

-Nato a Venezia, 10 Agosto, 1964

-1989 Laurea in Medicina e Chirurgia, voto 110/110 e Lode, Università di Padova, Italia

-1992-1995 Studente di Dottorato in Neuroscienze, Dip. di Scienze Neurologiche e della Visione, Università di Verona, Italia (sviluppo e trofismo neuromuscolare, supervisore prof. Alberto Cangiano)

-1996 Dottore di Ricerca in Neuroscienze

-2002 Ricercatore presso Dip. di Scienze Neurologiche e della Visione, Università di Verona

2002/2005 Research Scholar presso il Dept. of Neurobiology, Harvard Medical School, Boston MA (AMPA/NMDA receptor development at the single spine level in cortical pyramidal neurons, synaptic plasticity in the striatal medium spiny neurons. Laboratory of Bernardo Sabatini)

-2006/oggi: Ricercatore presso Dip. di Neuroscienze, Biomedicina e Movimento, Università di Verona

-2013: frequenza di 3 mesi presso il Dept of Psychology, University of Otago, Dunedin NZ, laboratorio del Prof Wickliffe Abraham

Argomenti di ricerca

-interazioni trofiche nervo-muscolo

-modulazione dipendente da endocannabinoidi delle proprietà funzionali del muscolo scheletrico

-controllo omeostatico della plasticità sinaptica

-modulazione della plasticità sinaptica in corso di malattia di Alzheimer

-meccanismi attività-dipendenti nel processo di competizione ed eliminazione sinaptica durante lo sviluppo della giunzione neuromuscolare

-modulazione sinaptica dipendente da endocannabinoidi, studiata in neuroni ipotalamici

-controllo nervoso dell'eiaculazione

Collaborazioni

-Prof Wickliffe Abraham, Dept of Psychology, University of Otago, Dunedin NZ.

-Dr. Enzo Di Marzo and Dr.ssa Luigia Cristino, Endocannabinoid Research Group, Institute of Biomolecular Chemistry, CNR Pozzuoli Italy

-Prof Bruno Bonetti, Neurologia, Verona

-Prof. Lorenzo Cangiano, Dipartimento di Ricerche Traslazionali, Università di Pisa

-Prof.ssa Raffaella Mariotti, Dipartimento di Neuroscienze Biomedicina e Movimento, Università di Verona

Finanziamenti

-1996 : Glaxo-Wellcome fellowship: controllo neurotrofico e sinaptogenesi neuromuscolare

-2006: Ministero della Ricerca "PRIN2006": Role of action potentials in controlling the plastic phenomena of the nervous system.

-2008: Bank of San Paolo – Program in Neuroscience: Interaction between endocannabinoid and hypocretin system as a novel hypothalamic regulatory mechanism

-2017: Verona Brain Research Foundation (VBRF) - Fondi di ricerca per le Neuroscienze: Fire to wire: Action Potentials for the Priming of Memory Mechanisms

Pubblicazioni

Articoli in riviste scientifiche indicizzate

1. Dolci S., Mannino L., Campanelli A., Rossi E., Bottani E., Ciarpella F., Karkossa I., Setten E., Savino B., Pruonto G., Piazza N., Gianoli S., Amenta A., **Busetto G.**, Pezzotta A., Di Chio M., Castagna A., Martinelli N., Barone I., Boschi F., Doherty A., Scupoli M.T., Cavallini C., Malpeli G., Malik Z., Sagripanti L., Silani V., Cristofori P., Scanziani E., Sandri M., Pistocchi P., Bossolasco P., Endrizzi M., Schubert K., Fumagalli G.F., Locati M., Bifari F., Decimo I.
Tumor-associated macrophages enhance tumor innervation and spinal cord repair.
bioRxiv **2024**.12.19.629374; doi: <https://doi.org/10.1101/2024.12.19.629374>
2. **Busetto G.**, Cangiano A.
Pre- and post-synaptic roles of action potential activity in synapse elimination revealed by using ectopic neuromuscular junction formation by a foreign nerve.
Neuroscience Letters **2020**, doi: 10.1016/j.neulet.2020.134835
3. Iannotti FA., Pagano E, Guardiola O, Adinolfi S, Saccone V, Consalvi S, Piscitelli F, Gazzero E, **Busetto G**, Carrella D, Capasso R, Puri PL, Minchiotti G, Di Marzo V.
Genetic and pharmacological regulation of the endocannabinoid CB1 receptor in Duchenne muscular dystrophy.
Nature Communications **2018**, vol. 9, 1-13, doi: 10.1038/s41467-018-06267-1
4. Buffelli M, Tognana E, Cangiano A, **Busetto G**.
Activity-dependent vs neurotrophic modulation of acetylcholine receptor expression: evidence from rat soleus and extensor digitorum longus muscles confirms the exclusive role of activity.
European Journal of Neuroscience **2018**, vol. 47, 1474-1481, doi: 10.1111/ejn.14020
5. Becker TM, Favero M, Di Marzo V, Cristino L, **Busetto G**.
Endocannabinoid dependent disinhibition of orexinergic neurons: electrophysiological evidence in leptin-knockout obese mice
Molecular Metabolism **2017**, doi: 10.1016/j.molmet.2017.04.005

