BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Silvia Maioli	**Assistant Professor and group leader**

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
School of Pharmacy University of Bologna, Italy	BS and MSc	07/2007	Chemistry and Pharmaceutical Technologies
Department of Pharmacology, University of Bologna, Italy	PhD	04/2011	Pharmacology and Toxicology

A. Positions and Honors.

Positions
2011- 2012: Postdoc, NVS Dept, Div. Neurogeriatrics, Karolinska Institutet, Stockholm, Sweden. Main Supervisor: Associate Professor Helena Karlström.

2012 - 2017 Postdoc, NVS Dept, Div. Neurogeriatrics, Karolinska Institutet, Stockholm, Sweden. Main Supervisor: Professor Angel Cedazo Minguez.

2017- present: Scientific Coordinator for Animal Behavior Core Facility at Karolinska Institutet

2017- present: Assistant Professor at NVS Dept, Div. Neurogeriatrics, Karolinska Institutet,

2017- present: Group leader and main supervisor for 3 PhD students (Maria Latorre Leal, Francesca Eroli, Ljerka Delac) at NVS Dept, Div. Neurogeriatrics, Karolinska Institutet

2020- present: Course leader for the postgraduate course 'Behavioral Analysis in Rodents: Classic and Novel Approaches', Dept of Neuroscience, Karolinska Institutet

2021- present: Deputy Representative Committee of Doctoral Education at NVS, Neurogeriatrics.

Interruptions
Aug 2014 - May 2015: maternal leave first child

May 2019 – March 2020: maternal leave second child

Honors
2007 BS and MSc awarded with high honors
2011 Awarded with a Postdoctoral fellowship from CM Lerici Foundation
2012 Awarded with a Postdoctoral fellowship from Blanceflor Boncompagni Ludovisi Foundation
2018 Best talk award at Strategic Area for Neuroscience Conference, Stockholm, Sweden

B. Selected peer-reviewed publications (in chronological order).

Bibliometrics (Web of Science, April 2022)**:**
Total **22** publications (plus **2** preprints)
H-index: **12**, cited **433** times, average citation per item: **20,62**

1. **Maioli S,** Gangarossa G, Locchi F, Andrioli A, Bertini G, Rimondini R. Excitotoxic lesion of the perirhinal cortex impairs spatial working memory in a delayed-alternation task. BEHAVIOURAL BRAIN RESEARCH 2012 230;2 349-54

2. **Maioli S,** Puerta E, Merino-Serrais P, Fusari L, Gil-Bea F, Rimondini R, Cedazo-Minguez A. Combination of apolipoprotein E4 and high carbohydrate diet reduces hippocampal BDNF and arc levels and impairs memory in young mice. Journal of Alzheimer's disease: JAD 2012 32;2 341-55

3. **Maioli S,** Båvner A, Ali Z, Heverin M, Ismail MA, Puerta E, Olin M, Saeed A, Shafaati M, Parini P, Cedazo-Minguez A, Björkhem I. Is it possible to improve memory function by upregulation of the cholesterol 24S-hydroxylase (CYP46A1) in the brain? PloS one 2013 8;7 e68534-

4. **Maioli S,** Lodeiro M, Merino-Serrais P, Falahati F, Khan W, Puerta E, Codita A, Rimondini R, Ramirez MJ, Simmons A, Gil-Bea F, Westman E, Cedazo-Minguez A, Alzheimer's Disease Neuroimaging Initiative. Alterations in brain leptin signalling in spite of unchanged CSF leptin levels in Alzheimer's disease. Aging cell 2015 14;1 122-9

5. Heverin M*, **Maioli S*,** Pham T, Mateos L, Camporesi E, Ali Z, Winblad B, Cedazo-Minguez A, Bjorkhem I. 27-Hydroxycholesterol mediates negative effects of dietary cholesterol on cognition in mice. BEHAVIOURAL BRAIN RESEARCH 2015 278; 356-9 *equal contribution

6. Lodeiro M, Puerta E, Ismail MA, Rodriguez-Rodriguez P, Rönnbäck A, Codita A, Parrado-Fernandez C, **Maioli S,** Gil-Bea F, Merino-Serrais P, Cedazo-Minguez A. Aggregation of the Inflammatory S100A8 Precedes Aβ Plaque Formation in Transgenic APP Mice: Positive Feedback for S100A8 and Aβ Productions The journals of gerontology. Series A, Biological sciences and medical sciences. 2017, 319-328; 72-3

7. Ismail MA*, Mateos L*, **Maioli S,** Merino-Serrais P, Ali Z, Lodeiro M, Westman E, Leitersdorf E, Gulyás B, Olof-Wahlund L, Winblad B, Savitcheva I, Björkhem I, Cedazo-Mínguez A. 27-Hydroxycholesterol impairs neuronal glucose uptake through an IRAP/GLUT4 system dysregulation. The Journal of experimental medicine 2017 214;3 699-717 * equal contribution

8. Loera-Valencia R, Goikolea J, Parrado-Fernandez C, Merino-Serrais P, **Maioli S.** Alterations in cholesterol metabolism as a risk factor for developing Alzheimer's disease: Potential novel targets for treatment. The Journal of steroid biochemistry and molecular biology 2019 190; 104-114

9. Eroli F, Johnell K, Latorre Leal M, Adamo C, Hilmer S, Wastesson JW, Cedazo-Minguez A, **Maioli S.** Chronic polypharmacy impairs explorative behavior and reduces synaptic functions in young adult mice. Aging 2020 12;11 10147-10161

10. Loera-Valencia R, Ismail MA, Goikolea J, Lodeiro M, Mateos L, Björkhem I, Puerta E, Romão MA, Gomes CM, Merino-Serrais P, **Maioli S**, Cedazo-Minguez A. Hypercholesterolemia and 27-Hydroxycholesterol Increase S100A8 and RAGE Expression in the Brain: a Link Between Cholesterol, Alarmins, and Neurodegeneration. Molecular Neurobiology. 2021 doi: 10.1007/s12035-021-02521-8.

