

Curriculum vitae

Norbert WEISS, Ph.D.

Personal information

Date of Birth: May 8th, 1978
Place of Birth: Chambéry, France
Citizenship: French

Professional Address: Institute of Organic Chemistry and Biochemistry – Academy of Sciences of the Czech republic v.v.i.
Flemingovo nám. 2.
166 10 Prague - Czech Republic
☎ +420-220-183-464 (office) | +420-739-387-129 (mobile)
@ weiss@uochb.cas.cz 🌐 <http://theweisslab.com>

Academic Positions Held

01/2014 – Present **Assistant Professor**
Head Ion Channels and Channelopathies laboratory
Institute of Organic Chemistry and Biochemistry – Academy of Sciences of the Czech Republic, Prague, Czech Republic

01/2015 – Present **Invited Professor | Lecturer**
Saint Petersburg State University – Laboratory of Molecular Neurodegeneration, Saint Petersburg, Russia

02/2017 – Present **Guest Scientist**
University of Ulm – Institute of Applied Physiology
Ulm, Germany

List of Institutions Attended

2001 – 2002 **B.Ss. Molecular Biology & Cellular Physiology** (with Honors)
University Joseph Fourier, Grenoble, France

2003 – 2006 **Ph.D. Neuroscience & Neurobiology** (with Honors)
University Joseph Fourier, Grenoble, France
Mentor: Dr. Michel De Waard

01/2007 – 09/2008 **Postdoctoral Fellow**
University Claude Bernard - CNRS UMR5123, Villeurbanne, France
Mentors: Drs. Vincent Jacquemond and Bruno Allard

10/2008 – 10/2010 **Postdoctoral Fellow**
University Joseph Fourier - Grenoble Institute of Neurosciences, Grenoble, France
Mentor: Dr. Michel De Waard

11/2010 – 12/2013 **Postdoctoral Fellow**
Hotchkiss Brain Institute, University of Calgary, Calgary, Canada
Mentor: Dr. Gerald W. Zamponi

Honors and Awards

2003	French Ministry of Research Doctoral Studentship (3 years)
2009	European Calcium Society Travel Award
2011	Alberta Heritage Foundation for Medical Research PostDoctoral Fellowship (3 years)
2011	Hotchkiss Brain Institute PostDoctoral Fellowship (2 years)
2012	Hotchkiss Brain Institute Postdoctoral Fellow of the Year Award

Research Funding Received

2014 – 2018	Institute of Organic Chemistry and Biochemistry - Start-up Installation Grant Role: PI, €290,000
2015 – 2017	Czech Science Foundation #15-13556S Role: PI, €266,480
2015 – 2016	Czech Ministry of Education Youth and Sport #7AMB15FR Role: PI, €2000

Editorial Positions & Memberships

• Editor

2014 Pathologies of Calcium Channels (Springer) (Co-Editor)  Springer

• Associate Editor

2014 – Present General Physiology and Biophysics

• Editorial Board Member

2015 – Present Channels, Taylor & Francis

2012 – Present Communicative & Integrative Biology, Landes Bioscience publishing

2012 – Present Pharmaceutical Biology, Informa Healthcare publishing

• Ad Hoc Reviewer

Journal of Biological Chemistry, Pflügers Archiv - European Journal of Physiology, The FEBS Journal, Cerebral Cortex, Oncology, Biochemistry and Cell Biology, Journal of Neuroscience Research, Journal of Neurochemistry, Communicative & Integrative Biology, Pharmaceutical Biology, Channels, Pesticide Biochemistry and Physiology, WIREs Membrane Transport and Signaling

• Professional Memberships

2009 – Present European Calcium Society

2013 – Present German Society for Biochemistry and Molecular Biology

2013 – 2014 Swiss Society for Biochemistry

2014 – 2015 International Association for the Study of Pain

Professional Productivity

• Original Articles & Reviews

32. **Weiss N**, Zamponi GW (2017) Trafficking of neuronal calcium channels. *Neuronal Signaling* 1:1-16.

