

CURRICULUM VITAE

Angelo Poletti Full Professor of Applied Biology



Education/Training

Italian Laurea (5yrs corresponding to 3yrs Bachelor's Degree+2yrs BSc) in Chemistry and Pharmaceutical Technologies, Università degli Studi di Milano (1984)
Master (3yrs MSc) Degree in Experimental Endocrinology, Università degli Studi di Milano (1987)
Ph.D. (4 yrs; Dottorato di Ricerca) in Endocrinological Sciences, Univ degli Studi di Milano (1993)

Employment and Experience/Position

Fellow at the Istituto di Endocrinologia, Università degli Studi di Milano (1986-1990)
Fellow at the Department of Cell Biology, Baylor College of Medicine, Houston TX, USA (1990-1992).
Assistant Professor of Endocrinology, Università degli Studi di Milano (1993-2002)
Associate Professor of Applied Biology, Università degli Studi di Milano (2002-2011)
Full Professor of Applied Biology, Università degli Studi di Milano (2011-present)

Awards, Distinctions and Ongoing Grants

2013-2015 Director of the PhD program in Endocrinological and Metabolic Sciences, Università degli Studi di Milano, Italy

2014-present Coordinator of Section of Biomedicine and Endocrinology (DiSFeB/UNIMI)

Awards and Other Professional Activities

- Chiodini's Award for the studies in Neuroendocrinology
- Member of the Steering Committee and of the Scientific Board of the Center of Excellence on Neurodegenerative Diseases of the University of Milan, Italy
- Member of the Steering Committee of the InterUniversity Center on Neurodegenerative Diseases: Universities of Florence, Rome (Tor Vergata), Genoa and Milan, Italy

Ongoing Grants

- P.I. Project of the AriSLA Foundation "Upregulation of HSPB8 as potential therapeutic approach in familial and sporadic ALS". (2012-ongoing)
- P.I. of the Operative Unit of the project of the Regione Lombardia "From cell models to clinical trials: the Kennedy's disease as model for translational research" (2012-ongoing)
- P.I. Project of the AFM-Telethon France grant "Selective autophagic response to proteotoxicity in motoneurons and muscle of motor neuron diseases" (2013-ongoing)
- P.I. TeleThon Italy n. GGP14039 "Motorneuron degeneration in Spinal and Bulbar Muscular Atrophy: from the molecular mechanisms to the potential therapeutical approaches " (2014-ongoing)
- P.I. of the Operative Unit of the project of the AriSLA Foundation "VCP and autophagolysosomal pathway: guardians of proteostasis and stress granule dynamics. Unraveling their implications in ALS". (2014-ongoing)
- Coordinator of the project of the "Fondazione Cariplo, Italy" "RAN-translation of normal and expanded nucleotide repeat containing transcripts to neurotoxic polypeptides in neurodegenerative diseases" (2015-ongoing)
- P.I. of the Operative Unit on the project Joint Programme - Neurodegenerative Disease Research (JPND) "Stress granules and proteostasis in motor neurons: towards a mechanistic understanding of ALS" (2016-ongoing)

Research interests

1) *Motoneuronal degeneration and skeletal muscle atrophy in Spinal and Bulbar Muscular Atrophy (SBMA or Kennedy's disease)*. Determination of the neurotoxic effects induced by the mutation of the androgen receptor (elongation of the polyglutamic tract in the N-terminal transactivation domain of AR) in Kennedy's disease; preparation of cellular models of SBMA using immortalized motoneuronal cells transfected with the cDNAs coding for the mutated androgen receptors. Use of SBMA patients derived iPSCs differentiated to motoneuronal cells and adipose mesenchymal cells.

2) *Motoneuronal degeneration and skeletal muscle atrophy in Amyotrophic Lateral Sclerosis (ALS)*. Using cellular models similar to those described in point 1, but obtained with cDNA coding for the wt and mutated form of the Superoxide dismutase (SOD1), TDP-43 and the dypeptides formed by RAN translation from the C9ORF72 gene product all responsible for a number of familiar ALS.

Research is aimed to understand the role of the protein quality control (PQC) system (chaperones, UPS and autophagy) in the protection against misfolded proteins neurotoxicity and to find drugs able to potentiate the PQC system response.