11. **Maioli S**, Leander K, Nilsson P, Nalvarte I. Estrogen receptors and the aging brain.
Essays Biochem. 2021 Oct 8:EBC20200162. doi: 10.1042/EBC20200162.

12. Latorre-Leal M, Rodriguez-Rodriguez P, Franchini L, Daniilidou M, Eroli F, Winblad B, Blennow K, Zetterberg H, Kivipelto M, Pacciarini M, Wang Y, Griffiths WJ, Björkhem I, Sandebring Matton A, Merino Serrais P, Cedazo-Minguez, **Maioli S**. Sex-dependent effects of CYP46A1 overexpression on cognitive function during aging. BioRxiv 2021.04.23.441050; doi: https://doi.org/10.1101/2021.04.23.441050

13. Goikolea J, Gerenu G, Daniilidou M, Mangialasche F, Mecocci P, Ngandu T, Rinne J, Solomon A, Kivipelto M, Cedazo-Minguez A, Sandebring-Matton A, **Maioli S.** Serum Thioredoxin-80 is associated with age, ApoE4, and neuropathological biomarkers in Alzheimer's disease: a potential early sign of AD. Alzheimers Res Ther. 2022 Feb 24;14(1):37. doi: 10.1186/s13195-022-00979-9.

14. Emre C, Arroyo-García LE, Do KV, Jun B, Ohshima M, Alcalde SG, Cothern ML, **Maioli S**, Nilsson P, Hjorth E, Fisahn A, Bazan NG, Schultzberg M. Intranasal delivery of pro-resolving lipid mediators rescues memory and gamma oscillation impairment in App$^{NL-G-F/NL-G-F}$ mice. Commun Biol. 2022 Mar 21;5(1):245. doi: 10.1038/s42003-022-03169-3.

Completed list of publications:
https://www.ncbi.nlm.nih.gov/pubmed/?term=maioli+silvia

C. Research Support.

Margaretha av Ugglas Foundation, 04/01/20-04/04/23
Exploring the mechanisms behind metabolic risk factors for Alzheimer's disease. An integrative approach to typify disease pathways, optimise diagnosis and treatment**.**
The major goals of this project are to investigate the effects of risk factors (as alterations of cholesterol metabolism) in relation to specific pathological processes participating in Alzheimer's Disease pathogenesis such as synaptic dysfunction, neurodevelopment, inflammation and oxidative stress in different mouse models. This project includes also AD mouse models and other models of risk factors for AD with multi-medication therapies (with special focus on combinations with anti-hypertensive and cholesterol lowering drugs), as well as biomarkers studies in blood and CSF from AD patients using different medications.
Role: PI, I am responsible for coordinating and designing the studies, the external collaborations and supervise our group members involved (3 doctoral students).

ALF Medicin, the regional agreement on medical training and clinical research between Stockholm County Council and Karolinska Institutet nr. 591522, 12/2020-12/2023
Exploring the mechanisms behind metabolic risk factors for Alzheimer disease. An integrative approach to typify disease pathways, optimise diagnosis and treatment**.**
Using cerebrospinal fluid and blood samples from diverse cohorts of Alzheimer's patients, as well as national registers, we propose a translational human data and framework for identification and validation of specific subtypes of AD based on metabolic risk factors and use of different multi-medications.
Role: co- PI, I am responsible for coordinating the external collaborations and supervise our group members involved.

NIH Prime Award, 1R01AG065209-01A1 30/09/2020 – 31/05/2024
Understanding the role of menopause and estrogen receptor activation for Alzheimer's disease risk.

The major goal of this multidisciplinary project is to compare data acquired across different epidemiologic and experimental data sets, to accurately determine the contribution of estrogenic neuroprotection to the sex differences observed in Alzheimer's Disease, which will lead to better informed recommendations for hormone therapy use and the evaluation of ERβ as clinical target to combat Alzheimer's Disease.
Role: co-PI, I will investigate the role of cholesterol metabolism on estrogen receptor beta signaling by using novel mouse models of cholesterol metabolism and Alzheimer's Disease.

Research agreement with Sanofi Aventis 2019 to present
In vivo studies on Cyp27A1 inhibitors.
The major goals are to investigate different inhibitors of Cyp27A1 and evaluate their possible therapeutic effects in mouse models for hypercholesterolemia and Alzheimer's Disease.
Role: PI at KI, I am responsible for coordinating the project at KI side and supervise our group members involved (3 doctoral students).

KID Funding for 4-year salary for a doctoral student from Karolinska Institute Faculty 01/2022-12/2025
Sex specific effects of CYP46A1 up regulation in brain: roles and implication for cholesterol turnover in neurodegenerative diseases.
Role: PI and main supervisor for a doctoral student

Core Facility Karolinska Institute Funding 20180633, 01/01/19-12/31/24
Animal Behavior Core Facility
The major goals of this project are to establish a new Animal Behavior Core Facility at Karolinska Institutet that provides optimal environment, state-of-the-art instrumentation and technical/educational support to perform behavioral tests in rats and mice ranging from basic phenotype characterization to advanced analyses.
Role: Scientific Coordinator and co-PI