

BIOGRAPHICAL SKETCH

NAME Ada Maria Tata, PhD		POSITION TITLE Full Professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
University of Roma, Sapienza, Italy	Master Degree	02/1989	Biological Sciences
University of Roma, Sapienza, Italy	School of Neuroscience	1990	Neuroscience
University of Roma, Sapienza, Italy	PhD	02/1994	Peripheral nervous system Development
CSIC –Barcelona, Spain	Post doc	1995	Cholinergic system in dorsal root ganglia

A. Personal Statement

My main interest is to study the signals that mediate neuron-glia interaction in both physiological and pathological conditions. Particular attention is paid to the role of neurotransmitters and in particular to the neurotransmitter acetylcholine. Recently my field of interest has expanded to myelinating glia and the processes that control their differentiation and physiology and their role during peripheral nerve regeneration.

An other field of interest is also the study of glia in pathological conditions such as brain tumors and neuroinflammation that characterizes both aging and neurodegenerative diseases.

B. Positions and Honors

- Positions and Employment

March 2022- today	Full Professor, Department of Biology and Biotechnologies Charles Darwin , University of Rome Sapienza
March 2017	National Scientific Habilitation as Full Professor in Cytology and Comparative Anatomy (BIOS-04A)
2005-2022	Associate Professor Dept. of Cell and Developmental Biology (2005-2010) and Department of Biology and Biotechnologies Charles Darwin , University of Rome Sapienza (2010-2022)
1995-2005	Researcher at Dept. of Cell and Developmental Biology, University of Rome Sapienza
Jan1995- Dec 1995	Post- Doc at CSIC, Dept of Neurochemistry, Barcelona, Spain
1991-1994	PhD student Evolutionary Biology
1990-1991	Postgraduate fellowship Academia Nazionale dei Lincei, Giuseppe Levi fellowship

▪ **Other Experience and Professional Memberships**

Institutional responsibilities

Oct 2022 –2025 President of Biological Sciences, University of Rome, Sapienza
Oct 2020 – Director of Master II level in Biology of Nutrition for Human
Reproduction
Nov. 2023-2025 Representative of the Full Professor in the Council of Faculty of
Mathematics, physics and natural sciences

Scientific society membership

Member of Italian Society of Developmental and Cell Biology (GEI-SIBSC)
President of the Educational Committee of the GEI-SIBSC Society 2019-2021
Member of the Board of the GEI-SIBSC (2025-2028)
President of the Educational Committee of the GEI-SIBSC Society (2025-2028)
European Developmental Biology Society (ECBS)
Member of SINS (Italian Society of Neuroscience) and FENS (European Federation of
Neuroscience)
Italian Society of Human Reproduction (SIRU)
Italian Society of embryology, research and reproduction (SIERR)
Member of the CIB Consortium (Interuniversity Consortium for Biotechnology)

Editorial activity

Member of the Editorial board of *Frontiers in Neurology*; *Frontier in Neuroimmunology*; *Biomedicines*
Reviewer: MDPI Journals; *Frontiers in Neurology*; *Frontiers in Neurosci*, *Scient. Rep. Mol.*
Pharmacol. Brain
Reviewer for PRIN, MIUR, FIRB Projects (Reprise-Cineca registry)
Editorial *Antiinflamm Antiallergy Agents Med Chem.* 2013;12(2):107-8.
doi: 10.2174/1871523011312020001.

Teaching/education

Since 1998, at the University of Rome Sapienza
Holder of the courses: Embryology. Developmental Biology (Bachelor Degree in Biological Sciences)
and Developmental Neurobiology (Master degree in Neurobiology)
Since 2024: Teachers' course- Methodologies to study Cell Biology - A028

▪ **Honors**

Teaching Award 2013-2014 Faculty of Mathematical, Physical and Natural Sciences
Teaching Award 2015-2016 Faculty of Mathematical, Physical and Natural Sciences
Teaching Award 2017-2018 Faculty of Mathematical, Physical and Natural Sciences

C. Peer-reviewed Publications (2020-2025)

Researcher unique identifier: [orcid.org/ 0000-0003-4868-5435](https://orcid.org/0000-0003-4868-5435)
Scopus ID 55664013000

-Iliaria Cristofaro, Chiara Limongi, Paola Piscopo, Alessio Crestini, Claudia Guerriero, Mario Fiore, Luciano Conti, Annamaria Confaloni, **Ada Maria Tata**. M2 Receptor Activation Counteracts the Glioblastoma Cancer Stem Cell Response to Hypoxia Condition. *Int. J Mol Sci.*, 2020, 21(5). pii: E1700. doi: 10.3390/ijms21051700.

