenburg MW, Ge X, Crowley JR, Kirmess KM, Som A, D'Avignon DA, Arbeit JM, Achilefu S, Yarasheski KE, Milbrandt J. Extracellular pH Modulates Neuroendocrine Prostate Cancer Cell Metabolism and Susceptibility to the Mitochondrial Inhibitor Niclosamide. *PLoS One*, Jul 20;11(7):e0159675. doi: 10.1371/journal.pone.0159675. eCollection 2016. PMID: 27438712.
230. Kurowska Z, Kordower JH, Stoessl AJ, Burke R, Brundin P, Yue Z, Brady ST, Milbrandt J, Trapp BD, Sherer TB, Medicetty S. Is Axonal Degeneration a Key Early Event in Parkinson's Disease? *J Parkinsons Dis*, Oct 19;6(4):703-707, 2016 PMID: 27497486.
231. Musiek ES, Xiong DD, Patel T, Sasaki Y, Wang Y, Bauer AQ, Singh R, Finn SL, Culver JP, Milbrandt J, Holtzman DM. Nmnat1 protects neuronal function without altering phospho-tau pathology in a mouse model of tauopathy. *Ann Clin Transl Neurol*, May 6;3(6):434-42, 2016. doi: 10.1002/acn3.308. eCollection 2016 Jun. PMID: 27547771.
232. Kim S, Maynard J, Strickland A, Burlingame A, Milbrandt J. Schwann cell O-GlcNAc glycosylation is required for myelin maintenance and axon integrity. *J Neurosci*, 36(37):9633-46, 2016. PMID: 27629714.
233. Bhattacharya MR, Geisler S, Pittman SK, Doan RA, Wehl CC, Milbrandt J, DiAntonio A. TMEM 184b promotes axon degeneration and neuromuscular junction maintenance. *J Neurosci*, 36(17):4681-9, 2016. PubMed [journal] PMID:27122027; PMCID: PMC4846669.
234. Summers DW, Gibson DA, DiAntonio A, Milbrandt J. SARM1-specific motifs in the TIR domain enable NAD<sup>+</sup> loss and regulate injury-induced SARM1 activation. *PNAS USA*, 113(41): E6271-E6280, 2016. PubMed [journal] PMID:27671644; PMCID: PMC5068253.

235. Sasaki Y, Nakagawa T, Mao X, DiAntonio A, Milbrandt J. NMNAT1 inhibits axon degeneration via blockade of SARM1-mediated NAD<sup>+</sup> depletion. *eLife*, Oct 13;5 pii: e19749, doi: 10.7554/eLife.19749, 2016. PMID:27735788: PMCID: PMC5063586.
236. Geisler S, Doan RA, Strickland A, Huang X, Milbrandt J, DiAntonio A. Prevention of vincristine-induced peripheral neuropathy by genetic deletion of SARM1 in mice. *Brain: a Journal of Neurology*, Dec. 139(Pt 12):3092-3108, 2016. PubMed [journal] PMID:27797810.
237. Gujar AD, Le S, Mao DD, Dadey DY, Turski A, Sasaki Y, Aum D, Luo J, Dahiya S, Yuan L, Rich KM, Milbrandt J, Hallahan DE, Yano H, Tran DD, Kim AH. An NAD<sup>+</sup>-dependent transcriptional program governs self-renewal and radiation resistance in glioblastoma. *PNAS USA*, Dec 20;113(51):E8247-E8256, 2016 PubMed [journal] PMID: 27930300.
238. Walker LJ, Summers DW, Sasaki Y, Brace EJ, Milbrandt J, DiAntonio A. MAPK signaling promotes axonal degeneration by speeding the turnover of the axonal maintenance factor NMNAT2. *eLife*, 22540, 2017. PMID:28095293.
239. Essuman, K, Summers DW, Sasaki Y, Mao X, DiAntonio A, and Milbrandt J. The SARM1 Toll/Interleukin-1 Receptor domain possesses intrinsic NAD<sup>+</sup> cleavage activity that promotes pathological axonal degeneration. *Neuron*, Mar 22;93(6):1334-1343, 2017. PMID:28334607
240. Beirowski B, Wong KM, Babetto E, Milbrandt J. mTORC1 promotes proliferation of immature Schwann cells and myelin growth of differentiated Schwann cells. *PNAS USA*, May 23;114(21):E4261-E4270, 2017. doi: 10.1073/pnas.1620761114. Epub 2017 May 8. PMID:28484008.
241. Galindo R, Banks Greenberg M, Araki T, Sasaki Y, Mehta N, Milbrandt J, Holtzman DM. NMNAT3 is protective against the effects of neonatal cerebral hypoxia-ischemia. *Ann Clin Transl Neurol*. 2017 Aug 30;4(10):722-738. doi: 10.1002/acn3.450. eCollection PMID:29046881.
242. McGill BE, Barve RA, Maloney SE, Strickland A, Rensing N, Wang PL, Wong M, Head R, Wozniak DF, Milbrandt J. Abnormal Microglia and Enhanced Inflammation-Related Gene Transcription in Mice with Conditional Deletion of Ctcf in Camk2a-Cre-Expressing Neurons. *J Neurosci*. 2018 Jan 3;38(1):200-219. doi: 10.1523/JNEUROSCI.0936-17.2017. Epub 2017 Nov 13. PMID: 29133437.
243. Essuman, K, Summers DW, Sasaki Y, Mao X, Yim AKY, DiAntonio A, Milbrandt J. TIR domain proteins are an ancient family of NAD-consuming enzymes. *Current Biol*, Feb. 2018, i5;28(3):421-430.e4. Epub 2018 Jan 25. PMID: 29395922.
244. Frey, E., Karney-Grobe, S., Krolak, T., Milbrandt, J., DiAntonio, A. TRPV1 Agonist, Capsaicin, Induces Axon Outgrowth after Injury via Ca<sup>2+</sup>/PKA Signaling. *eNeuro*, 5(3), 2018. PMID: 29854941.
245. Sasaki Y, Hackett AR, Kim S, Strickland A, Milbrandt J. Dysregulation of NAD<sup>+</sup> metabolism induces a Schwann cell dedifferentiation program. *J Neurosci*. 2018 Jun 19. pii: 3304-17. doi: 10.1523/JNEUROSCI.3304-17.2018. [Epub ahead of print. PMID: 29921717