Most relevant meetings organized:

He organized several meetings on neurodegenerative diseases and Neuroscience (the most relevant is the National Congress of the Italian Society for Neuroscience in 2009. He also organized the "Triplet Repeat Diseases" Meeting, the "Models to study Neurodegenerative diseases" Meeting the "Molecular and Cellular Approaches to find new Therapies for Neurodegenerative Diseases" and a series of 6 edition of the meeting on the "Molecular Mechanisms of Neurodegeneration". He also organized a "Course on Molecular Biology in Endocrinology").

Symposia: He organized more than 10 symposia at International or national congresses. The most relevant at the IBRO world meeting in Neuroscience, at the FENS and ESN meetings, at the Italian Society for Neuroscience Meetings, at the Italian Federation of Life Sciences meeting

Chairpersonships. He served as Chairperson or discussant at more than 20 International or national congresses in Neuroscience

Presentations: He delivered 5 plenary lectures, 55 invited presentation at Symposia, 25 Oral Communication at meetings and more that 30 Seminars in Italian or Foreign Universities.

Member of Scientific Societies: Endocrine Society U.S.A. 1992-1998; European Neuropeptide Club (ENC) 1994-1996; International Study Group for Steroid Hormones 1995-1998; Italian Society for Endocrinology 1997-2000; American Association for Cell Biology 1997-2000; Italian Society for Neuroscience (SINS) 1998-present; European Federation o Neurosciences Society (FENS) 1998-present; European Society for Neuropatolog 1998-2000; Associazione dei Biologi Cellulari e del Differenziamento 1998-present; Italian Society of Medical Andrology, 2004-2006; Italian Collaborative Group for the Study of Motor Neuron Diseases, 2004-present; Associazione italiana di Biologia e genetica 2003-present. Europ Neurochemistry Soc (2012-present)

Editorial Activity:

Member of the Editorial Advisory Board of Scientific Reports, Nature Publ Group, Behavioural Neurology, Frontiers in Cellular Neuroscience, Open Endocrinology Journal, Open Endocrinology Reviews

Guest editor of Special Issue of:

Progress in Neurobiology : "The Neurotoxicity of Mutant Proteins" Prog. Neurobiol. 2012, Vol 97, Issue 2. and Prog. Neurobiol. 2012, Vol 99, Issue 3.

Brain Research Bulletin : "Triplet Repeat Diseases: From Basic to Clinical Aspects" Brain Res. Bull. 2001, vol 56.

Reviewing Editor of Antioxidants & Redox Signaling

Reviewer for: Annals of Neurology, Antioxidant & Redox Signaling, ASN NEURO, Biochemical Pharmacology, Biochimia and Biophysia Acta, BMC Clinical Pharmacology, Brain, Brain Research, Brain Research Bulletin, Cell Death and Differentiation, Disease Models and Mechanisms, Endocrine Related Cancers, European Journal of Neuroscience, European Journal of Pharmacology, Expert Opinion on Therapeutic Targets, Frontiers in Neuroendocrinology, Frontiers in Cellular Neuroscience, Gene, Hormones and Behavior, Human Molecular Genetics, Journal of Cancer Biology & Research, Journal of Cell Science, Journal of Cellular and Molecular Medicine, Journal of Comparative Neurology, Journal of Endocrinological Investigation, Journal of Molecular Neuroscience, Journal of Pharmacy and Pharmacology, Journal in Neuroendocrinology, Journal Neurochemistry, Journal Steroid Biochemistry and Molecular Biology, Life Sciences, Molecular Biology Reports, Molecular and Cellular Biochemistry, Molecular Endocrinology, Neurobiology of Aging, Neurobiology of Disease, Neurochemistry International, Neurological Sciences, Neuron Glia Biology, Neuroscience, Neuroscience Letters, Pharmacological Research, PLOS one, Progress in Neurobiology, Prostaglandins leukotrienes and essential fatty acids, Psychoneuroendocrinology, The Lancet "Neurology", Trends in Pharmacological Sciences, Scientific Reports

Reviewer activity International Grants:

"Association Francaise contre les Myopathies (AFM) (Telethon France); National Research Council of the Romanian Government; Motor Neuron Disease Association; National Science Centre, Poland; French Association ARSla; French National Research Agency (ANR) Evaluation Committee; Wellcome Trust.

