

Daniela Carulli

Curriculum vitae

Date of birth: 17/04/1973

Nationality: Italian

Education and training

1992-1998 School in Biological Sciences at the Faculty of Sciences, University of Turin, Italy.

1996 Six month training in the laboratory of Prof. Calas at the Institute of Neuroscience, University of Paris, France.

05/03/1998 Degree in Biological Sciences, 110/110 cum laude.

1998-2002 PhD student at the Department of Neuroscience, University of Turin.

1999 Two week training in the laboratory of Prof. M. Baehr, University of Tuebingen, Germany.

2000 Two week training in the laboratory of Prof. M. Baehr, University of Tuebingen, Germany.

2001 Qualification for performing the profession of Biologist.

20/12/2002 PhD in Neurological Sciences at the University of Turin, Italy, under the supervision of Prof. P. Strata.

2003-2006 Postdoc fellow at the Brain Repair Centre, University of Cambridge, under the supervision of prof. J.W. Fawcett.

Jan 2007-Oct 2007 Postdoc at the Dept of Neuroscience, University of Turin, under the supervision of Prof. Ferdinando Rossi.

Oct 2007-today Assistant professor (“Ricercatore Universitario”) at the Faculty of Psychology, University of Turin.

Fellowships

- “Erasmus project” fellowship (1996)
- “Fondazione Cavalieri Ottolenghi” fellowship (1999)
- Short-Term Scientific Mission fellowship of the COST B10 Cooperation (1999)
- Short-Term Scientific Mission fellowship of the COST B10 Cooperation (2000)
- NWO (Nederlandse Organisatie voor Wetenschappelijk Onderzoek) mobility grant (2015)
- University of Turin, World Wide Style mobility grant (2015)

Grants

- International Institute for paraplegiologie, Zuerich (2008-2010; with F. Rossi); *Interplay between experience and extracellular matrix in the control of physiological and compensatory plasticity in the adult CNS*; 100.000 euro.
- Piedmont region (ricerca sanitaria finalizzata) 2008. *Regulation of plasticity in the adult central nervous system: role of experience and of the extracellular matrix*; 8000 euro.
- University of Turin (ex 60%) 2008; *Interaction between environmental stimuli and extracellular matrix in the regulation of central nervous system plasticity*; 6500 euro.
- Piedmont region (ricerca sanitaria finalizzata) 2008-bis; *Role of the extracellular matrix in the modulation of plasticity of the adult central nervous system*; 7000 euro
- University of Turin (ex 60%) 2012; *Role of link protein 1 in demyelination and remyelination in the multiple sclerosis*; 3330 euro

- University of Turin (ex 60%) 2013; *Cellular and molecular mechanisms of vestibular compensation*; 2000 euro
- University of Turin (ex 60%) 2014; *Contribution of the cerebellum to autism spectrum disorder: the role of PTEN*; 2000 euro

Guest referee for international scientific journals

Journal of Cellular Science, Cell Transplantation, European Journal of Neuroscience, Journal of Neuroscience Research, Experimental Neurology, The International Journal of Biochemistry and Cell Biology, Molecular and Cellular Neuroscience, Plos One, Frontiers in Cellular Neuroscience, Brain, Behavior and Immunity.

Guest editor

Leading guest editor for a Special Issue of Neural Plasticity, entitled "Perineuronal nets and CNS plasticity and repair".

Membership in research centers

Neuroscience Institute Cavalieri Ottolenghi (NICO, Orbassano, Turin).

Membership in research networks

Associate of the Christopher Reeve Foundation Consortium (2004-2007). Neuroscience Institute Turin (NIT) from 2012; NEUROSTEMCELLREPAIR consortium (2013-2017).

PhD program

Since 2010, member of the Board of the "PhD course in Neuroscience", Doctoral School in Life and Health Sciences, University of Turin.

Former PhD students: Alessio Faralli, Simona Foscarin (co-tutoring with prof. Ferdinando Rossi), Ermira Pajaj (co-tutoring with prof. Ferdinando Rossi).

Member of PhD thesis evaluation committee: Gianluca Menichetti, PhD in Neuroscience, University of Turin (2012); Dolores Vázquez Sanromán, PhD in Neuropsychology, University of Castellon, Spain (2014).

Invited seminars

2001 IX COST B10 meeting on "Brain damage repair", Lisbon, December 7-8.

2002 Invitation by Dr. A. Chedotal, Batiment de Pédiatrie, Hôpital de la Salpêtrière, Paris.

2002 Invitation by Dr. M. Götz, Department of Neurobiology, Max Planck Institute, Munich.

2007 Workshop of the EU-sponsored Network of Excellence NeuroNE, "Activity-dependent plasticity", Turin.

2007 Invitation by Dr Schilling, University of Bonn, Germany

2009 "Intrinsic growth potential, regulatory molecules and experience: the complex interplay regulating neuronal plasticity", Meeting of the German Society of Neuroscience, Göttingen.