6. Cristino L, Luongo L, Imperatore R, Boccella S, Becker T, Morello G, Piscitelli F, **Busetto G**, Maione S, Di Marzo V.
Orexin-A and endocannabinoid activation of the descending antinociceptive pathway underlies altered pain perception in leptin signalling deficiency
Neuropsychopharmacology **2016**; vol. 41, 508–520; doi:10.1038/npp.2015.173; published online 15 July 2015
7. Favero M, Cangiano A, **Busetto G**. Lesson from the neuromuscular junction: role of pattern of nerve activity in development.
Editorial in *Neural Regeneration Research* **2015**; vol. 10, Issue 5, 686-688. *Invited*
8. Favero M, Cangiano A, **Busetto G**
Adult Rat Motor Neurons Do Not Re-Establish Electrical Coupling during Axonal Regeneration and Muscle Reinnervation
PLOS one **2015**; DOI: 10.1371/journal.pone.0123576, Published: April 13, 2015
9. Turano E, **Busetto G**, Marconi S, Guzzo F, Farinazzo A, Commisso M, Bistaffa E, Musumeci S, Sotgiu S, Bonetti B
Neurotoxicity and synaptic plasticity impairment of N-acetylglucosamine polymers: implications for Alzheimer's disease
Neurobiology of Aging **2015**; vol. 36 , Issue 5 , 1780 - 1791
DOI:10.1016/j.neurobiolaging.2014.12.033
10. Favero M, Cangiano A, **Busetto G**
The timing of activity is a regulatory signal during development of neural connections.
Journal of Molecular Neuroscience **2014**; vol. 53: 324-329; DOI: 10.1007/s12031-013-0128-z. E-published in 2013
11. Favero M, Cangiano A, **Busetto G**
Hebb-based rules of neural plasticity: are they ubiquitously important for the refinement of synaptic connections in development?
The Neuroscientist **2014**; vol. 20: 8-14; DOI: 10.1177/1073858413491148
E-published in 2013. *Cover picture*.
12. Cristino L, **Busetto G**, Imperatore R, Ferrandino I, Palomba L, Silvestri C, Petrosino S, Orlando P, Bentivoglio M, Mackie K, Di Marzo V
Obesity-driven synaptic remodeling affects endocannabinoid control of orexinergic neurons.
Proceedings of the National Academy of Sciences (PNAS) **2013**; vol. 110, no. 24: E2229-E2238; DOI: 10.1073/pnas.1219485110. Received a *Commentary* in the same issue.
13. Favero M, **Busetto G**, Cangiano A
Spike timing plays a key role in synapse elimination at the neuromuscular junction.
Proceedings of the National Academy of Sciences (PNAS) **2012**; vol. 109, no 25: E1667-E1675; DOI: 10.1073/pnas.1201147109.
14. Buffelli M, **Busetto G**, Favero M, Cangiano L, Cangiano A
Synaptic plasticity at developing neuromuscular junctions: role of the timing of spike activity in the competing inputs.
Archives Italiennes de Biologie **2011**; 149 (Suppl.): 167-174
15. Favero M, Buffelli M, Cangiano A, **Busetto G**
The timing of impulse activity shapes the process of synaptic competition at the neuromuscular junction.
Neuroscience **2010**; 167: 343-353.
16. **Busetto G**, Higley MJ, Sabatini BL
Developmental presence and disappearance of postsynaptically silent synapses on dendritic spines of rat layer 2/3 pyramidal neurons.
Journal of Physiology **2008**; 586.6: 1519-1527.