-Luciana Dini, Stefano Tacconi, Elisabetta Carata, **Ada Maria Tata**, Cristian Vergallo, Elisa Panzarini.. Microvesicles and exosomes in metabolic diseases and inflammation. *Citokine & Growth Factor Reviews*, 2020, 51: 27-39. Doi. [10.1016/j.cytogfr.2019.12.008](https://doi.org/10.1016/j.cytogfr.2019.12.008).

-Iliaria Cristofaro, Francesco Alessandrini, Zaira Spinello, Claudia Guerriero, Mario Fiore, Luciana Dini, Luciano Conti and **Ada Maria Tata**. Cross interaction between M2 muscarinic receptor and Notch1/EGFR pathway in human glioblastoma cancer stem cells: effects on cell cycle progression and survival. *Cells*, 2020, 9, 657; doi:10.3390/cells9030657

-Cristian Vergallo, Elisa Panzarini, Bernardetta Anna Tenuzzo, Stefania Mariano, **Ada Maria Tata**, Luciana Dini. Moderate Static Magnetic Field (6 mT)-induced lipid 2 rafts rearrangement increases silver NPs uptake in 3 Human Lymphocytes. *Molecules*, 2020, 25, 1398; doi:10.3390/molecules25061398.

-Piovesana R., Faroni A., Taggi M., Matera A, Soligo M, Canipari R., Manni L, Reid A.J. and **Tata A.M.** Nerve Growth Factor production in rat Schwann cells and in Schwann-like adipose- derived stem cells: cholinergic modulation and implication in peripheral nerve regeneration. *Sci. Reports*, 2020, 10(1):7159. doi: 10.1038/s41598-020-63645-w.

-Elena Pompili, Viviana Ciraci, Stefano Leone, Valerio De Franchis, Pietro Familiari, Roberto Matassa, Giuseppe Familiari, **Ada Maria Tata**, Lorenzo Fumagalli, Cinzia Fabrizi. Thrombin regulates the ability of Schwann cells to support neuritogenesis and to maintain the integrity of the nodes of Ranvier. *Europ. J. Hystochem*, 2020, 64(2). doi: 10.4081/ejh.2020.3109

-Gatta V., Mengod G, Reale M and **Tata AM.** Possible correlation between cholinergic system alterations and neuro/inflammation in multiple sclerosis. *Biomedicines* 2020, 8, 153; doi:10.3390/biomedicines8060153.

-Alejandro J. Español, Agustina Salem,, María Di Bari, Ilaria Cristofaro, Yamila Sanchez, **Ada Maria Tata**, María E. Sales. The metronomic combination of paclitaxel with cholinergic agonists inhibits triple negative breast tumor progression. Participation of M2 receptor subtype. *PlosOne* 2020, 15(9): e0226450. <https://doi.org/10.1371/journal.pone.0226450>.

- Roberta Piovesana, Alessandro Faroni, **Ada Maria Tata** & Adam J Reid· Functional characterisation of muscarinic receptors in human Schwann cells. *Int J Mol. Sci.* 2020, 21, 6666, <http://dx.doi.org/10.3390/ijms21186666>

-Anna Maria Lucianò and **Ada Maria Tata**. Functional characterization of cholinergic receptors in melanoma cells. *Cancers*, 2020, 12; 3141. doi.org/10.3390/cancers12113141

-Marta Pernarella, Roberta Piovesana, Carlo Matera, Alessandro Faroni, Mario Fiore, Luciana Dini, Adam J. Reid, Clelia Dallanocce, **Ada Maria Tata.** Effects mediated by the $\alpha 7$ nicotinic acetylcholine receptor on cell proliferation and migration in rat adipose-derived stem cells. *Eur. J. Histochem* . 2020 , 64(s2):3159.

