

CURRICULUM VITAE

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Education :

1995 Pharmacist, Université Libre de Bruxelles
1999 PhD in Pharmaceutical Sciences, Université Libre de Bruxelles

Positions held :

1995-1999 PhD fellow of Institut de Recherche Servier. Laboratory of Pharmacology, Institute of Pharmacy, Université Libre de Bruxelles
1999-2003 Post-doctoral Researcher, Laboratory of Biochemistry, Faculty of Medicine, Université Libre de Bruxelles
2003-2004 Post-doctoral fellow of Fondation pour la Recherche Médicale, France. Laboratory of Digestive Physiology and Pathology, INSERM U531, Toulouse, France
2004-2007 Post-doctoral fellow of FNRS, Laboratory of Biochemistry, Faculty of Medicine, Université Libre de Bruxelles
2007-2008 Post-doctoral fellow of FNRS, IRIBHM, Faculty of Medicine, Université Libre de Bruxelles
2008-2009 Post-doctoral Researcher, IRIBHM, Faculty of Medicine, Université Libre de Bruxelles
2009-present Assistant Professor, Faculty of Medicine, Université Libre de Bruxelles
2010-present Professor of Pharmacology, Institute of Pharmacy, Université Libre de Bruxelles

Honors :

2001 Prix Achille HERLANT
2004 Prix Auguste SLOSSE

Research interests :

Study of the functional signalling complexes of olfactory receptors.
Molecular pharmacology of receptors of the GPCR-B family.

Publications :

G. BERKENBOOM, I. LANGER, Y. CARPENTIER, K. GROSFILS AND J. FONTAINE. Ramipril prevents endothelial dysfunction induced by oxidized low-density lipoproteins. Hypertension 1997; 30: 371-376.
I. LANGER, P. VERTONGEN, J. PERRET, J. FONTAINE, G. ATASSI AND P. ROBBERCHEIT. Expression of VEGF and VEGF receptors in human neuroblastomas. Med Ped Oncol 2000; 34: 386-393.
I. LANGER, G. ATASSI, P. ROBBERCHEIT AND A. RÉSIBOIS. Eriochrome Black T inhibits endothelial cell growth through S-phase blockade. Eur J Pharmacol 2000; 399(2-3): 85-90.

R.M. SOLANO, **I. LANGER**, J. PERRET, P. VERTONGEN, M.G. JUARRANZ, P. ROBBERECHT AND M. WAELBROECK. Two basic residues of the h-VPAC₁ receptor second transmembrane helix are essential for ligand binding and signal transduction. *J Biol Chem* 2001; 276(2): 1084-1088.

P. VERTONGEN, R.M. SOLANO, J. PERRET, **I. LANGER**, P. ROBBERECHT AND M. WAELBROECK. Mutational analysis of the human Vasoactive Intestinal Peptide receptor subtype VPAC₂: role of basic residues in the second transmembrane helix. *Br J Pharmacol* 2001; 113 (8): 1249-1254.

I. LANGER, J. PERRET, P. VERTONGEN, M. WAELBROECK AND P. ROBBERECHT. Vasoactive Intestinal Peptide (VIP) stimulates $[Ca^{2+}]_i$ and cyclic AMP in CHO cells expressing G α 16. *Cell Calcium* 2001; 30(4): 229-234.

R. LEMA-KISOKA, N. HAYEZ, **I. LANGER**, P. ROBBERECHT, E. SARIBAN AND C. DELPORTE. Characterization of functional VIP/PACAP receptors in the human erythroleukemic HEL cell line. *Peptides* 2001; 22(12): 2155-2162.

J. PERRET, M. VAN CRAENENBROECK, **I. LANGER**, P. VERTONGEN, F. GREGOIRE, P. ROBBERECHT AND M. WAELBROECK. Mutational analysis of the Glucagon Receptor: similarities with the VIP/PACAP/Secretin Receptors for recognition of the Ligand's Third Residue. *Biochem J* 2002; 362(Pt 2): 389-394.

