

Name: Salvatore Guarini

Since 1974 constantly at Institute/Section of Pharmacology, Dept of Biomedical Sciences (now Dept. of Biomedical, Metabolic and Neural Sciences) of the University of Modena and Reggio Emilia

Winner of N° 2 awards of Scientific Activity and N° 1 award Riccardo Luzzatto at the University of Modena e Reggio Emilia

Employment and research experience

Lecturer in the SSD E07X (Pharmacology) at the Faculty of Medicine and Surgery, University of Modena and Reggio Emilia until October 31th, 1998. Associate Professor of Pharmacology (SSD BIO/14) at the Faculty of Medicine and Surgery of the same University, November 1st 1998–April 19th 2005. Full Professor of Pharmacology (BIO/14) at the Faculty of Medicine and Surgery, University of Modena and Reggio Emilia since April 20th 2005.

Classes: Pharmacology for Medicine and Surgery, Pharmacology for Midwifery, University of Modena and Reggio Emilia. Further, teaching in several Postgraduate Schools of the Faculty of Medicine and Surgery.

Director of the Postgraduate School in Medical Pharmacology.

Coordinator of the Section of Pharmacology and Molecular Medicine of the Department of Biomedical, Metabolic and Neural Sciences.

Deputy Director of “Centro Interdipartimentale di Ricerca sulle Cefalee e Abuso di Farmaci (CCAF)”.

Member of Doctoral School of Clinical and Experimental Medicine

Coordinator of Erasmus.

Bilateral agreement of international collaboration with the Medical University of Silesia (Poland).

Recent Grants: MIUR (COFIN 1998–1999, COFIN 2000–2001, COFIN 2003–2004; PRIN 2004–2005, PRIN 2007–2008); Cassa di Risparmio di Modena Foundation (2006); Private Corporations (2006 and 2007), FoRST Foundation (2010–2012; 2013-2015); Salsomaggiore’s and Tabiano’s thermal society (2017-2019).

Referee of several international scientific Journals. Several collaborations with research groups of Italy and other countries. Member of several Scientific Societies. Author of 200 scientific papers (for the most part in international journals; impact factor about 570) and 160 communications at national and international Congresses.

Main fields of research: pharmacology of cardiovascular diseases, pharmacology of acute and chronic neurodegenerative diseases.

The most important scientific results have been published in the following Journals: *Circulation, Critical Care Medicine, The Lancet, Experientia, Cardiovascular Research, British Journal of Pharmacology, Free Radical Biology and Medicine, Atherosclerosis, Endocrinology, Journal of Cerebral Blood Flow & Metabolism, Journal of Pharmacology and Experimental Therapeutics, Acta Neuropathologica, Frontiers in Neuroendocrinology, Anesthesiology, Neurobiology of Learning and Memory, Neurobiology of Aging, Progress in Neurobiology* :

The following is a summary of the main results so far obtained

- 1) Demonstration that melanocortin peptides have a life-saving effect in animal and human conditions of circulatory shock: a cholinergic, efferent vagal fibre-mediated, antiinflammatory pathway is operative in conditions of hemorrhagic shock as self-defense mechanism; this pathway is rapidly activated by melanocortin, the first step being the stimulation of central nervous system melanocortin MC4 receptors.
- 2) Demonstration that melanocortin peptides have a protective and life-saving effect also in other severe hypoxic conditions such as respiratory arrest and heart ischemia. The cardioprotective effect is triggered by the activation of central MC3 receptor and is mediated by an efferent vagal pathway.
- 3) Demonstration that melanocortins cause a strong neuroprotection, with a broad therapeutic treatment window, and through the activation of brain MC4 receptors, against ischemic stroke and traumatic brain injury .
- 4) Recent findings demonstrate that melanocortins stimulate neurogenesis in the hippocampus of stroke animals. The newborn neurons are functionally integrated in the neuronal circuits with full functional recovery of animals.
- 5) The most recent findings demonstrate that hydrogen sulfide and melanocortins slow down progression of mild Alzheimer's disease in transgenic mice.

Recently he filed, as co-inventor (owner Univ. Modena and Reggio Emilia), the following patent application: "Ligando dei recettori melanocortinici centrali per l'impiego nel contrastare la progressione di patologie neurodegenerative acute e croniche e nel migliorare il recupero funzionale".

Other patent applications are under preparation.

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