2010 Invitation by Dr Sassoè-Pognetto, University of Turin.

2011 Workshop of the Doctorate school in Neuroscience, University of Turin, "From muscle to brain: role of dystroglycan in synaptic function and disease".

2012 Invitation by Dr J. Verhaagen, Netherlands Institute for Neuroscience, Amsterdam.

2014 50° meeting of AINPeNC (Associazione Italiana di Neuropatologia e Neurobiologia Clinica) and 40° of AIRIC (Associazione Italiana di Ricerca sull'Invecchiamento Cerebrale), Verbania (Italy)

2015 “DiSFeB meets NICO” seminar, University of Milan.

2015 XVI meeting of the Italian Society for Neuroscience, Cagliari.

Past and present collaborations

James W Fawcett and Jessica Kwok (Brain Repair Centre, University of Cambridge, UK)

Tommaso Pizzorusso (CNR Pisa, Italy)

Joost Verhaagen (Netherlands Institute for Neuroscience, Amsterdam)

Gregorz Wilczynski (Nencki Institute, Warsaw)

Toshitaka Oohashi (Okayama University, Japan)

Marta Miquel (University of Castellon, Spain)

Roberto Albera (University of Turin)

Carola Eva (University of Turin)

Filippo Tempia (University of Turin)

Teaching activity

2007-2015 Neuroscience (Faculty of Psychology, University of Turin).

Publications

Carulli D., Buffo A., Botta C., Altruda F., Strata P. (2002) Regenerative and survival capabilities of Purkinje cells overexpressing c-Jun. *Eur J Neurosci*, 16: 105-118.

Andjus P.R., Zhu L., Cesa R., **Carulli D.**, Strata P. (2003) A change in the pattern of activity affects the developmental regression of the Purkinje cell polyinnervation by climbing fibers in the rat cerebellum. *Neuroscience*, 121: 563-572.

Buffo A., **Carulli D.**, Rossi F., Strata P. (2003) Extrinsic regulation of injury/growth-related gene expression in the inferior olive of the adult rat. *Eur J Neurosci*, 18: 2146-2158.

Carulli D., Buffo A., Strata P. (2004) Reparative mechanisms in the cerebellar cortex. *Prog Neurobiol*, 72:373-398. Review.

Properzi F., **Carulli D.**, Asher R.A., Muir E., Camargo L.M., van Kuppevelt T.H., ten Dam G.B., Furukawa Y., Mikami T., Sugahara K., Toida T., Geller H.M. and Fawcett J.W. (2005) Chondroitin 6-sulphate synthesis is up-regulated in injured CNS, induced by injury-related cytokines and enhanced in axon-growth inhibitory glia. *Eur J Neurosci*, 21: 378–390.

Carulli D., Laabs T., Geller H.M. and Fawcett J.W. (2005) Chondroitin sulfate proteoglycans in neural development and regeneration. *Curr Opin Neurobiol*, 15:116-20. Review. Erratum in: *Curr Opin Neurobiol*. 15:252.

Milasin J., Buffo A., **Carulli D.**, Andjus P. and Strata P. (2005) MAPK activation in cerebellar basket cell terminals after harmaline treatment. *Ann N Y Acad Sci*, 1048:411-417.

Carulli D., Rhodes K.E., Brown D.J., Bonnert T.P., Pollack S.J., Oliver K., Strata P. and Fawcett J.W. (2006) Composition of perineuronal nets in the adult rat cerebellum and the cellular origin of their components. *J Comp Neurol*, 494:559-577.

Deepa S.S., **Carulli D.**, Galtrey C., Rhodes K., Fukuda J., Mikami T., Sugahara K and Fawcett J.W. (2006) Composition of Perineuronal Net Extracellular Matrix in Rat Brain: a different disaccharide composition for the net-associated proteoglycans. *J Biol Chem*, 281: 17789-17800.