246. Avey D, Sankararaman S, Yim AKY, Barve R, Milbrandt J, Mitra RD. Single-Cell RNA-Seq Uncovers a Robust Transcriptional Response to Morphine by Glia. *Cell Reports*. 2018; 24(13):3619-3629.e4. PubMed [journal] PMID:30257220
247. Kim S, Maynard JC, Strickland A, Burlingame AI, Milbrandt J. Schwann cell O-GlcNAcylation promotes peripheral nerve remyelination via attenuation of the AP-1 transcription factor JUN. *Proc Natl Acad Sci U S A*. 2018 Jul 31;115(31):8019-8024. doi: 10.1073/pnas.1805538115. Epub 2018 Jul 16. PMID:30012597
248. Summers DW, Milbrandt J, DiAntonio A. Palmitoylation enables MAPK-dependent proteostasis of axon survival factors. *Proc Natl Acad Sci U S A*. 2018 Sept 11, 115(37):E8746-E8754. [Epub Aug 27, 2018] PMID: 30150401
249. Karney-Grobe S, Russo A, Frey E, Milbrandt J, DiAntonio A. HSP90 is a chaperone for DLK and is required for axon injury signaling. *Proc Natl Acad Sci U S A*. 2018 Oct 1. pii: 201805351. doi: 10.1073/pnas.1805351115. [Epub ahead of print] PMID:30275300
250. Geisler S, Huang SX, Strickland A, Doan RA, Summers DW, Mao X, Park J, DiAntonio A, Milbrandt J. Gene therapy targeting SARM1 blocks pathological axon degeneration in mice. *J Exp Med*. 2019 Jan 14. pii: jem.20181040. doi: 10.1084/jem.20181040. [Epub ahead of print] PMID:30642945
251. Geisler S, Doan, RA, Cheng G, Fisgin A, Huang, SX, Höke A, Milbrandt J, DiAntonio A. Vincristine and bortezomib use distinct upstream mechanisms to activate a common SARM1-dependent axon degeneration program. *JCI Insights* 2019 Sep 5;4(17). pii: 129920. doi: 10.1172/jci.insight.129920. PMID:31484833
252. Hackett AR, Strickland A, Milbrandt J. (2019) Disrupting insulin signaling in Schwann cells impairs myelination and induces a sensory neuropathy. *Glia* 2019 Nov 23. doi: 10.1002/glia.23755. [Epub ahead of print] PMID:31758725
253. Summers DW, Frey E, Walker LJ, Milbrandt J, DiAntonio A. DLK activation synergizes with mitochondrial dysfunction to downregulate axon survival factors and promote SARM1-dependent axon degeneration. *Mol Neurobiology* 2019 Nov. 7. doi: 10.1007/s12035-019-01796-2. [Epub ahead of print] PMID:31696428
254. Wan L, Essuman K, Anderson RG, Sasaki Y, Monteiro F, Chung EH, Osborne Nishimura E, DiAntonio A, Milbrandt J, Dangl JL, Nishimura MT. TIR domains of plant immune receptors are NAD<sup>+</sup>-cleaving enzymes that promote cell death. *Science*. 2019 Aug 23;365(6455):799-803. doi: 10.1126/science.aax1771. PMID:31439793

### Books

1. Hamlin JL, Montoya-Zavala M, Heintz NH, Milbrandt J, Azizkhan JC: Studies on the mechanism of dihydrofolate reductase gene amplification in Chinese hamster ovary cells. In: Gene Amplification. Schimke RT, editor. New York: Cold Spring Harbor Laboratory, 1982.

2. Hamlin JL, Heintz NH, Milbrandt J: Isolation of an initiation domain in CHO cells. In: Mechanisms of DNA replication and recombination (Proceedings of the UCLA Symposium on Molecular and Cellular Biology). Cozzarelli NR, editor., vol 10, p 605, 1983.
3. Tourtellotte WG, Keller-Peck C, Milbrandt J, Kucera J. The Transcription Factor Egr3 Modulates Sensory Axon-Myotube Interactions during Muscle Spindle Morphogenesis. Volume 232, Number 2 (2001), pages 388-399 (; PII: S0012-1606(01)90202-7).Dev Biol. Dec 15;252:324, 2002.