

BIOGRAPHICAL SKETCH

Name: Dr. Giovanni Cirillo

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Address: Division of Human Anatomy, Lab. of Morphology of Neuronal Networks, Dept. of Mental and Physical Health and Preventive Medicine, University of Campania “Luigi Vanvitelli”, via Luciano Armanni, 5, 80138 – Naples – Italy

Actual Position: Assistant Professor of Human Anatomy

Institution: University of Campania “Luigi Vanvitelli”, Naples (Italy)

EDUCATION

Ph.D. Clinical and Experimental Medicine, School of Medicine and Surgery, University of Campania “Luigi Vanvitelli”. **Dissertation:** Long-term neurophysiological and clinical response in patients with chronic inflammatory demyelinating polyradiculoneuropathy (CIDP) treated with subcutaneous immunoglobulin (SCIG). **Advisor:** Prof. G. Tedeschi. December 2017.

Specialist in Neurology. Faculty of Medicine and Surgery, Second University of Naples. **Dissertation:** Role of Single Fiber Electromyography (SFEMG) in the differential diagnosis between myasthenia gravis and motor neuron disease. **Advisor:** Prof. G. Tedeschi. July 2014.

MD, Faculty of Medicine and Surgery, Second University of Naples. **Dissertation:** imaging of coma, analysis in functional MRI. **Advisor:** Prof. M. Papa. September 2007.

RESEARCH INTEREST

- ✓ maladaptive synaptic plasticity in central nervous system
- ✓ modulation of reactive gliosis
- ✓ neurobiology of pain
- ✓ neurobiological after-effects of non-invasive brain stimulation techniques

RESEARCH & PROFESSIONAL EXPERIENCE

Assistant Professor - Division of Human Anatomy, Lab. of Morphology of Neuronal Networks, Dept. of Mental and Physical Health and Preventive Medicine, University of Campania "Luigi Vanvitelli". March 2018 to present.

TEACHING EXPERIENCE

Assistant Professor. Undergraduate courses: Human Anatomy and Neuroanatomy, Faculty of Medicine and Surgery, School of Medicine and Surgery, University of Campania "Luigi Vanvitelli". March 2018 to present.

Teaching Assistant. Undergraduate courses: Human Anatomy and Neuroanatomy, Faculty of Dentistry, School of Medicine and Surgery, University of Campania "Luigi Vanvitelli". 2014-2016.

PEER-REVIEWED PUBLICATIONS

- 1) Cavaliere C, **Cirillo G**, Bianco MR, Rossi F, De Novellis V, Maione S, Papa M. Gliosis alters expression and uptake of spinal glial amino acid transporters in a mouse neuropathic pain model. *Neuron Glia Biol.* 2007 May;3(2):141-53 – PMID 18634571
- 2) Giovannoni R, Maggio N, Bianco Mr, Cavaliere C, **Cirillo G**, Lavitrano M, Papa M. Reactive astrocytosis and glial glutamate transporter clustering are early changes in a spinocerebellar ataxia type 1 transgenic mouse model. *Neuron Glia Biol.* 2007 Nov;3(4):335-51 – PMID 18634565