17. Favero M, Lorenzetto E, Bidoia C, Buffelli M, **Busetto G**, Cangiano A.
Synapse formation and elimination: role of activity studied in different models of adult muscle reinnervation.
Journal of Neuroscience Research **2007**; 85:2610-9.
18. Buffelli M, **Busetto G**, Bidoia C, Favero M, Cangiano A.
Activity-dependent synaptic competition at mammalian neuromuscular junctions.
News in Physiological Sciences **2004**; 19:85-91. *Cover picture*.
19. **Busetto G**, Buffelli M, Cangiano L, Cangiano A.
Effects of evoked and spontaneous motoneuronal firing on synapse competition and elimination in skeletal muscle.
Journal of Neurocytology **2003**; 32:795-802. Became *Brain Cell Biology* in Dec. 2005
20. Buffelli M, **Busetto G**, Cangiano L, Cangiano A.
Perinatal switch from synchronous to asynchronous activity of motoneurons: link with synapse elimination.
Proceedings of the National Academy of Sciences (PNAS) **2002**; 99(20):13200-5.
21. Buffelli M, **Busetto G**, Cangiano A.
The use of in vivo direct drug application to assess neural regulation of muscle properties.
Journal of Neuroscience Methods **2001**; 106:113-20.
22. **Busetto G**, Buffelli M, Tognana E, Bellico F, Cangiano A.
Hebbian mechanisms revealed by electrical stimulation at developing rat neuromuscular junctions.
Journal of Neuroscience **2000**; 20:685-95. *Cover picture*.
23. Pasino E, Buffelli M, **Busetto G**, Cangiano A.
Use of dexamethasone with TTX block of nerve conduction shows that muscle membrane properties are fully controlled by evoked activity.
Brain Research **1997**; 770:242-7.
24. Cangiano A, Buffelli M, **Busetto G**, Tognana E, Pasino E.
Studies on anterograde trophic interactions based on general muscle properties.
Archives Italiennes de Biologie **1997**; 135:331-41.
25. Pasino E, Buffelli M, Arancio O, **Busetto G**, Salviati A, Cangiano A.
Effects of long-term conduction block on membrane properties of reinnervated and normally innervated rat skeletal muscle.
Journal of Physiology **1996**; 497: 457-72.
26. Cangiano A, Buffelli M, **Busetto G**, Pasino E.
Fisiologia della trasmissione neuromuscolare.
Rivista Italiana di Neuroscienze **1993**; 1: 12-22.

Capitoli di libro

Busetto G., Tognana E., Buffelli M., Pasino E., Cangiano A.
Role of activity in ectopic synapse formation in skeletal muscle.
Livre Jubilaire Professor Gian Carlo Guazzi **1997**; Rossi A., Annunziata P. Editors; Tipografia Senese.

Curatela

Guyton e Hall

Fisiologia Medica Test di autovalutazione **2017**, terza edizione, Casa editrice Edra.

Citazioni importanti: articoli che sono stati citati in libri di testo oppure in review su riviste prestigiose

1

Busetto G, Buffelli M, Tognana E, Bellico F, Cangiano A. Hebbian mechanisms revealed by electrical stimulation at developing rat neuromuscular junctions.

Journal of Neuroscience **2000**; 20:685-95.

Cited in:

1 Fundamental Neuroscience, Academic Press 4th edition, chapter 19: Synapse elimination, by Tapia JC and Lichtman JW; 2013

2 Development of the nervous system. 3th edition, Elsevier 2012. Authors: Sanes DH, Reh TA, Harris WA, Chapter 9: Refinement of synaptic connections.

3 Patterning and Cell Type Specification in the Developing Cns and Pns, Academic Press, Elsevier 2013, Edited by: John Rubenstein and Pasko Rakic, Chapter 5: The formation and maturation of neuromuscular junctions; ISBN: 978-0-12-397265-1

2

Buffelli M, **Busetto G**, Cangiano L, Cangiano A. Perinatal switch from synchronous to asynchronous activity of motoneurons: link with synapse elimination.

Proceedings of the National Academy of Sciences (PNAS) **2002**; 99(20):13200-5.

Cited in:

1 Fundamental Neuroscience, 4th edition, Academic Press 2013. Chapter 19: Synapse elimination, by Tapia JC and Lichtman JW.

2 Patterning and Cell Type Specification in the Developing Cns and Pns, Academic Press, Elsevier 2013, Edited by: John Rubenstein and Pasko Rakic, Chapter 5: The formation and maturation of neuromuscular junctions; ISBN: 978-0-12-397265-1

3

Buffelli M, **Busetto G**, Bidoia C, Favero M, Cangiano A. Activity-dependent synaptic competition at mammalian neuromuscular junctions.

News in Physiological Sciences **2004**; 19:85-91.

Cited in:

1 Principles of Neural Science, Mc Grow Hill 5th edition, 2013. Chapter 55: Formation and elimination of synapses, by Sanes JR and Jessel TM.

4

Busetto G, Higley MJ, Sabatini BL. Developmental presence and disappearance of postsynaptically silent synapses on dendritic spines of rat layer 2/3 pyramidal neurons. *Journal of Physiology* **2008**; 586.6: 1519-1527.

Cited with a special note in:

1 Silent synapses and the emergence of a postsynaptic mechanism for LTP. Kerchner GA and Nicoll RA, Nat. Rev. Neurosci. 2008, 9:813, Fig 4.