

Jean Rossier MD, PhD

Born June 18, 1944, Citizen of Belgium and Switzerland.

Diplomas

Medical Degree, Université Libre de Bruxelles 1962-1969.

Doctorat d'Etat ès Sciences, University of Paris and Collège de France 1970-1975

Present position

Professor Emeritus, Institut des Neurosciences Paris Seine, Sorbonne Université.

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Positions and Honors in Chronological Order

1967-1969: Medicine internship, Hospitals of the City of Brussels, Belgium.

1970-1975: Doctoral fellow, Professors Jacques Monod and Jacques Glowinski Laboratories, Collège de France, Paris.

1971-2009: Scientist, Institut National de la Santé et de la Recherche Médicale (INSERM), Paris.

1975-1976: Assistant Professor, Biochemistry and Pharmacology, Tufts Medical School, Boston, MA.

1976-1978: Visiting Scientist, Professors Roger Guillemin and Floyd Bloom Laboratories, Salk Institute, San Diego, CA.

1979-1980: Senior Visiting Scientist, Dr Sidney Udenfriend, Roche Institute, Nutley, NJ.

1980-1995: Director, Neuropharmacology Unit, Professor Robert Naquet, CNRS, Gif sur Yvette, France.

1987-1996: European Chief Editor of « Neurochemistry International ».

1993-1997: Councilor, Ministère de l'Enseignement Supérieur et de la Recherche, membre des conseils d'administration de l'Agence du Médicament, de la Fondation Fyssen et de la Fondation pour la Recherche sur l'Epilepsie, Comité Economique du Médicament.

1994-2012: Professor, Chairman and Founder, Department of Biology, Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI) Paris.

1995-1999: Councilor Human Frontier Science Program (HFSP Strasbourg).

1995-2012: Directeur de l'UMR CNRS-ESPCI 7637 «Neurobiologie et Diversité Cellulaire

2001-2008: Councilor Human Proteome Organisation (HUPO).

2001-2005: Councilor « Functional Genomics » European Science Foundation (ESF) Strasbourg.

2002: Membre (Foreign Member) de l'Institut, Académie des Sciences, Paris.

2006: Grand Prix Claude Bernard de la Ville de Paris.

2007: Member of European Academy of Science, Liège, Belgium.

2011: Nature lifetime award for mentorship, Nature Publishing Group, London, UK.

2012: Membre (Foreign Member) de l'Académie Royale de Médecine de Belgique, Brussels, Belgium.

2012-2015: Professor, Center for Psychiatry and Neurosciences, INSERM Sainte-Anne Hospital, Paris.

2015: Julius Axelrod Award in Pharmacology, American Society for Pharmacology and Experimental Therapeutics (ASPET).

2015-date: Professor Emeritus, Neurosciences Paris Seine, Université Pierre et Marie Curie, Paris.

2019: Blaise Pascal Medal from European Academy of Science (EURASC).

Scientific achievements

Jean Rossier has published more than 300 original reports in peer reviewed scientific journals. Citations: 26500, H index: 81.

Jean Rossier is a neuroscientist. He has made several major discoveries in neuropharmacology.

Working on neuropeptides he discovered with Guillemin, Bloom and Udenfriend multiple opioid peptides delineating several distinct neuronal systems involved in pain and reward.

Turning his interests on GABAA receptors, he made the seminal observation that several inverse agonists facilitate performance in learning and memory tasks. This has led to the

development by the pharmaceutical industry of specific inverse agonists that are candidates for promnesic drugs presently tested in trisomic patients.

In protein chemistry, he discovered two new post-translational modifications, polyglycylation and polyglutamylation; the latter being recent targets in oncology and neurodegenerative diseases.

His most widely known discovery is the invention of single cell RT-PCR (scRT-PCR) after patch-clamp, the pioneer form of a new discipline “Single Cell Genomic”. The association of molecular biology (RT-PCR) and cell electrophysiology (patch-clamp) led to several discoveries. With scRT-PCR, the heteromeric organization of ionotropic synaptic receptors was deciphered and led to development of more specific molecules for treatments of neurological and neuropsychiatric diseases.

