EDUCATION

1982 Doctor of Medicine, University of Milan, (110/110 cum laude).
1985 Post-doctoral degree in Anesthesiology, University of Milan (70/70 cum laude).

PROFESSIONAL EXPERIENCE

1982-85: Intern in Intensive Care and Anesthesiology, University of Milan
1985-87 Post-doctoral Associate, Laboratory of Paul Greengard (Nobel laureate in Medicine), The Rockefeller University, New York
1988/90 Post-doctoral fellow, Center for the Study of Peripheral Neuropathies, University of Milan
1991-98 Assistant Professor of Pharmacology, University of Milan
1996-98 Member of the Adjunct Faculty, The Rockefeller University, New York
1998-2000 Associate Professor of Pharmacology, University of Bari, Italy
from 1992 Head of the Unit of Neuropsychopharmacology, San Raffaele Scientific Institute, Milan
from 2000 Professor of Pharmacology, San Raffaele Vita-Salute University, Milan
2004-07 Rector's Deputy for International Affairs, San Raffaele Vita-Salute University, Milan
2007-10 Coordinator of the Ph.D. Course in Neuroscience, San Raffaele Vita-Salute University, Milan
2008-11: Dean, Ph.D. School for Molecular Medicine and Rector's Deputy for Ph.D. Programs, San Raffaele Vita-Salute University, Milan
2008-13: Associate Director, Division of Neuroscience, San Raffaele Scientific Institute, Milan
from 2016: President, "Nucleo di Valutazione di Ateneo", San Raffaele Vita-Salute University, Milan;
from 2017: Director, Division of Neuroscience, San Raffaele Scientific Institute, Milan
Awards: Harvard-Armenise Foundation Neuroscience Award; Novartis Prize for Basic Research in Neuroscience

EXPERTISE AND ACCOMPLISHMENTS

The main topics of Valtorta's lab research activity relate to the study of the molecular mechanisms underlying the processes of neuronal development and synaptic function, with emphasis on membrane trafficking, cytoskeletal dynamics and protein phosphorylation events. Among her main achievements the following appear particularly relevant:

- first identification of a specific component of the presynaptic plasma membrane (the alphalatrotoxin receptor);
- demonstration of the selectivity of synaptic vesicle endocytosis;
- demonstration of a phosphorylation-dependent link, modulated by synapsin phosphorylation, between the synaptic vesicle membrane and the nerve terminal cytoskeleton and of its involvement in the regulation of neurotransmitter release and synapse development, with implications for human pathologies, such as epilepsy, autism spectrum disorder and intellectual disability;
- study of the role of the synaptic vesicle protein synaptophysin in neurotransmission and synaptic vesicle targeting.

-In the past 5 years a large effort has been devoted to the study of the pathogenic mechanisms of synaptopathies, using genetically altered mice lacking synaptic proteins. The long-term goal of this project is to decipher the molecular mechanisms through which mutations in genes coding proteins involved in neuronal membrane trafficking lead to neurological disorders, with an emphasis on epilepsy and other paroxysmal disorders.

10 SELECTED PUBLICATIONS

Fabrizia C. Guarnieri, Davide Pozzi, Andrea Raimondi, Riccardo Fesce, Maria M. Valente, Vincenza S. Delvecchio, Hilde Van Esch, Michela Matteoli, Fabio Benfenati, Patrizia D'Adamo and Flavia Valtorta
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Jenny Sassone, Giulia Maia Serratto, Maria Passafaro, Flavia Valtorta, and Andrea Ciammola
The synaptic function of parkin.
Brain, 140: 2265-2272, 2017.

Flavia Valtorta, Fabio Benfenati, Federico Zara, Jacopo Meldolesi
PRRT2: from paroxysmal disorders to regulation of synaptic function.
Trends in Neurosciences, 39: 668-679, 2016.

Pierluigi Valente, Enrico Castroflorio, Pia Rossi, Manuela Fadda, Bruno Sterlini, Romina Ines Cervigni, Cosimo Prestigio, Silvia Giovedì, Franco Onofri, Elisa Mura, Fabrizia Guarnieri, Marta Orlando, Federico Zara, Anna Fassio, Flavia Valtorta, Pietro Baldelli, Anna Corradi, Fabio Benfenati
PRRT2 is a key component of the Ca^{2+}-dependent release machinery.
Cell Reports, 15: 117-131, 2016.

Bellani, A. Mescola, G. Ronzitti, H. Tsushima, S. Tilve, C. Canale, F. Valtorta* and E. Chieregatti* (shared last authorship)
GRP78 clustering at the cell surface of neurons transduces the action of exogenous alpha-synuclein.
Cell Death and Differentiation, 21: 1971-1983, 2014.

F. Fornasiero, A. Raimondi, F. Guarnieri, R. Fesce, F. Benfenati and F. Valtorta
Synapsins contribute to the dynamic spatial organization of synaptic vesicles in an activity-dependent manner.
Journal of Neuroscience, 32:12214-27, 2012.

A. Gärtner, E. F. Fornasiero, S. Munck, K. Vennekens, E. Seuntjens, W.B. Huttner, F. Valtorta and C.G. Dotti
N-Cadherin specifies first asymmetry in developing pyramidal neurons.
EMBO Journal, 31: 1893-903, 2012.

F. Valtorta, J. Meldolesi and R. Fesce
Synaptic vesicles: is kissing a matter of competence?
Trends in Cell Biology, 11: 324-328, 2001

P.E. Ceccaldi, F. Grohovaz, F. Benfenati, E. Chieregatti, P. Greengard and F. Valtorta
Dephosphorylated synapsin I anchors synaptic vesicles to actin cytoskeleton: an analysis by videomicroscopy.
Journal of Cell Biology, 128: 905-912, 1995.

P. Greengard, F. Valtorta, A.J. Czernik and F. Benfenati.
Synaptic vesicle phosphoproteins and regulation of synaptic function.
Science, 259:780-785, 1993.

F. Torri Tarelli, M. Bossi, R. Fesce, P. Greengard and F. Valtorta
Synapsin I partially dissociates from synaptic vesicles during exocytosis induced by electrical stimulation.
Neuron, 9:1143-1153, 1992.