- 3) Colangelo AM, Bianco MR, Vitagliano L, Cavaliere C, **Cirillo G**, De Gioia L, Diana D, Colombo D, Redaelli C, Zaccaro L, Morelli G, Papa M, Sarmientos P, Alberghina L, Martegani E. A new Nerve Growth Factor-mimetic peptide active on neuropathic pain in rats. *J Neurosci*. 2008 Mar 12;28(11):2698-709 – PMID 18337399
- 4) Musholt K, **Cirillo G**, Cavaliere C, Bianco MR, Bock J, Helmeke C, Braun K, Papa M. Neonatal separation stress reduces glial fibrillary acidic protein- and S100beta-immunoreactive astrocytes in the rat medial precentral cortex. *Dev Neurobiol*. 2009 Mar;69(4):203-11 – PMID 19137572
- 5) Leo D, Adriani W, Cavaliere C, **Cirillo G**, Marco EM, Romano E, Di Porzio U, Papa M, Perrone-Capano C, Laviola G. Methylphenidate to adolescent rats drives enduring changes of accumbal HTR7 expression: implications for impulsive behavior and neuronal morphology. *Genes Brain Behav*. 2009 Apr;8(3):356-68 – PMID 19243449
- 6) **Cirillo G**, Cavaliere C, Bianco MR, De Simone A, Colangelo AM, Sellitti S, Alberghina L, Papa M. Intrathecal NGF administration reduces reactive astrogliosis and changes neurotrophin receptors expression pattern in a rat model of neuropathic pain. *Cell Mol Neurobiol*. 2010 Jan;30(1):51-62 – PMID 19585233
- 7) **Cirillo G**, Maggio N, Bianco MR, Vollono C, Sellitti S, Papa M. Discriminative behavioral assessment unveils remarkable reactive astrogliosis and early molecular correlates in basal ganglia of 3-nitropropionic acid subchronic treated rats. *Neurochem Int*. 2010 Jan;56(1):152-60 – PMID 19799953
- 8) **Cirillo G**, Bianco MR, Colangelo AM, Cavaliere C, Daniele De L, Zaccaro L, Alberghina L, Papa M. Reactive astrogliosis-induced perturbation of synaptic homeostasis is restored by Nerve Growth Factor. *Neurobiol Dis*. 2011 Mar;41(3):630-9 – PMID 21111819
- 9) Bianco MR, Berbenni M, Amara F, Viggiani S, Fragni S, Galimberti V, Colombo D, **Cirillo G**, Papa M, Alberghina L, Colangelo AM. Crosstalk between cell cycle induction and mitochondrial dysfunction during oxidative stress and ngf withdrawal in differentiated PC12 cells. *J. Neurosci. Res*. 2011, 89(8):1302-15 – PMID 21557293
- 10) Cavaliere C, **Cirillo G**, Bianco MR, Adriani W, De Simone A, Leo D, Perrone-Capano C, Papa M. Methylphenidate administration determines enduring changes in neuroglial network in rats. *Eur. Neuropsychopharmacol* 2012, (1):53-63 – PMID 21550213
- 11) **Cirillo G**, Colangelo AM, Bianco MR, Cavaliere C, Zaccaro L, Sarmientos P, Alberghina L, Papa M. BB14, a Nerve Growth Factor (NGF)-like peptide shown to be effective in reducing reactive astrogliosis and restoring synaptic homeostasis in a rat model of peripheral nerve injury. *Biotechnol Adv* 2012, 30(1):223-32 – PMID 21620945

- 12) Colangelo AM, **Cirillo G**, Lavitrano ML, Alberghina L, Papa M.
Targeting reactive astrogliosis by novel biotechnological strategies.
Biotechnol Adv 2012, 30(1):261-71 – PMID 21763415
- 13) Tessitore A, Amboni M, **Cirillo G**, Corbo D, Picillo M, Russo A, Vitale C, Santangelo G, Erro R, Cirillo M, Esposito F, Barone P, Tedeschi G.
Regional gray matter atrophy in patients with Parkinson's disease and freezing of gait.
AJNR 2012; 33(9):1804-9 - PMID 22538070
- 14) Bianco MR, **Cirillo G**, Petrosino V, Soleti A, Merizzi G, Cavaliere C, Papa M.
A new dialdehydic compound recovers neuropathic pain and reduces reactive gliosis in neuropathic pain rat models.
Neurosci. Lett. 2012, 530(1):85-90 PMID 22981978
- 15) Tessitore A, Esposito F, Vitale C, Santangelo G, Amboni M, Russo A, Corbo D, **Cirillo G**, Barone P, Tedeschi G.
Default-mode network connectivity in cognitively unimpaired patients with Parkinson's disease.
Neurology. 2012, 79(23):2226-32. PMID 23100395
- 16) **Cirillo G**, De Luca D, Papa M.
Calcium imaging of living astrocytes in the mouse spinal cord following sensory stimulation.
Neural Plast.2012:425818. PMID 23091738
- 17) Marcello L, Cavaliere C, Colangelo AM, Bianco MR, **Cirillo G**, Alberghina L, Papa M.
Remodelling of supraspinal neuro-glia network in neuropathic pain is featured by a reactive gliosis of the nociceptive amygdala
Eur J Pain. 2013 Jul;17(6):799-810. PMID 23193101
- 18) Trojsi F, Sagnelli A, **Cirillo G**, Piccirillo G, Femiano C, Monsurrò MR, Tedeschi G.
Amyotrophic lateral sclerosis and multiple sclerosis overlap: a case report.
Case Report Med. 2012:324685. Doi: 10.1155/2012/324685. PMID 23326272
- 19) **Cirillo G**, Tessitore A, Cirillo M, Salemi F, Liguori S, Esposito S, Tedeschi G.
Livedo and ischemic strokes: diagnostic hints of a rare condition.
Neurol Sci. 2013 Nov;34(11):2073-5. PMID 23660637
- 20) Giordano A, Tessitore A, Corbo D, **Cirillo G**, De Micco R, Russo A, Liguori S, Cirillo M, Esposito F, Tedeschi G.
Clinical and cognitive correlations of regional gray matter atrophy in patients with progressive supranuclear palsy: a VBM-DARTEL study.
Parkinsonism Relat Disord. 2013 Jun;19(6):590-4. PMID 23477861
- 21) **Cirillo G**, Todisco V, Tessitore A, Tedeschi G.
Clinical Reasoning: a 62-year-old man with right wrist drop
Neurology. 2013 Sep 10;81(11):E81-4.
- 22) Papa M, De Luca C, Petta F Alberghina L, **Cirillo G**.
Astrocyte-neuron interplay in maladaptive plasticity
Neurosci & Biobehav Rev. 2014 Feb 6; 42c: 35-54. PMID 24509064