Author of over 100 peer review publication (about 60% in prominent positions (first/last/Corr)); H-index=35; total citation=4067; IF(average)=4,907

Author of 11 Book Chapters; more than 300 Abstracts of Lectures, Symposia Presentation oral communications and posters to National and International meetings in Neuroscience, Endocrinology, Cell and Molecular Biology

Most relevant publications (past ten years)

- Synergic pro-degradative activity of trehalose and bicalutamide on the mutant Androgen Receptor responsible for Spinal and Bulbar Muscular Atrophy. Giorgetti E., Rusmini P., Crippa V., Cristofani R., Boncoraglio A., Cicardi M.E., Galbiati M., Poletti A. *Hum Mol Genet* (2015) 24(1):64-75
- Differences in protein quality control contribute to phenotype variability in two mouse models of familial amyotrophic lateral sclerosis. Marino M., Papa S., Crippa V., Nardo G., Peviani M., Cheroni C., Trolese M.C., Lauranzano E., Bonetto V., Poletti A., DeBiasi S., Ferraiuolo L., Shaw P.J., Bendotti C. *Neurobiol Aging* (2015) 36:492-504.
- Aberrant autophagic response in the muscle of a knock-in mouse model of Spinal and Bulbar Muscular Atrophy. Rusmini P., Polanco M.J., Cristofani R., Cicardi M.E., Meroni M., Galbiati M., Piccolella M., Messi E., Giorgetti E., Lieberman A., Milioto C., Rocchi A., Aggarwal T., Pennuto M., Crippa V., Poletti A. *Sci. Rep.* 5, 15174; doi: 10.1038/srep15174 (2015).
- The Role of the protein quality control system in SBMA. Rusmini P., Crippa V., Cristofani R., Rinaldi C., Cicardi M.E., Galbiati M., Carra S., Malik B., Greensmith L., Poletti A. *J Mol Neurosci* (2015) in press
- Muscle cells: motor neuron targets and contributors of their disorders. Galbiati M., Crippa V., Poletti A. *Brain Disord Ther* (2015) 4:3
- Modulators of Estrogen Receptor inhibit proliferation and migration of prostate cancer cells. Piccolella M., Crippa V., Messi E., Tetel M.J., Poletti A. *Pharmacol Res* 79C (2014) 13-20.
- Neuritin 1 promotes migration of immortalized neurons modulating microtubule stability. Zito A., Cartelli D., Cappelletti G., Cariboni A., Poletti A., Galbiati M. *Brain Struct Funct* (2014) 219(1):105-118
- Androgens affect muscle, motor neuron and survival of a mouse model of SOD1-related amyotrophic lateral sclerosis. Aggarwal T., Polanco M.J., Scaramuzzino C., Rocchi A., Milioto C., Emionite L., Ognio E., Sambataro F., Galbiati M., Poletti A., Pennuto M. *Neurobiol Aging* (2014) 35:1929-1938.
- BAG3 induces the sequestration of proteasomal clients into cytoplasmic puncta: implication for a proteasome-to-autophagy switch. Minoia M., Boncoraglio A., Vinet J., Morelli F., Brunsting J.F., Poletti A., Krom S., Reits E., Kampinga H.H., Carra S. *Autophagy* (2014) 10(9):1603-21
- Inhibition of autophagy, lysosome and VCP function impairs stress granule assembly. Seguin S.J., Morelli F.F., Vinet J., Amore D., Poletti A., Rubinsztein D.C., Carra S. *Cell Death Diff* (2014) 21(12):1838-51
- ALS-related misfolded protein management in motor neurons and muscle cells. Galbiati M., Crippa V., Rusmini P., Cristofani R., Cicardi M.E., Giorgetti E., Onesto E., Messi E., Poletti A. *Neurochem Int* 79 (2014) 70-78
- Human Adipose-derived Mesenchymal Stem Cells as a new model of Spinal and Bulbar Muscular Atrophy. Dossena M., Bedini G., Rusmini P., Canazza A., Giorgetti E., Tosetti V., Salsano E., Sagnelli A., Navone S., Marfia G., Alessandri G., Corsi F., Fischbeck K.H., Parati E.A., Pareyson D., Poletti A. *Plos ONE* (2014) 2014 Nov 13;9(11):e112746
- Clearance of the mutant AR in motoneuronal models of Spinal and Bulbar Muscular Atrophy. Rusmini P., Crippa V., Giorgetti E., Boncoraglio A., Cristofani R., Carra S., Poletti A. *Neurobiol Aging* (2013) 34(11): 2585-2603.
- Androgen receptor activation by polychlorinated biphenyls: epigenetic effects mediated by the histone demethylase Jarid1b. Casati L., Sendra R., Poletti A., Negri-Cesi P., Celotti F. *Epigenetics* (2013) 8(10):1061-1068
- Differential autophagy power in the spinal cord and muscle of transgenic ALS mouse models. Crippa V., Boncoraglio A., Galbiati R., Aggarwal T., Rusmini P., Giorgetti E., Cristofani R., Carra S., Pennuto M., Poletti A. *Front Cell Neurosci* (2013) 7:234
- Motor neuronal and muscle selective removal of ALS-related misfolded proteins. Crippa V., Galbiati M., Boncoraglio A., Rusmini R., Onesto E., Giorgetti E., Cristofani R., Zito A., Poletti A. *Biochem Soc T* (2013) 41(6) 1598-1604
- Different anti-aggregation and pro-degradative functions of the members of the mammalian sHSP family in neurological disorders. Carra S., Rusmini P., Crippa V., Giorgetti E., Boncoraglio A., Naujock N., Meister M., Minoia M., Kampinga H.H., Poletti A. *Philos T R Soc B* (2013) 368:(1617):20110409
- Dysfunction of constitutive and inducible ubiquitin proteasome system in amyotrophic lateral sclerosis: implication for protein aggregation and immune response. Bendotti C., Cheroni C., Marino M., Fontana E., Crippa V., Poletti A., De Biasi S. *Progr Neurobiol* (2012) 97:101-126
- CAG repeat length in androgen receptor gene is not associated with amyotrophic lateral sclerosis. Bruson A., Sambataro F., Querin G., D'Ascenzo C., Palmieri A., Agostini J., Gaiani A., Angelini C., Galbiati M., Poletti A., Pennuto M., Pegoraro E., Clementi M., Soraru' G. *Eur J Neurol* (2012)