31. Lazniewska J, **Weiss N** (2017) Glycosylation of voltage-gated calcium channels in health and disease. *Biochim Biophys Acta* 1859:662-668. [PubMed](#)

30. Felix R, **Weiss N** (2017) Ubiquitination and proteasome-mediated degradation of voltage-gated Ca²⁺ channels. *Gen Physiol Biophys* 36:1-5. [PubMed](#)
29. Lazniewska J, Rzhepetskyy Y, Zhang FX, Zamponi GW, **Weiss N** (2016) Cooperative roles of glucose and asparagine-linked glycosylation in T-type calcium channel expression. *Pflügers Arch – Eur J Physiol* 468:1837-1851. [PubMed](#)
28. Rzhepetskyy Y, Lazniewska J, Blesneac I, Pamphlett R, **Weiss N** (2016) CACNA1H missense mutations associated with amyotrophic lateral sclerosis alter Ca_v3.2 T-type channel activity and reticular thalamic neuron firing. *Channels (Austin)* 10:466-477. [PubMed](#)
27. Rzhepetskyy Y, Lazniewska J, Proft J, Campiglio M, Flucher B, **Weiss N** (2016) A Ca_v3.2/Stac1 molecular complex controls T-type channel expression at the plasma membrane. *Channels (Austin)* 10:346-354. [PubMed](#)
26. Ondacova K, Karmazinova M, Lazniewska J, **Weiss N**, Lacinova L (2016) Modulation of Ca_v3.2 T-type calcium channel permeability by asparagine-linked glycosylation. *Channels (Austin)* 10:175-184. [PubMed](#)
25. Proft J, **Weiss N** (2015) G-protein regulation of neuronal calcium channels: back to the future. *Mol Pharmacol* 87:890-906. [PubMed](#)
24. Lazniewska J, **Weiss N** (2014) The “sweet” side of ion channels. *Reviews of Physiology, Biochemistry and Pharmacology* 167 :67-114. [PubMed](#)
23. García-Caballero A, Gadotti VM, Stemkowski P, **Weiss N**, Souza IA, Hodgkinson V, Bladen C, Chen L, Hamid J, Pizzoccaro A, Deage M, François A, Bourinet E, Zamponi GW (2014) The deubiquitinating enzyme USP5 modulates neuropathic and inflammatory pain by enhancing Ca_v3.2 channel activity. *Neuron* 83 :1144-1158. [PubMed](#)
22. **Weiss N**, Black S, Bladen C, Chen L, Zamponi GW (2013) Surface expression and function of Ca_v3.2 T-type calcium channels is controlled by asparagine-linked glycosylation. *Pflügers Arch – Eur J Physiol* 465:1159-1170. [PubMed](#)
21. **Weiss N**, Zamponi GW (2013) Control of low-threshold exocytosis by T-type calcium channels. *Biochem Biophys Acta* 1828:1579-1586. [PubMed](#)
20. **Weiss N**, Zamponi GW, De Waard M (2012) How do T-type calcium channels control low-threshold exocytosis. *Commun Integr Biol* 5:377-380. [PubMed](#)
19. **Weiss N**, Hameed S, Fernández-Fernández JM, Fablet K, Karmazinova M, Poillot C, Proft J, Chen L, Bidaud I, Monteil A, Huc-Brandt S, Lacinova L, Lory P, Zamponi GW, De Waard M (2012) A Ca_v3.2/syntaxin-1A complex controls T-type channel activity and low-threshold exocytosis. *J Biol Chem* 287:2810-8. [PubMed](#)
18. **Weiss N**, Sandoval A, Kyonaka S, Felix R, Mori S, De Waard M (2011) Rim1 modulates direct G-protein regulation of Ca_v2.2 channels. *Pflügers Arch – Eur J Physiol* 461:447-59. [PubMed](#)
17. Taiwe GS, Ngo Bum E, Dimo T, Talla E, **Weiss N**, Dawe A, Moto FCO, Sidiki N, Dzeufiet PD, De Waard M (2011) Antipyretic and antinociceptive effects of Nauclea latifolia root decoction and possible mechanisms of action. *Pharma Biol* 49:15-25. [PubMed](#)