23) **Cirillo G**, Colangelo AM, Berbenni M, Ippolito VM, De Luca C, Verdesca F, Savarese L, Alberghina L, Maggio N, Papa M.

Purinergic modulation of spinal neuroglial maladaptive plasticity following peripheral nerve injury

Mol Neurobiol. 2015 Dec;52(3):1440-1457. PMID: 25352445

24) De Luca C, Savarese L, Colangelo AM, Bianco MR, **Cirillo G**, Alberghina L, Papa M
Astrocytes and microglia-mediated immune response in maladaptive plasticity is differently modulated by NGF in the ventral horn of the spinal cord following peripheral nerve injury

Cell Mol Neurobiol. 2016 Jan;36(1):37-46. PMID: 26084599

25) **Cirillo G**, Todisco V, Tedeschi G.

The differential diagnosis of myotonic syndromes: a case report-guided and neurophysiologic approach.

J Neurol Sci. 2016 Jan 15; 360:98-9. PMID: 26723982

26) **Cirillo G**, Todisco V, Tedeschi G.

Lewis-Sumner syndrome associated with infliximab therapy in ulcerative colitis

Neurol Sci. 2016 Jun;37(6):1005-8. PMID: 26838522

27) **Cirillo G**, Colangelo AM, De Luca C, Savarese L, Barillari MR, Alberghina L, Papa M
Modulation of matrix metalloproteinases activity in the ventral horn of the spinal cord restores neuroglial synaptic homeostasis and neurotrophic support following peripheral nerve injury.

Plos One. 2016 Mar 30;11(3):E0152750. PMID: 27028103

28) **Cirillo G**, Todisco V, Tedeschi G.

One-and-a-half Brown-Séguard syndrome: when spinal neuroanatomy helps localizing the lesion

Neurology. 2016 Oct 11;87(15):E178-E179. PMID: 27765829

29) **Cirillo G**, Di Pino G, Capone F, Ranieri F, Florio L, Todisco V, Tedeschi G, Funke K, Di Lazzaro V.

Neurobiological after-effects of non-invasive brain stimulation.

Brain Stimul. 2017 Jan - Feb;10(1):1-18. PMID: 27931886

30) **Cirillo G**, Papa M

Beyond peripheral nerve: spinal gliopathy and maladaptive synaptic plasticity following peripheral nerve injury

Neural Regen Res. 2016 Sep;11(9):1422-1423. PMID: 27857743

31) Santoro C, Giugliano T, Melone Mab, Cirillo M, Schettino C, Bernardo P, **Cirillo G**, Perrotta S, Piluso G.

Multiple spinal nerve enlargement and SOS1 mutation: further evidence of overlap between neurofibromatosis type 1 and Noonan phenotype.

Clin Genet. 2018 Jan; 93(1): 138-143. PMID: 28456002

32) **Cirillo G**, Todisco V, Tedeschi G

Long-term neurophysiological and clinical response in patients with chronic inflammatory demyelinating polyradiculoneuropathy treated with subcutaneous immunoglobulin.
Clin. Neurophysiol. 2018 May; 129(5): 967-973. PMID: 29554579

33) **Cirillo G**, Cirillo M, Panetsos F, Papa M.

The selective vulnerability of basal ganglia: insights into the pathophysiology of bilateral striatal necrosis.
JNEN - Submitted

34) Colangelo AM, **Cirillo G**, Alberghina L, Papa M, Westerhoff HV

Neural plasticity and adult neurogenesis: the Deep Biology perspective.
Accepted, Neural Regeneration Research, 2018

35) Sala L, **Cirillo G**, Romano G, et al. Specific expression of a new Bruton tyrosine kinase isoform (p65BTK) in the glioblastoma gemistocytic histotype.

Submitted – Neurosurgery

36) Todisco V, **Cirillo G**, Capuano R, d'Ambrosio A, Tedeschi G, Gallo A.

Stimulated single-fiber electromyography (sSFEMG) in Lambert-Eaton syndrome.
Clin. Neurophysiol. Pract. – Submitted

37) **Cirillo G**, Todisco V, Abbadessa G, Cirillo M, Tedeschi G, Lavorgna L.

