
FRANCESCA MAGNANI, PhD

PATENTS

Development of a peptide analogue that selectively binds to the Angiotensin II-type 2 receptor. Magnani F, Tzakos AG (2012). WO/2013/091883

Mutant G-protein coupled receptors and methods for selecting them. Richard Henderson, Christopher Gordon Tate, Francesca Magnani, Maria Josefa Serrano-Vega, Yoko Shibata, Anthony Johannes Warne (2008). WO/2008/114020

PUBLICATIONS

Piano V, Nenci S, **Magnani F**, Aliverti A, Mattevi A. Recombinant human dihydroxyacetonephosphate acyl-transferase characterization as an integral monotopic membrane protein. *Biochem Biophys Res Commun*. 2016 Dec 2;481(1-2):51-58.

Magnani F, Serrano-Vega MJ, Shibata Y, Abdul-Hussein S, Lebon G, Miller-Gallacher J, Singhal A, Strege A, Thomas JA & Tate CG. A mutagenesis and screening strategy to generate optimally thermostabilized membrane proteins for structural studies. *Nat Prot*. 2016 Jul 28; 11: 1554–1571.

Magnani F, Pappas C, Magafa V, Cordopatis P, Ishiguro S, Ohta N, , Bonvin A, Bosnyak S, Jones ES, Gerothanassis IP, Tamura M, Widdop RE, Tzakos A. Electronic Sculpting of ligand-GPCR subtype selectivity: the case of angiotensin II. *ACS-Chem Biol*. 2014; 9(7):1420-5.

Laursen NS, **Magnani F**, Gottfredsen RH, Petersen SV, Andersen GR. Structure, function and control of complement C5 and its proteolytic fragments. *Curr Mol Med*. 2012; 12(8):1083-97.

Doré AS, Robertson N, Errey JC, Ng I, Hollenstein K, Tehan B, Hurrell E, Bennett K, Congreve M, **Magnani F**, Tate CG, Weir M, Marshall FH. Structure of the Adenosine A(2A) Receptor in Complex with ZM241385 and the Xanthines XAC and Caffeine. *Structure*. 2011;19(9):1283-93.

Shibata Y, White JF, Serrano-Vega MJ, **Magnani F**, Aloia AL, Grisshammer R and Tate CG. Thermostabilization of the neurotensin receptor NTS1. *J Mol Biol*. 2009; 390(2):262-77.

Magnani F, Shibata Y, Serrano-Vega MJ, Tate CG. Co-evolving stability and conformational homogeneity of the human adenosine A2a receptor. *PNAS* 2008; 105(31):10744-9.

Serrano-Vega MJ, **Magnani F**, Shibata Y, Tate CG. Conformational thermostabilization of the beta1-adrenergic receptor in a detergent-resistant form. *PNAS* 2008; 105(3): 877-82.

Magnani F, Tate CG, Wynne S, Williams C, Haase J. Partitioning of the serotonin transporter into lipid microdomains modulates transport of serotonin. *J Biol Chem*. 2004; 279(37):38770-8.

Tate CG, Haase J, Baker C, Boorsma M, **Magnani F**, Vallis Y, Williams DC. Comparison of seven different heterologous protein expression systems for the production of the serotonin transporter. *Biochim Biophys Acta*. 2003; 1610(1):141-53.

Haase J, Killian AM, **Magnani F**, Williams DC. Regulation of the serotonin transporter by interacting proteins. *Biochem Soc Trans*. 2001; 29(Pt 6):722-8. Review.

Pozza M, Bettelli C, **Magnani F**, Mascia MT, Manzini E, Calza L. Is neuronal nitric oxide involved in adjuvant-induced joint inflammation? *Eur J Pharmacol*. 1998; 359(1):87-93.

COMMISSIONS OF TRUST

Since 2011 Anonymous reviewer for Nature Biotechnology

Since 2015 Anonymous reviewer for Fondazione JustItalia

Since 2015 Advisor for the JustItalia foundation.

SCIENTIFIC COMMUNICATION

Since 2014 Contributor to AIRinforma and AIRicerca (Associazione Internazionale Ricercatori Italiani, informa.airicerca.org).

SUPERVISION OF STUDENTS, POSTDOC and STAFF

2016- Dept. of Biology and Biotechnology, University of Pavia, Italy: 2 PhD students

2012-2013 ConfometRx Inc., Santa Clara, California, USA: 2 technicians and 1 postdoc.

2009-2011 Centre for Structural Biology, Department of Molecular Biology, University of Aarhus, Denmark: 1 PhD student, 1 Erasmus student, 1 technician.

2004-2005 Biochemistry Department, Conway Institute, University College Dublin: 1 undergraduate student.

AWARDS

Industry poster award, MRC Showcase in Neuroscience and Mental Health, 26-27 February 2008 (UK).

LABORATORY SKILLS

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- Cell culture (rat primary glial cells, *E.coli*, mammalian cells, insect cells, *Leishmania tarentolae*, hybridomas);
 - Immunocytochemistry and confocal microscopy;
 - Cell proliferation, differentiation and cell death assays;
 - Standard molecular biology and biochemistry techniques;
 - Recombinant expression of prokaryotic and eukaryotic proteins, from small-scale optimisation to large-scale expression (e.g. Wave-bag technology; microcarrier beads);
 - Receptor-ligand binding assays (both radioactive- and fluorescent-based, e.g. Microscale Thermophoresis);
 - Thermostabilisation of membrane proteins for purification and crystallisation by protein engineering, including *in vitro* evolution and the use of fusion proteins;
 - Pre-crystallisation screening of GPCRs using a fluorescent-based platform;
 - Protein purification of native and recombinant proteins (soluble and membrane proteins) and heteromeric complexes;
 - Crystallisation of membrane proteins by standard vapour diffusion, bicelles and lipidic mesophases;
 - Phage-display technology to produce ScFv against membrane proteins;
 - Generation of antigens to raise Fab fragments and single-domain antibodies (nanobodies).