16. **Weiss N**, Legrand C, Pouvreau S, Bichraoui H, Allard B, Zamponi GW, De Waard M, Jacquemond V (2010) *In vivo* expression of the G-protein $\beta_1\gamma_2$ dimer in adult mouse skeletal muscle alters L-type calcium current and excitation-contraction coupling. *J Physiol* (London) 588:2945-60. [PubMed](#)
15. **Weiss N**, Andrianjafiniony T, Dupre-Aucouturier S, Pouvreau S, Desplanches D, Jacquemond V (2010) Altered myoplasmic Ca^{2+} handling in rat fast-twitch skeletal muscle fibres during disuse atrophy. *Pflügers Arch – Eur J Physiol* 459:631-44. [PubMed](#)
14. Berbey C, **Weiss N**, Legrand C, Allard B (2009) Transient receptor potential canonical type 1 (TRPC1) operates as a sarcoplasmic reticulum calcium leak channel in skeletal muscle. *J Biol Chem* 284:36387-94. [PubMed](#)
13. Al-Qusairi L, **Weiss N**, Toussaint A, Berbey C, Messaddeq N, Kretz C, Sanoudou D, Beggs A, Allard B, Mandel JL, Laporte J, Jacquemond V, Buj-Bello A (2009) T-tubule disorganization and defective excitation-contraction coupling in muscle fibers lacking myotubularin lipid phosphatase. *Proc Natl Acad Sci* 106:18764-68. [PubMed](#)
12. Ram N, **Weiss N**, Texier-Nogues I, Aroui S, Pirrolet F, Ronjat M, Darbon H, Jacquemond V, De Waard M (2008) Design of a disulfide-less, pharmacologically-inert and chemically-competent analogue of maurocalcine for the efficient transport of impermeable compounds into cells. *J Biol Chem* 283: 27048-56. [PubMed](#)
11. **Weiss N**, Sandoval A, Felix R, Van den Maagdenberg A, De Waard M (2008) The S218L familial hemiplegic migraine mutation promotes deinhibition of $\text{Ca}_v2.1$ calcium channels during G-protein regulation. *Pflügers Arch – Eur J Physiol* 457: 315-26. [PubMed](#)
10. **Weiss N**, Legrand C, Couchoux H, Berthier C, Allard B, Jacquemond V (2008) Expression of the dystrophy-associated caveolin-3^{P104L} mutant in adult mouse skeletal muscle specifically alters the Ca^{2+} conducting function of the dihydropyridine receptor. *Pflügers Arch – Eur J Physiol* 457: 361-75. [PubMed](#)
9. **Weiss N**, Tournier-Lasserve E, De Waard M (2007) Role of P/Q calcium channel in familial hemiplegic migraine. *Med Sci (Paris)* 23: 53-63. [PubMed](#)
8. **Weiss N**, Tadmouri A, Mikati M, Ronjat M, De Waard M (2007) Importance of voltage-dependent inactivation in N-type calcium channel regulation by G-proteins. *Pflügers Arch – Eur J Physiol* 454: 115-129. [PubMed](#)
7. **Weiss N**, De Waard M (2007) Introducing an alternative biophysical method to analyse direct G protein regulation of voltage-dependent calcium channels. *J Neurosci Methods* 160: 26-36. [PubMed](#)
6. **Weiss N**, Arnoult C, Feltz A, De Waard M (2006) Contribution of the kinetics of G proteins dissociation to the characteristic modifications of N-type calcium channel activity. *Neurosci Res* 56: 332-343. [PubMed](#)
5. **Weiss N**, De Waard M (2006) Voltage-dependent calcium channels at the heart of pain perception. *Med Sci (Paris)* 22: 396-404. [PubMed](#)
4. De Waard M, Hering J, **Weiss N**, Feltz A (2005) How do G proteins directly control neuronal Ca^{2+} channel function? *Trends Pharmacol Sci* 26: 427-436. [PubMed](#)
3. Sandoz G, Lopez-Gonzalez I, Stambouliau S, **Weiss N**, Arnoult C, De Waard M (2004) Repositioning of charged I-II loop amino acid residues within the electric field by β subunit as a novel working hypothesis for the control of fast P/Q calcium channel inactivation. *Eur J Neurosci* 19: 1759-1772. [PubMed](#)

