

CURRICULUM VITAE

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ACADEMIC DEGREE

Ph.D IMMUNOLOGY 1991. Aix Marseille II University,

PhD. BIOMEDICAL SCIENCES 2000. ULB Medical Faculty Brussels, Belgium.

POSITION

Qualified Research Scientist FNRS.

RESEARCH ACTIVITIES

1984-1985 Characterisation with monoclonal antibodies of Antigens from human thyroid membrane..

1985-1987 Mapping of the antigenic surface of human thyrotropin with monoclonal antibodies. Relationship between immunological and biological activity of the thyrotropin.

1987-1989 Thyrotropin heterogeneity. Immunisation with anti-thyrotropin (TSH) monoclonal antibodies and production of anti-idiotypic antibodies directed against TSH receptor.

1989-1992 Characterisation of monoclonal anti-idiotypic antibodies recognising TSH receptor. Study of glycoprotein hormones isomorphism (LH).

1993 Overexpression of the extracellular domain of the TSH receptor in E. Coli. Production of a polyclonal serum against TSH receptor and TSH binding inhibiting immunoglobulins.

1994 Induction of thyroiditis in Balb/c mice immunised with the recombinant TSH receptor.

1996-1997 Production of monoclonal antibodies against G proteins coupled receptor.

1998 Development of an animal model of Graves'disease in outbred mice by genetic immunisation. Production of a bioactive soluble form of the extracellular domain of the TSH receptor.

1999-2000 Production and characterization of monoclonal antibodies against the TSH receptor with blocking activity. Production and characterization of monoclonal antibodies against the

Sodium-iodide transporter (NIS). Development of a stable Cos cell line expressing high level of NIS and with a large capacity to accumulate iodide.

2001-2002 Identification of sulfated tyrosine on the extracellular domain of glycoprotein hormones receptors required for ligand binding. Identification of residues on the extracellular domain of the TSH receptor implicated in ligand specificity. Study of the mechanism of activation of the TSH receptor.

PUBLICATIONS

Monoclonal antibody approach to the relationship between immunological structure and biological activity of thyrotropin. Costagliola S, Madec AM, Benkirane MM, Orgiazzi J, Carayon P *Mol Endocrinol* Jul;2(7):613-8 (1988)

Monoclonal antiidiotypic antibodies interact with the 93 kilodalton thyrotropin receptor and exhibit heterogeneous biological activities. Costagliola S, Ruf J, Durand-Gorde MJ, Carayon P *Endocrinology* Mar;128(3):1555-62 (1991)

Binding assay for thyrotropin receptor auto-antibodies using the recombinant receptor protein. S.Costagliola, S. Swillens, P. Niccoli, J.E. Dumont, G. Vassart, M. Ludgate. *J Clin Endocrinol Metab.*75 1540-1544 (1992)

European collaborative study of luteinizing hormone assay: 1. Epitope specificity of luteinizing hormone monoclonal antibodies and surface mapping of pituitary and urinary luteinizing hormone. Costagliola S, Niccoli P, Florentino M, Carayon P *J Endocrinol Invest* Jun;17(6):397-406 (1994)

European collaborative study on luteinizing hormone assay: 2. Discrepancy among assay kits is related to variation both in standard curve calibration and epitope specificity of kit monoclonal antibodies. Costagliola S, Niccoli P, Florentino M, Carayon P *J Endocrinol Invest* Jun;17(6):407-16 (1994)

Glycoprotein hormone isomorphism and assay discrepancy: the paradigm of luteinizing hormone (LH). Costagliola S, Niccoli P, Carayon P *J Endocrinol Invest* Apr;17(4):291-9 (1994)

Induction of Thyrotropin receptor (TSH-R) autoantibodies and thyroiditis in mice immunised with the recombinant TSH-R. S.Costagliola, L.Alcalde, M.Tonacchera, J.Ruf, G.Vassart and M.Ludgate. *Biochem. Biophys. Res. Commun.* 199 :1027-1034 (1994).

Overexpression of the extracellular domain of the thyrotropin receptor in bacteria; production of thyrotropin binding inhibiting immunoglobulins. S.Costagliola, L.Alcalde, J.Ruf, G.Vassart and M.Ludgate. *J. Mol. Endocrinol.* 13, 11-21. (1994).