Right phrenic nerve palsy following trans-catheter atrial fibrillation ablation
Journal of the Neurological Sciences – Submitted

38) **Cirillo G**, et al. Extracellular matrix metalloproteinases play a key role by proteomic and epigenetic modifications of reactive glial cells in the spinal cord following nerve injury.

In submission

39) **Cirillo G**, et al. Cross-talk between matrix metalloproteinases, neurotrophin and purinergic pathways induces proteomic and epigenetic modifications of spinal maladaptive synaptic plasticity following nerve injury.

In submission

EDITORIAL

Editor: Frontiers in Molecular Neuroscience; Open Neurology Journal

Ad Hoc Reviewer: Frontiers in Molecular Neuroscience, Frontiers in Cellular Neuroscience, Neurobiology of Disease, Experimental Neurology, Journal of Neuroscience Research.

AWARDS

Cavaliere C, **Cirillo G**, Sellitti S, Bianco MR, Papa M.
Gliosis alters expression and uptake of spinal glial amino acid transporters in neuropathic pain.
Best Poster SII 2007

Cirillo G, Amboni M, Tessitore A, Corbo D, Picillo M, Giordano A, Pellecchia MT, Barone P, Tedeschi G.
Morphometric changes of gray matter in parkinson's disease with freezing of gait (FOG): a Voxel-Based Morphometry study.
Best Communication LIMPE 2011.

Cirillo G, Papa M, Todisco V, Tedeschi G
Purinergic modulation and two photon in vivo microscopy of spinal neuroglial maladaptive plasticity following peripheral nerve injury.
Best Communication ASNP 2015.

FELLOWSHIPS

Rita-Levi Montalcini Association: A drug from NGF (2008-2009)

CONGRESSES AND MEETINGS

A) INVITED SPEAKER

- 1) SIMFER Naples, Italy, 2017
Neuroplasticity and possibility of recovery: state of the art.
- 2) Neuromuscular emergency: up-to-date. Naples, Italy, 2016
Acute disorders of peripheral nerves: therapy and follow-up
- 3) V Annual Meeting ASNP, Turin, Italy, 2015
Purinergic modulation and two photon in vivo microscopy of spinal neuroglial maladaptive plasticity following peripheral nerve injury
- 4) IV Annual Meeting ASNP, Sorrento, Italy, 2014
Beyond peripheral nerve: spinal gliopathy and maladaptive synaptic plasticity following peripheral nerve injury
- 5) Italian Society of Neurology (SIN) Annual Meeting XLV, Cagliari, Italy, 2014
Role of single fiber electromyography (SFEMG) in the differential diagnosis of bulbar onset motor neuron disease and myasthenia gravis

- 6) Myasthenia Gravis: up-to-date, from bench to bed side. Naples, Italy, 2014
Myasthenia gravis and thimechtomy: the neurological point of view. Indications, impact, controversies and on-going trials.
- 7) Italian Society of Neurology (SIN) Annual Meeting XLIV, Milan, Italy, 2013
Wrist drop as clinical presentation of distal myasthenia gravis
- 8) European Summer School for young neurologists, London, UK, 2013
Movement disorders clinical case presentation: pseudochooreoathetosis
- 9) Headache update: diagnosis and treatment, Naples, Italy, 2012
Clinical presentation
- 10) Focus Group on Parkinson's disease, Naples, Italy, 2012
Clinical presentation
- 11) Italian Society of Neurology (SIN) Annual Meeting XLI, Catania, Italy, 2010
Reduced gray matter volume in patients with Parkinson's disease and freezing of gait at the "on state": a voxel-based morphometry study.

B) SCIENTIFIC BOARD

- 1) Young in Movement Disorders, II and V Meeting, Naples, Italy, 2010
- 2) Focus Group on Parkinson's disease, Naples, Italy, 2011

COURSES AND STAGES

- 1) ASNP Course on peripheral neuropathies – Small fibers neuropathies. Telese Terme (BN), Italy, 2015.
- 2) XXXI Course in Clinical Electroencephalography. Gargnano (BS), Italy, 2015.
- 3) XIII Italian Clinical Neurophysiology Society course in Electromyography and Evoked Potentials. Sorrento, Italy, 2014.
- 4) 6th Annual MDS-ES Summer School for young neurologist. London, UK, 26-28 Luglio 2013.
- 5) X ASC Course on diagnosis and treatment of headaches. Frascati (RM), Italy, 2011-2012
- 6) 12th EFNS Academy for Young Neurologist. Staré Splavy, Czech Republic, 2011.

PROFESSIONAL SERVICE ACTIVITIES

Clinical activity as neurologist and neurophysiologist at I Division of Neurology, University of Campania "Luigi Vanvitelli"