2. Sandoz G, Lopez-Gonzalez I, Bichet D, Altafaj X, **Weiss N**, Ronjat M, Dupuis A, De Waard M (2004) $Ca_v\beta$ -subunit displacement is a key step to induce the reluctant state of P/Q calcium channels by direct G protein regulation. *Proc Natl Acad Sci* 1001: 6267-6272. [PubMed](#)

1. Cuchillo-Ibanez I, Aldea M, Brocard J, Albillos A, **Weiss N**, Garcia AG, De Waard M (2003) Inhibition of voltage-gated calcium channels by sequestration of β subunits. *Biochem Biophys Res Comm* 311: 1000-1007. [PubMed](#)

• News & Views

22. Lacinova L, **Weiss N** (2016) It takes two T to shape immunity: emerging role for T-type calcium channels in immune cells. *Gen Physiol Biophys* 35:393-396. [PubMed](#)

21. Lazniewska J, **Weiss N** (2016) Glycosylation of $\alpha_2\delta_1$ subunit: a sweet talk with Cav1.2 channels. *Gen Physiol Biophys* 35:239-42 [PubMed](#)

20. **Weiss N**, Lacinova L (2016) T-type channels: release a brake, engage a gear. *Channels (Austin)* 10:78-80. [PubMed](#)

19. Proft J, **Weiss N** (2015) Looking for answers to L-type calcium channels in the aging brain. *Eur J Neurosci* 42:2496-2498. [PubMed](#)

18. **Weiss N**, Zamponi GW (2015) All roads lead to presynaptic calcium channel inhibition by the ghrelin receptor: separate agonist-dependent and -independent signaling pathways. *J Gen Physiol* 146:201-204. [PubMed](#)

17. **Weiss N** (2015) Should they team up to make your brain clock? *Neurobiol Aging* 36:2184-2185. [PubMed](#)

16. **Weiss N** (2015) T-type Ca^{2+} channels make your brain smarter. *Channels (Austin)* 9:115-116. [PubMed](#)

15. **Weiss N** (2015) The first disease connection for Cav2.2 channels. *Gen Physiol Biophys* 34:217-219. [PubMed](#)

14. **Weiss N** (2015) Stac gets the skeletal L-type calcium channel unstuck. *Gen Physiol Biophys* 34:101-103. [PubMed](#)

13. Proft J, **Weiss N** (2015) The meth brain: methamphetamines alter brain functions via NMDA receptors. *Gen Physiol Biophys* 34:1-3. [PubMed](#)

12. Proft J, **Weiss N** (2014) Rectifying rectifier channels in Huntington disease. *Commun Integr Biol* 13:e29410 [PubMed](#)

11. Proft J, **Weiss N** (2014) T-type Ca^{2+} channels: new players in the aging brain. *Commun Integr Biol* 7:e28424 [PubMed](#)

10. Proft J, **Weiss N** (2012) Jekyll and Hide: the two faces of amyloid β . *Commun Integr Biol* 5:405-407. [PubMed](#)

9. Proft J, **Weiss N** (2012) A protective mutation against Alzheimer's disease? *Commun Integr Biol* 5:301-303. [PubMed](#)

8. Proft J, **Weiss N** (2012) From opto- to radio-genetics: a switch in the wavelength. *Commun Integr Biol* 5:227-229. [PubMed](#)
7. **Weiss N** (2012) Cross-talk between TRPML1, lipids and lysosomal storage diseases. *Commun Integr Biol* 5:111-113. [PubMed](#)
6. **Weiss N** (2011) Control of depolarization-evoked presynaptic neurotransmitter release by Ca_v2.1 channel: Old story, new insights. *Channels (Austin)* 4:431-3. [PubMed](#)
5. **Weiss N** (2009) Regulation of N-type calcium channels by G-proteins: multiple pathways to control calcium entry into neurons. *Channels (Austin)* 3:219-220. [PubMed](#)
4. **Weiss N** (2008) The N-type voltage-gated calcium channel: when a neuron reads a map? *J Neurosci* 28:5621-5622. [PubMed](#)
3. **Weiss N**, Ivanova E (2008) Does the voltage-gated calcium $\alpha_2\delta_1$ subunit play a dual function in skeletal muscle? *J Physiol (London)* 586: 2035-2037. [PubMed](#)
2. **Weiss N** (2007) Alternative splicing of the Ca_v2.2 subunit: a change in N-type calcium channel activity for which purpose? *J Physiol (London)* 580: 361-362. [PubMed](#)
1. **Weiss N** (2006) The calcium channel β_{4a} subunit: a scaffolding protein between voltage-gated calcium channel and presynaptic vesicle-release machinery. *J Neurosci* 26: 6117-6118. [PubMed](#)