I. LANGER, P. VERTONGEN, J. PERRET, M. WAELBROECK AND P. ROBBERECHT. A small sequence in the third intracellular loop of the VPAC₁ receptor is responsible for its efficient coupling to the calcium effector. *Mol Endo* 2002; 16(5): 1089-1096.

I. LANGER, P. VERTONGEN, J. PERRET, J. CNUUDE, F. GRÉGOIRE, P. DE NEEF, P. ROBBERECHT AND M. WAELBROECK. VPAC₁ receptors have different agonist efficacy profiles on membrane and intact cells. *Cell Signal* 2002; 14(8): 689-694.

J. PERRET, P. VERTONGEN, R.M. SOLANO, **I. LANGER**, J. CNUUDE, P. ROBBERECHT AND M. WAELBROECK. Two tyrosine residues in the first transmembrane helix of the human VIP receptor play a role in supporting the active conformation. *Br J Pharmacol* 2002; 136(7): 1042-1048.

I. LANGER, P. VERTONGEN, J. PERRET, M. WAELBROECK AND P. ROBBERECHT. A small sequence in the third intracellular loop of the VPAC₁ receptor is responsible for its efficient coupling to the calcium effector. *Biochem Soc T* 2002; 30(4): 447-450.

I. LANGER, P. VERTONGEN, J. PERRET, M. WAELBROECK AND P. ROBBERECHT. Lysine 195 and Aspartate 196 in the first extracellular loop of the VPAC₁ receptor are essential for high affinity binding of agonists but not of antagonists. *Neuropharmacology*, 2003; 44(1): 125-131.

I. NACHTERGAEL, P. VERTONGEN, **I. LANGER**, J. PERRET, P. ROBBERECHT AND M. WAELBROECK. Evidence for a direct interaction between the threonine 11 residue of Vasoactive Intestinal Polypeptide (VIP) and tyrosine 184 located in the first extracellular loop of the VPAC₂ receptor. *Biochem J* 2003; 15 ; 370: 1003-1009.

I. LANGER, F. GRÉGOIRE, I. NACHTERGAEL, P. DE NEEF, P. VERTONGEN AND P. ROBBERECHT. Hexanoylation of a VPAC₂ receptor-preferring ligand markedly increased its selectivity and potency. *Peptides* 2004; 25(2): 275-278.

P. VERTONGEN, C. LANGLET, **I. LANGER**, N. GASPARD AND P. ROBBERECHT. Ac His¹ [D-Phe², K¹⁵, R¹⁶, L²⁷] VIP (3-7)/GRF (8-27) - a VPAC₁ receptor antagonist - is an inverse agonist on two constitutively active truncated VPAC₁ receptors. *Peptides* 2004; 25(11): 1943-1949.

C. LANGLET, N. GASPARD, I. NACHTERGAEL, P. ROBBERECHT AND **I. LANGER**. Comparative efficacy of VIP and analogues on activation and internalization of the recombinant VPAC₂ receptor expressed in CHO cells. *Peptides* 2004; 25(12): 2079-2086.

I. LANGER AND P. ROBBERECHT. Mutations in the carboxy-terminus of the third intracellular loop of the human recombinant VPAC₁ receptor impair VIP stimulated [Ca²⁺]_i increase but not adenylate cyclase stimulation. *Cell Signal* 2005; 17(1): 17-24.

I. LANGER, C. LANGLET AND P. ROBBERECHT. Effect of inactivating mutations on phosphorylation and internalization of human VPAC₂ receptor. *J Mol Endocrinol* 2005; 34(2): 405-14.

I. LANGER, I.G. TIKHONOVA, M.A. TRAVERS, E. ARCHER-LAHLLOU, C. ESCRIEUT, B. MAIGRET, AND D. FOURMY. Evidences that interspecies polymorphism in the human and rat cholecystokinin receptor-2 affects structure of the binding site for the endogenous agonist cholecystokinin. *J Biol Chem* 2005; 280(23): 22198-22204.

C. LANGLET, **I. LANGER**, P. VERTONGEN, N. GASPARD, J.M. VANDERWINDEN AND P. ROBBERECHT. Contribution of the carboxy-terminus of the VPAC₁ receptor to agonist induced receptor phosphorylation, internalization, and recycling. *J Biol Chem* 2005; 280(30): 28034-28043.