-Elisa Panzarini, Stefano Tacconi, Elisabetta Carata, Stefania Mariano, **Ada Maria Tata** and Luciana Dini. Molecular characterization of temozolomide-treated and non temozolomide-treated glioblastoma cells released extracellular vesicles and their role in the macrophage response. *Int. J.Mol. Sci.* 2020, 21, 8353; doi:10.3390/ijms21218353

-Anna Maria Lucianò, Elisa Perciballi, Mario Fiore, Donatella Del Bufalo, **Ada Maria Tata**. The combination of the M2 muscarinic receptor agonist and chemotherapy affects drug resistance in neuroblastoma cells” *Int J Mol Sci.* 2020, 21, 8433, doi.org/10.3390/ijms21228433.

- Panzarini E, Mariano S, Tacconi S, Carata E, **Tata AM**, Dini L. Novel Therapeutic Delivery of Nanocurcumin in Central Nervous System Related Disorders. *Nanomaterials* 2020, 11(1): 1-30. doi: 10.3390/nano11010002.

-Roberta Piovesana, Alessandro Faroni, **Ada Maria Tata** & Adam J Reid· Schwann-like adipose-derived stem cells as promising therapeutic tool for peripheral nerve regeneration: effects of cholinergic stimulation. *Neural Regeneration Research (NRR)*, 2021, 16(6):1218-1220. doi: 10.4103/1673-5374.300433

-Fidaleo Marco, Stefano Tacconi, Carolina Sbarigia, **Ada Maria Tata** and Luciana Dini Current nanocarrier strategies improve vitamin B12 pharmacokinetics, ameliorate patients' lives and reduce costs. *Nanomaterials* 2021, 11, 2. <https://dx.doi.org/10.3390/nano11010002>

-Piovesana R., Salazar Intriago MS, Dini L. **Tata A.M.** Cholinergic modulation of the neuro-inflammation: a focus on $\alpha 7$ nicotinic receptor. *Int J Mol Sci.* 2021, 22, 4912. <https://doi.org/10.3390/ijms22094912>

-Veronica Corsetti, Carla Perrone-Capano, Michael Sebastian Salazar Intriago, Elisabetta Botticelli, Giancarlo Poiana , Gabriella Augusti-Tocco, Stefano Biagioni, **Ada Maria Tata**. Expression of cholinergic markers and characterization of splice variants during ontogenesis of rat Dorsal Root Ganglion neurons. *Int. J Mol Sci* 2021, 2021, 22, 5499. <https://doi.org/10.3390/ijms22115499>

-Maria Di Bari, Vanessa Tombolillo, Francesco Alessandrini, Claudia Guerriero, Mario Fiore, Italia A. Asteriti, Emilia Castigli, Miriam Sciacaluga, Giulia Guarguaglini, Francesca Degrassi, **Ada Maria Tata** ‘M2 muscarinic receptor activation impairs mitotic progression and bipolar mitotic spindle formation in human glioblastoma cell lines’ *Cells* 2021, 10(7):1727. doi: 10.3390/cells10071727.

-Claudia Guerriero, Carlo Matera, Donatella del Bufalo, Marco De Amici, Luciano Conti, Clelia