• Invited Chapters

3. **Weiss N**, De Waard M (2016) Biophysical methods to analyze direct G-protein regulation of neuronal voltage-gated calcium channels in “Receptors and ion channels detection in the brain – methods and protocols” (Springer) Eds. R. Lujan and F. Ciruela. [Springer](#)
2. **Weiss N**, Zamponi GW (2012) Reciprocal regulation of neuronal calcium channels by synaptic proteins in “Modulation of presynaptic calcium channels” (Springer) Eds. G. Stephens and S. Mochida. [Springer](#)
1. **Weiss N**, Zamponi GW (2012) Regulation of voltage-gated calcium channels by synaptic proteins in “Calcium Signaling” (Springer) Ed. S. Islam. *Adv Exp Med Biol* 740:759-75. [PubMed](#) [Springer](#)

• Patents (Awarded or Pending)

1. Treatment of Pain by Inhibition of USP5 De-Ubiquitinase. Garcia-Caballero A, Gadotti V, **Weiss N**, Zamponi GW. Application PCT/IB2013/002781

• Invited Lectures and Seminars

2016

- Laboratory of Developmental Neurobiology, Kazan University, Kazan, Russia (Lecture, invited by Pr. Guzel Sitdikova)
- Department of Physiology & Biophysics, University of Colorado (Lecture, invited by the Postdoc Community)
- Drug discovery and development from basic research through preclinical to clinical phases, Prague, Czech Republic (Invited speaker)
- 4th International Calcium Channel Meeting, Hoi An, Vietnam (invited speaker)

2015

- European Calcium Channel Conference, Alpbach, Austria. (Invited speaker)
- Vltava Meeting "Bioscience", Valence, France (invited speaker)
- Department of Pharmacology & Toxicology, University of Innsbruck (Lecture, invited by Pr. Jorg Striessnig)
- Institute of Applied physiology, Ulm University, Ulm, Germany (Lecture, invited by Pr. Birgit Liss)

2014

- Vltava Meeting "Bioscience", Prague, Czech Republic (invited speaker)
- Institute of physiology, Prague, Czech Republic (Lecture, invited by Dr. Ladislav Vyklicky)
- Institute of Molecular Physiology and Genetics, Bratislava, Slovakia (Lecture, invited by Dr. Lubica Lacinova)
- Calcium Signaling: from Basic to Bedside, Stockholm, Sweden (Invited speaker)

2013

- Ion Channels meeting, Montegrando, Chile (Invited speaker)
- University of Los Andes, Santiago, Chile (Lecture, invited by Dr. Ursula Wyneken)

2012

- 10 National NCL Congress, Membrane Proteins of Cell Organelles, Hamburg, Germany (Invited speaker)
- European Calcium Channel Conference, Alpbach, Austria. (Invited speaker)
- Molecular Neurobiology Symposium, Moscow, Russia (Invited speaker)

2010

- Hotchkiss Brain Institute, University of Calgary, Calgary, Canada (Lecture, Invited by Dr. Gerald W. Zamponi)

2007

- University Claude Bernard, Villeurbanne, France (Lecture, Invited by Dr. Bruno Allard)

- **Abstracts**

15. Proft J, Rzhpetskyy R, Lazniewska J, Zhang FX, Snutch TP, Zamponi GW, **Weiss N**. The *Cacna1h* mutation in the GAERS model of absence epilepsy enhances T-type Ca^{2+} currents by altering calnexin-dependent trafficking of $Ca_v3.2$ channels. Channelopathy meeting 2016, Paris, France.

14. Rzhpetskyy R, Lazniewska J, Blesneac I, Pamphlett R, **Weiss N**. Functional evaluation of *CACNA1H* mutations associated with amyotrophic lateral sclerosis. Channelopathy meeting 2016, Paris, France.