19:1373-1375.

- The anabolic/androgenic steroid Nandrolone exacerbates gene expression modifications induced by mutant SOD1 in muscles of mice models of amyotrophic lateral sclerosis. Galbiati M., Onesto E., Zito A., Crippa V., Rusmini P., Mariotti R., Bentivoglio B., Bendotti C., Poletti A. *Pharmacol Res* (2012) 65:221-230.
- Alteration of protein folding and degradation in motor neuron diseases: implications and protective functions of Small Heat Shock proteins. Carra S., Crippa V., Rusmini P., Boncoraglio A., Minoia M., Giorgetti E., Kampinga H. H., Poletti A. *Progr Neurobiol* 97 (2012) pp. 83-100
- Dysregulation of axonal transport and motoneuron diseases. Sau D., Rusmini R., Crippa V., Bolzoni E., Onesto E., Ratti A., Poletti A. *Biol Cell* (2011) 103, 87-107
- Muscle cells and Motoneurons Differentially Remove Mutant SOD1 Causing Familial Amyotrophic Lateral Sclerosis. Onesto E., Rusmini P., Crippa V., Ferri N., Zito A., Galbiati R., Poletti A. *J Neurochem* (2011) 118:266-280
- The androgen derivative 5alpha-androstane-3beta,17beta-diol inhibits tumor necrosis factor α and lipopolysaccharide induced inflammatory response in human endothelial cells and in mice aorta. Norata G.D., Cattaneo P., Tibolla G., Poletti A., Catapano A.L. *Atherosclerosis* (2010) 212:100-106
- The Small Heat Shock Protein B8 (HspB8) promotes autophagic removal of misfolded proteins involved in Amyotrophic Lateral Sclerosis (ALS). Crippa V., Sau D., Rusmini P., Boncoraglio A., Onesto E., Bolzoni E., Galbiati M., Fontana E., Marino M., Carra S., Bendotti C., De Biasi S., Poletti A. *Hum Mol Genet* (2010) 19:3440-3456.
- Estrogen receptor β and the progression of prostate cancer: role of 5a-androstane-3 β ,17 β -diol (3 β -Adiol). Dondi D., Piccolella M., Biserni A., Della Torre S., Ramachandran B., Locatelli A., Rusmini P., Sau D., Maggi A., Ciana P., Poletti A. *Endocr-Relat Cancer* (2010) 17:731-742.
- 17-AAG Increases Autophagic Removal of Mutant Androgen Receptor in Spinal and Bulbar Muscular Atrophy. Rusmini P., Simonini F., Crippa V., Cagnin M., Sau D., Onesto E., Bolzoni E., Ferri N., Poletti A. *Neurobiol Dis* (2010) 41:83-95.
- A role of Small Heat Shock Protein B8 (HspB8) in the autophagic removal of misfolded proteins responsible for neurodegenerative diseases. Crippa V., Carra S., Rusmini R., Sau D., Bolzoni E., Bendotti C., De Biasi S., Poletti A. *Autophagy* (2010) 6:958-960.
- Proteasomal and autophagic degradative activities in spinal and bulbar muscular atrophy. Rusmini P., Bolzoni E., Crippa V., Onesto E., Sau D., Galbiati M., Piccolella M., Poletti A. *Neurobiol Dis* (2010) 40:361-369
- Post-translational modifications and expanded polyglutamine toxicity in neurons. Pennuto M., Palazzolo I., Poletti A. *Hum Mol Genet* (2009) 18:R40-47
- Androgens Inhibit Androgen Receptor Promoter Activation in Motor Neurons. Vismara G., Simonini F., Onesto E., Gennaro M., Miceli V., Martini L., Poletti A. *Neurobiol Dis* (2009) 33:395-404.