- Dallanoce and **Ada Maria Tata**. Combined treatments with dualsteric agonist N-8-lper plus chemotherapy drugs affect drug resistance in glioblastoma stem cells. *Cells* **2021**, 10(8):1877. doi: 10.3390/cells10081877.
- Salazar Intriago MS, Piovesana R, Matera A, Taggi M, Canipari R, Fabrizi C, Papotto C, Matera C, De Amici M. Dallanoce C, **Tata AM**. The mechanisms mediated by $\alpha 7$ acetylcholine nicotinic receptors may contribute to peripheral nerve regeneration. *Molecules* **2021**, 26(24), 7668; doi.org/10.3390/molecules26247668
- Alessandra Caporale, Giovanni Battista Bonomo, Giulio Tani Raffaelli, **Ada Maria Tata**, Bice Avallone, Felix Werner Wehrli and Silvia Capuani. Transient anomalous diffusion MRI in excised mouse spinal cord. Comparison among different diffusion metrics and validation with histology. *Frontiers in Neurosci.* **2022**, **15:797642**; doi: **10.3389/fnins.2021.797642**
- Piovesana R. Pisano A, Loreti S, Ricordy R, Talora C, **Tata AM**. Notch signal mediates the cross-interaction between M2 muscarinic acetylcholine receptor and Neuregulin/ErbB pathway: effects on Schwann cells proliferation. *Biomolecules* **2022**, 12, 239. doi.org/10.3390/biom12020239
- Elisabetta Botticelli, Michael Sebastian Salazar Intriago, Roberta Piovesana and **Ada Maria Tata** Analysis of signal transduction pathways downstream M2 receptor activation: effects on Schwann cell migration and morphology. *Life* **2022**; 12, 211. doi.org/10.3390/life12020211
- Guerriero C., Puliatti G., Di Marino T. and **Tata A.M.** "Effects mediated by Dimethyl Fumarate on in vitro Oligodendrocytes: implications in the multiple sclerosis. *Int J Mol Sci.* 2022 23, 3615. <https://doi.org/10.3390/ijms23073615>
- Taggi Marilena; Kovacevic Andjela; Capponi Chiara; Falcinelli Marta; Cacciamani Veronica; Vicini Elena; Canipari Rita; **Tata Ada Maria**. The activation of M2 muscarinic receptor inhibits cell growth and survival in human epithelial ovarian carcinoma. *J Cell Biochem*, 2022, doi: 10.1002/jcb.30303.
- Elisa Maria Turco, Angela Maria Giada Giovenale, Laura Sireno, Alessandra Cammareri, Laura Goracci, Alessandra Di Veroli, Elena Marchesan, Daniel D'Andrea, Barbara Torres, Laura Bernardini, Caterina Marchioretto, Alessio Paone, Serena Rinaldo, Maria Chiara Magnifico, Matteo Della Monica, Diana Postorivo, Anna Maria Nardone, Giuseppe Zampino, Roberta Onesimo, Chiara Leoni, Federico Caicci, Domenico Raimondo, Laura Trobiani, Antonella De Jaco, **Ada Maria Tata**, Daniela Ferrari, Francesca Cutruzzolà, Gianluigi Mazzoccoli, Elena Ziviani, Maria Pennuto, Angelo Luigi Vescovi, Jessica Rosati. Retinoic acid-induced 1 gene haploinsufficiency alters 1 lipid metabolism and causes autophagy defects in Smith-Magenis syndrome. *Cell Death and Disease.* 2022 ,13: 981. <https://doi.org/10.1038/s41419-022-05410-7>
- Piovesana R. Reid AJ, **Tata A.M.** Alternative functions of Neurotransmitters in glial cells: emerging role of Cholinergic Receptors in Schwann Cell Development and Plasticity. *Biomedicines*, 2023 11(1):41. doi: 10.3390/biomedicines11010041.
- Elisabetta Botticelli, Claudia Guerriero, Sergio Fucile, Carlo Matera, Clelia Dallanoce, Marco De Amici, **Ada Maria Tata**. Activation of $\alpha 7$ Nicotinic Acetylcholine Receptors, via Metabotropic Downstream Signaling Pathways, May Improve Schwann Cell Regenerating Potential. *Cells* 2023, 12, 1494. <https://doi.org/10.3390/cells12111494>
- Guerriero, C.; Manfredelli, M.; Matera, C.; Iuzzolino, A.; Conti, L.; Dallanoce, C.; De Amici, M.; Trisciuglio, D.; **Tata, A.M.** M2 Muscarinic Receptor Stimulation Induces Autophagy in Human Glioblastoma Cancer Stem Cells via mTOR Complex-1 Inhibition. *Cancers* **2023**, 20;16(1):25. <https://doi.org/10.3390/cancers16010025>
- Mathew, A.R.; Di Matteo, G.; La Rosa, P.; Barbati, S.A.; Mannina, L.; Moreno, S.; **Tata, A.M.**; Cavallucci, V.; Fidaleo, M. Vitamin B12 Deficiency and the Nervous System: Beyond Metabolic Decompensation—Comparing Biological Models and Gaining New Insights into molecular and Cellular Mechanisms. *Int. J. Mol. Sci.* **2024**, 2;25(1):590 <https://doi.org/10.3390/ijms25010590>. IF
- Claudia Guerriero, Rachele Fanfarillo, Patrizia Mancini, Valentina Sterbini, Giulia Guarguaglini, Luigi Sforna, Antonio Michelucci, Luigi Catacuzzeno, **Ada Maria Tata**. M2 muscarinic receptors negatively modulate cell migration in human glioblastoma cells. *Neurochem Int*, 174:105673, **2024**, <https://doi.org/10.1016/j.neuint.2023.105673>.
- Alessio Crestini, Elena Carbone, Roberto Rivabene, Antonio Ancidoni, Paolo Rosa, **Ada Maria Tata**, Elisa Fabrizi, Nicoletta Locuratolo, Nicola Vanacore, Eleonora Lacorte, and Paola Piscopo. A systematic review on drugs acting as Nicotinic Acetylcholine Receptor Agonists in the Treatment of Dementia. *Cells* **2024**, 13(3):237. <https://doi.org/10.3390/cells13030237>
- Piovesana R., Faroni A, **Tata A.M.** and Reid A.J. Acetylcholine muscarinic M2 receptor maintains human Schwann-like adipose-derived phenotype in the absence of differentiating medium. *Cell Death and Discovery* 2025, 13;11(1):170. doi: 10.1038/s41420-025-02404-0.