To-day scRT-PCR and single cell genomic are not limited to brain research and have been extended to all disciplines of biology and medicine leading to the present large Human Cell Atlas project. The key-words “single cell PCR” and “Single Cell Genomic” retrieves respectively 24500 and 99500 publications on Pubmed.

Since 1995, Jean Rossier has developed multidisciplinary approaches to characterize the diversity of neocortical interneurons focusing on their respective functional roles in local blood flow control, brain plasticity and long-term memory. Jean Rossier is presently working on PeriNeuronal Net (PNN), a form of extracellular matrix surrounding specific neurons. PNN blocks neuronal plasticity and is associated with long-term memory.

Current Grant Support

2015-2019: ANR Neuroscience P2N2 “Proteases and the PeriNeuronal Net” €545000.

Selection of 30 publications over 300.

Citations 26500. H index 81.

Rossier, J. Choline acetyltransferase: a review with special reference to its cellular and subcellular localization. *Int. Rev. Neurobiol.* 20, 283-337, **1977**. Cited 130.

Guillemin, R., Vargo, T., **Rossier, J.**, Minick, S., Ling, N., Rivier, C. & Bloom, F. Beta-endorphin and adrenocorticotropin are secreted concomitantly by the pituitary gland. *Science* 197, 1367-1369, **1977**. Cited 1672.

Bloom, F., Battenberg, E., **Rossier, J.**, Ling, N. & Guillemin, R. Neurons containing beta-endorphin in rat brain exist separately from those containing enkephalin: Immunohistochemical studies. *Proc. Natl. Acad. Sci., USA* 75, 1591-1595, **1978**. Cited 808.

Rossier, J., French, E.D., Rivier, C., Ling, N., Guillemin, R. & Bloom, F.E. Foot-shock induced stress increases beta-endorphin levels in blood but not brain. *Nature* 270, 618-620, **1977**. cited 682.

Rossier, J., Vargo, T.M., Minick, S., Ling, N., Bloom, F.E. & Guillemin, R. Regional dissociation of beta-endorphin and enkephalin contents in rat brain and pituitary. *Proc. Natl. Acad. Sci., USA* 74, 5162-5165, **1977**. Cited 595.

Vanderhaeghen JJ, Lotstra F, Liston DR & **Rossier J**. Proenkephalin,[Met]enkephalin, and oxytocin immunoreactivities are colocalized in bovine hypothalamic magnocellular neurons. *Proc. Natl. Acad. Sci., USA* 80, 5139-83, **1983**. Cited 104.

Venault, P., Chapouthier, G., Prado de Carvalho, L., Simiand, J., Morre, M., Dodd, R.H. & **Rossier, J**. Benzodiazepine impairs and beta-carboline enhances performance in learning and memory tasks. *Nature* 321, 864-866, **1986**. Cited 541.

Eddé, B., **Rossier, J.**, Le Caer, J.-P., Desbruyères, E., Gros, F. & Denoulet, P. Posttranslational Glutamylolation of Alpha-Tubulin. *Science* 247, 83-85, **1990**. Cited 490.

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Cauli, B., Audinat, E., Lambolez, B., Angulo, M.C., Ropert, N., Tsuzuki, K., Hestrin, S. & **Rossier, J**. Molecular and physiological diversity of cortical nonpyramidal cells. *J. Neurosci.* 17, 3894-3906, **1997**. Cited 662.

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Zhang Y, Bonnan A, Bony G, Ferezou I, Pietropaolo S, Ginger M, Sans N, **Rossier J**, Oostra B, LeMasson G & Frick A. Dendritic channelopathies contribute to neocortical and sensory hyperexcitability in Fmr1(-/y) mice. *Nature Neurosci.* 17, 1701-1709, **2014**. Cited 82.

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