- A presynaptically toxic secreted phospholipase A2 is internalized into motoneuron-like cells where it is rapidly translocated into the cytosol. Praznikar Z.J., Kovacic L., Rowan E.G., Romih R., Rusmini P., Poletti A., Krizaj I., Pungercar J. *Biochim Biophys Acta - Molecular Cell Research* (2008) 1783:1129-1139
- Androgen regulates neuritin mRNA levels in an *in vivo* model of steroid-enhanced peripheral nerve regeneration. Fargo K.N., Alexander T.D., Tanzer L., Poletti A., Jones K.J. *J Neurotrauma* (2008) 25:561-566
- The role of the polyglutamine tract in Androgen Receptor. Palazzolo I., Gliozzi A., Rusmini P., Sau D., Crippa V., Simonini F., Onesto E., Bolzoni E., Poletti A. *J Steroid Biochem Mol Biol* (2008) vol 108: 245-253
- Androgen regulation of axon growth and neurite extension in motoneurons. Fargo K. N., Galbiati M., Poletti A., Jones K.J. *Horm Behav* (2008) 53:716-28
- Aggregation and Proteasome: The case of elongated polyglutamine aggregation in Spinal and Bulbar Muscular Atrophy. Rusmini P., Sau D., Crippa V., Palazzolo I., Simonini F., Onesto E., Martini L., Poletti A. *Neurobiol Aging* (2007) 28:1099-1111
- Mutation of the SOD1 in ALS: a Gain of a Loss of function. Sau D., De Biasi S., Vitellaro-Zuccarello L., Riso P., Guarnieri S, Porrini M, Simeoni S., Crippa V., Onesto E., Palazzolo I., Rusmini P., Bolzoni E., Bendotti C., Poletti A. *Hum Mol Genet* (2007) 16:1604-1618
- Neuritin (cpg15) enhances the differentiating effect of NGF on neuronal PC12 cells. Cappelletti G., Galbiati M., Ronchi C., Maggioni M.G., Onesto E., Poletti A. *J Neurosci Res* (2007) 85(12):2702-2713
- Lepidium meyenii (Maca) does not exert direct androgenic activities. Bogania P., Simonini F., Iriti M., Rossoni M., Faoro F., Poletti A., Visioli A. *J Ethnopharmacol* (2006) 104:415-417.
- Dihydrotestosterone decreases tumor necrosis factor α and lipopolysaccharide induced endothelial inflammatory response. Short title: DHT and atherosclerosis. Norata G.D., Tibolla P., Seccomandi

P.M., Poletti A., Catapano A.L. J Clin Endocrinol Metab (2006) 91:546-554.

Androgen induced neurite outgrowth is mediated by neuritin in motor neuron cells. Marron T.U., Guerini V., Rusmini P., Brevini T.A.L., Pozzi P., Martini L., Poletti A. J Neurochem (2005) 92:10-20
The Androgen Derivative 5alpha-Androstan-3beta,17beta-diol Inhibits Prostate Cancer Cell Migration through Activation of Estrogen Receptor beta subtype. Guerini V., Sau D., Scaccianoce E., Rusmini P., Ciana P., Maggi A., Martini P.G., Katzenellenbogen B.S., Martini L., Motta M., Poletti A. Cancer Res (2005) 65:5445-5453

Tetracycline-regulated gene expression in the NSC-34-tTA cell line for investigation of motor neuron diseases. Babetto E., Mangolini A., Rizzardini M., Lupi M., Conforti L., Rusmini P., Poletti A., Cantoni L. Mol Brain Res (2005) 140:63-72.

Reflections on the diseases linked to mutations of the androgen receptor. Poletti A., Negri-Cesi P., Martini L. Endocrine (2005) 28:243-262.

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