M. FOUCAUD, I.G. TIKHONOVA, **I. LANGER**, C. ESCRIEUT, M. DUFRESNE, C. SEVA, B. MAIGRET AND D. FOURMY. Partial agonism, neutral antagonism and inverse agonism at the human wild-type and constitutively active cholecystokinin-2 receptors. *Mol Pharmacol* 2006; 69(3): 680-690.

I. TIKHONOVA, C. BOULÈGUE, **I. LANGER** AND D. FOURMY. Modeled Structure of the whole Regulator G Protein Signaling-2. *Biochem Bioph Res Com* 2006; 341(3): 715-720.

C. LANGLET, I. NACHTERGAEL, P. ROBBERECHT AND **I. LANGER**. Mutation of the phosphorylatable residue Thr⁴²⁹ in Glu of the human VPAC₁ led to a constitutively desensitized receptor. *Peptides* 2006; 27(7): 1865-1870.

I. NACHTERGAEL, N. GASPARD, C. LANGLET, P. ROBBERECHT AND **I. LANGER**. Asn²²⁹ in the third helix of VPAC₁ receptor is essential for receptor activation but not for receptor phosphorylation and internalization: comparison with Asn²¹⁶ in VPAC₂ receptor. *Cell Signal* 2006; 18(12): 2121-2130.

I. LANGER, N. GASPARD AND P. ROBBERECHT. Pharmacological properties of Chinese hamster ovary cells coexpressing two vasoactive intestinal peptide receptors (hVPAC₁ and hVPAC₂). *Br J Pharmacol* 2006; 148(8): 1051-1059.

I.G. TIKHONOVA, E. MARCO, E. LAHLLOU-ARCHER, **I. LANGER**, M. FOUCAUD, B. MAIGRET AND D. FOURMY. Validated ligand binding sites in CCK receptors. next step: computer-aided design of novel CCK ligands. *Curr Top Med Chem* 2007; 7(12):1243-1247.

I. LANGER AND P. ROBBERECHT. Molecular mechanisms involved in vasoactive intestinal peptide receptors activation and regulation: current knowledge, similarities and differences with the A family of G Protein Coupled Receptors. *Biochem Soc T* 2007; 35(4): 724-728.

E. MARCO, M. FOUCAUD, **I. LANGER**, C. ESCRIEUT, I.G. TIKHONOVA AND FOURMY D. Mechanism of activation of a G-protein coupled receptor, the human cholecystokinin-2 receptor. *J Biol Chem* 2007, 282(39):28779-28790.

S. DE MARIA, V. METAFORA, S. METAFORA, G. RAVAGNAN, M. CARTENI, G. PONTONI, A. FACCHIANO, M. LEPRETTI, B. SEVERINO, G. CALIENDO, V. SANTAGADA, **I. LANGER** AND P. ROBBERECHT. Effect of positive charge in VIP 16γ-glutamyl-diamino derivatives on hVPAC₁ and hVPAC₂ receptor function. *J Pept Sci* 2008, 14(1):102-9.

M. FOUCAUD, E. ARCHER-LAHLLOU, E. MARCO, I.G. TIKHONOVA, B. MAIGRET, C. ESCRIEUT, **I. LANGER** AND D. FOURMY. Insights into the binding and activation sites of the receptors for cholecystokinin and gastrin. *Regul Pept* 2008, 145(1-3):17-23.

I. LANGER, K. LEROY, N. GASPARD, J-P. BRION AND P. ROBBERECHT. Cell surface targeting of VPAC₁ receptors: evidences for implication of a quality control system and the proteasome. *BBA-Mol Cel Res* 2008, 1783(9):1663-72.

I. LANGER, I.G. TIKHONOVA, C. BOULEGUE, JP. ESTEVE, S. VATINEL, A. FERRAND, L. MORODER, P. ROBBERECHT AND D. FOURMY. Evidence for a direct and functional interaction between the regulators of G protein signaling-2 and phosphorylated C-terminus of cholecystokinin-2 receptor. *Mol Pharmacol* 2009,75(3):502-513.