- Carulli D.**, Rhodes K and Fawcett J.W. (2007) Upregulation of aggrecan, link protein 1 and hyaluronan synthases during formation of perineuronal nets in the rat cerebellum. *J Comp Neurol*, 501:83-94.
- Milasin J.M., Buffo A., **Carulli D.**, Strata P. (2007) Intensive remodeling of Purkinje cell spines after climbing fibers deafferentation does not involve MAPK and Akt activation. *Ann N Y Acad Sci*, 1096:230-238.
- Galtrey C.M., Kwok J.C., **Carulli D.**, Rhodes K.E., Fawcett J.W. (2008) Distribution and synthesis of extracellular matrix proteoglycans, hyaluronan, link proteins and tenascin-R in the rat spinal cord. *Eur J Neurosci*, 27:1373-1390.
- Foscarin S., Gianola S., **Carulli D.**, Fazzari P., Mi S., Tamagnone L., Rossi F. (2009) Overexpression of GAP-43 modifies the distribution of the receptors for myelin-associated growth-inhibitory proteins in injured Purkinje axons. *Eur J Neurosci* 30:1837-1848.
- Carulli D.**, Pizzorusso T., Kwok J.C., Putignano E., Poli A., Frostyayk S., Andrews M.R., Deepa S.S., Glant T., Fawcett J.W. (2010) Animals lacking link protein have attenuated perineuronal nets and persistent plasticity. *Brain*, 133:2331-2347.
- Kwok J.C., **Carulli D.**, Fawcett J.W. (2010) In vitro modeling of perineuronal nets: hyaluronan synthase and link protein are necessary for their formation and integrity. *J Neurochem*, 114:1447-1459.
- Foscarin S., Ponchione D., Pajaj E., Leto K., Gawlak M., Wilczynski G.M., Rossi F., **Carulli D.** (2011) Experience-Dependent Plasticity and Modulation of Growth Regulatory Molecules at Central Synapses. *PLoS ONE* 6(1): e16666. doi:10.1371/journal.pone.0016666.
- Carulli D.**, Foscarin S., Rossi F. (2011) Activity-dependent plasticity and gene expression modifications in the adult CNS. *Front. Mol. Neurosci* 4:50. doi: 10.3389/fnmol.2011.00050. Review.
- Foscarin S., Rossi F., **Carulli D.** (2012) Influence of the environment on adult CNS plasticity and repair. *Cell Tissue Res*, 349:161-168. Review.
- Vo T. *, **Carulli D.** *, Ehlert E.M. *, Kwok J.C. *, Dick G., Mecollari V., Moloney E.B., Neufeld G., de Winter F., Fawcett J.W., Verhaagen J. (2013) The Chemorepulsive Axon Guidance Protein Semaphorin 3A is a Constituent of Perineuronal Nets in the Adult Rodent Brain. *Mol Cell Neurosci*, 56:186-200.* first co-authors.
- Faralli A., Bigoni M., Mauro A., Rossi F., **Carulli D.** (2013) Non-invasive strategies to promote functional recovery after stroke. *Neural plasticity*, doi:10.1155/2013/854597. Review.
- Carulli D.**, Foscarin S., Faralli A., Pajaj E., Rossi F. (2013) Modulation of semaphorin3A in perineuronal nets during structural plasticity in the adult cerebellum. *Mol Cell Neurosci*, 57:10-22.
- Martone T., Giordano P., Dagna F., **Carulli D.**, Albera R., Rossi F. (2014) Nestin expression and reactive phenomena in the mouse cochlea after kanamycin toxicity. *Eur J Neurosci*, 39:1729-1741.
- Leto K., **Carulli D.**, Buffo A. (2014) Symposium in honour of Ferdinando Rossi: a passionate journey through the cerebellar mysteries. *Cerebellum*,13:791-794.
- Vazquez-Sanroman D., Leto K., Cerezo-Garcia M., Carbo-Gas M., Sanchis-Segura C., **Carulli D.**, Rossi F., Miquel M. (2015) The cerebellum on cocaine: plasticity and metaplasticity. *Addict Biol*, doi: 10.1111/adb.12223.
- Faralli A., Dagna F., Albera A., Bekku Y., Oohashi T., Albera R., Rossi F., **Carulli D.** (2015) Modifications of perineuronal nets and remodelling of excitatory and inhibitory afferents during vestibular compensation in the adult mouse. *Brain Struct Funct*, doi: 10.1007/s00429-015-1095-7.
- Vazquez-Sanroman D., Carbo-Gas M., Leto K., Cerezo-García M., Gil-Miravet I., Sanchis-Segura C., **Carulli D.**, Rossi F., Miquel M. (2015) Cocaine-induced plasticity in the cerebellum of sensitised mice. *Psychopharmacology*, in press.

Oohashi T., Edamatsu M., Bekku Y., **Carulli D.** (2015) The hyaluronan and proteoglycan link proteins: organizers of the brain extracellular matrix and key molecules for neuronal function and plasticity. *Exp Neurol*, in press.

Bibliometry

H-index: 14. Total number of citations: 978. Total IF: 122.028 (relative to year of publication); average IF: 4.52. Source: Scopus.