13. Lazniewska J, Rzhpetskyy R, **Weiss N**. Contrasting the role of glucose and glycosylation in T-type calcium channel expression. 5th Workshop Structure and Function of Ion Channels and Transporters 2015, Lisbon, Portugal.

12. **Weiss N**, Black S, Bladen C, Chen L, Zamponi GW. Surface expression and function of $Ca_v3.2$ T-type calcium channels is controlled by asparagine-linked glycosylation. FEBS Congress 2013, Saint Petersburg, Russia.

11. **Weiss N**, Hameed S, Fernández-Fernández JM, Fablet K, Karmazinova M, Poillot C, Proft J, Chen L, Bidaud I, Monteil A, Huc-Brandt S, Lacinova L, Lory P, Zamponi GW, De Waard M. A $Ca_v3.2$ /syntaxin-1A signaling complex controls T-type channel activity and low-threshold exocytosis. European Calcium Channel Conference 2012, Alpbach, Austria.

10. **Weiss N**, Fablet K, Karmazinova M, Navarro V, Hameed S, Bidaud I, Monteil A, Huc-Brandt S, Carabelli V, Carbone E, Lacinova L, Zamponi GW, Lory P, De Waard M. Direct regulation of T-type calcium

channels by SNAREs proteins: potential implication in fast low-threshold exocytosis. 7th Forum of European Neuroscience 2010, Amsterdam, The Netherlands.

9. **Weiss N**, Sandoval A, Felix R, Van den Maagdenberg A, De Waard M. The S218L familial hemiplegic migraine mutation promotes deinhibition of Ca_v2.1 calcium channels during direct G-protein regulation. 10th Symposium on Calcium-Binding Proteins in Normal and Transformed Cells 2008, Leuven, Belgium.

8. **Weiss N**, Legrand C, Zamponi GW, Ronjat M, Allard B, De Waard M, Jacquemond V. Functional regulation of calcium homeostasis in adult mouse skeletal muscle fibre by specific G-protein $\beta\gamma$ subunits. 10th Symposium on Calcium-Binding Proteins in Normal and Transformed Cells 2008, Leuven, Belgium.

7. **Weiss N**, Couchoux H, Bichraoui H, Legrand C, Allard B, Ronjat M, Berthier C, Jacquemond V. Functional consequences of a limb-girdle muscular dystrophy 1C-associated caveolin mutation on Ca²⁺ homeostasis and evidence of direct molecular interactions of caveolin-3 with the L-type Ca²⁺ channel. Myology 2008, Marseille, France.

6. Al-Qusairi L, **Weiss N**, Sanoudou D, Berbey C, Messaddeq N, Kretz C, Allard B, Beggs AH, Mandel JL, Jacquemond V, Laporte J, Bujbello A. Defect in excitation-contraction coupling in X-linked myotubular myopathy. Myology 2008, Marseille, France.

5. Berbey C, **Weiss N**, Legrand C, Allard B. Resting Ca²⁺ influx and potential role of TRPC channels investigated by Mn²⁺ quenching of fura-2 fluorescence and gene transfer in mammalian skeletal muscle fibres under voltage control. Myology 2008, Marseille, France.

4. **Weiss N**, Legrand C, Couchoux H, Berthier C, Allard B, Jacquemond V. Functional characterisation of caveolin-3^{P104L} limb-girdle muscular dystrophy 1C mutation on Ca²⁺ homeostasis in adult mouse skeletal muscle fibres. Ion channel meeting 2006, Giens, France.

3. **Weiss N**, Geib S, Tadmouri A, Ronjat M, De Waard M. Regulation of N-type calcium channels by G-proteins is controlled by fast inactivation. Ion channel meeting 2006, Giens, France.

2. **Weiss N**, Arnoult C, Feltz A, De Waard M. Importance of G-protein dissociation in characteristic modification of N-type Ca²⁺ channel activity. Ion channel meeting 2005, Giens, France.

1. **Weiss N**, Arnoult C, Ronjat M, Feltz A, De Waard M. A kinetic model for N-type Ca²⁺ channels regulation by G-proteins. Ion channel meeting 2004, Giens, France.

- **Organization of National or International Conferences**

2016 Channelopathy Meeting, Paris, France; Organization Committee