-Claudia Guerriero, Giulia Puliatti, Tamara Di Marino, Giulia Scanavino, Carlo Matera, Clelia Dallanoce, **Ada Maria Tata**. Effects of selective $\alpha 7$ nicotinic acetylcholine receptor stimulation in *in vitro* oligodendrocytes: putative implication in neuroinflammation. *Cells*, 2025, 14, 948. doi.org/10.3390/cells14130948

Bibliometric Index

Publications: 92
Citation; 2202 (Scopus)
Hindex ; 27 (Scopus)

D. Research Topic

1. Role of neurotransmitters during the development of peripheral nervous system neurons.
- 2- Neuron-glia interaction: effects of acetylcholine in the control of proliferation and differentiation of myelinating glial cells
- 3- Effects mediated by cholinergic agonists in stem cells obtained from adipose tissue and their glial derivatives.
- 4- Effects mediated by acetylcholine and its receptors in neuro/inflammation in demyelinating diseases.
- 5- Inhibitory effect of M2 muscarinic receptors on growth and survival of cancer stem cells in glioblastoma and neuroblastoma

▪ Recent Research Support

ERA4Health Nutribrain call 2024; Modulation of brain aging through nutrition and healthy lifestyle (Progetto finanziato dalla comunità europea e dal MIUR) 2025-2028 (Italian Unit). Coordinatore internazionale Fernando Rodriguez, University of Murcia.

Ateneo Sapienza 2024: Unveiling the Role of Lamin A/C in Fibro-Adipogenic Progenitors: Implications for Emery-Dreifuss Muscular Dystrophy Pathogenesis (Participant) (2025-2027)

Progetto MIUR , Network CIB 2021 (D.M. 442 10/08/2020). Partecipant. **Responsabile di Unità CIB**. "BIOTECHNOLOGY INNOVATION IN THE ERA OF COVID-19 PANDEMIC" (partecipant)

Progetto MIUR, Network CIB 2019. Partecipant, Responsabile di Unità. NGS and new technologies for drug repositioning and precision therapy”Coordinatore Prof. Roberto Gambari (Università di Ferrara) (partecipant)

Roma, 14/06/2025

I consent to the processing of personal data (art.13 of Legislative Decree 196/2003 and art. 13 GDPR 679/16)