Recombinant TSH receptor and the induction of autoimmune thyroid disease in BALB/C mice. a new animal model. S.Costagliola, M.C.Many, M.Stalmans-Falys, M.Tonacchera, G.Vassart and M.Ludgate. *Endocrinology.* 135, 2150-2159. (1994)

The autoimmune response induced by immunising female mice with recombinant human TSH receptor varies with the genetic background. S.Costagliola, M.C.Many, M.Stalmans-Falys, G.Vassart and M.Ludgate. *Mol. Cel. Endo.* 115, 199-206 (1995).

Transfer of thyroiditis, with syngeneic spleen cells sensitized with the human thyrotropin receptor, to naive BALB/c and NOD mice. S.Costagliola, M.C.Many, M.Stalmans-Falys, G.Vassart and M.Ludgate. *Endocrinology* . 137, 4637-4643 (1996).

Genetic immunization against the human thyrotropin receptor causes thyroiditis and allows production of monoclonal antibodies recognizing the native receptor. S.Costagliola, P.Rodien, M.C.Many, M.Ludgate and G.Vassart. *The journal of Immunology*, 160:1458-1465 (1998).

Production of bioactive amino-terminal domain of the thyrotropin receptor via insertion in the plasma membrane by a glycosylphosphatidylinositol anchor. S.Costagliola, D.Khoo, G.Vassart. *FEBS Letters* 436:427-433 (1998).

Second Generation Assay for Thyrotropin Receptor Antibodies Has Superior Diagnostic Sensitivity for Graves' Disease S.Costagliola, N.G. Morgenthaler, R.Hoermann, K.Badenhoop, J.Struck, D.Freitag, S.Poertl, W.Weglöhner, J.M,Hollidt, B.Quadbeck, J.E.Dumont, P.-M.Schumm-Draeger, A. Bergmann, K.Mann, G.Vassart, and K.-H.Usadel *The Journal of Clinical Endocrinology & Metabolism* 84: 90-97 (1999).

Development of an animal model of autoimmune thyroid eye disease. S. Costagliola*, M-C,Many, , M.Detroit , J-F.Denef, G. Vassart, M.Ludgate. *The journal of Immunology*, 162:4966-4974 (1999).

*: equal contribution with M.C Many

Structure-Function relationships of two loss-of-function mutations of the thyrotropin receptor gene. S.Costagliola, T.Sunthorntepvarakul, I.Migeotte, J.Van Sande, A.M.Kajava, S.Refetoff, G.Vassart. *Thyroid*, 10: 995-1000 (1999).

Genetic immunization of outbred mice with thyrotropin receptor cDNA provides a convincing animal model of Graves' disease. S.Costagliola, M-C.Many, J-F.Denef, J.Pohlenz, S.Refetoff, G.Vassart *Journal of Clinical Investigation*, 105: 803-811 (2000).

Failure of membrane targeting causes the functional defect of two mutant sodium iodide symporters. J.Pohlenz, L.Duprez, R.E.Weiss, G.Vassart, S.Refetoff, S.Costagliola. *The Journal of Clinical Endocrinology & Metabolism* 85 : 2366-2369 (2000)

Rarity of anti- Na+/I symporter (NIS) antibody with iodide uptake inhibiting activity in autoimmune thyroid diseases (AITD). S.C.Ho, D.Khoo, N.G.Morgenthaler, G.Vassart, S.Costagliola. *The Journal of Clinical Endocrinology & Metabolism* 85 : 3937-3940 (2000)

Purification and characterization of a soluble bioactive amino-terminal extracellular domain of the human thyrotropin receptor. Cornelis S, Uttenweiler-Joseph S, Panneels V, Vassart G, Costagliola S. *Biochemistry* 40(33):9860-9869 (2001)

Effects of mutations involving the highly conserved S281HCC motif in the extracellular domain of the thyrotropin (TSH) receptor on TSH binding and constitutive activity. Ho SC, Van Sande J, Lefort A, Vassart G, Costagliola S. *Endocrinology* 142 (7): 2760-2767 (2001)

Activation of the cAMP pathway by the TSH receptor involves switching of the ectodomain from a tethered inverse agonist to an agonist. Vlaeminck-Guillem V, Ho SC, Rodien P, Vassart G, Costagliola S. *Mol Endocrinol* Apr;16(4):736-46 (2002)

Lysine 183 and glutamic acid 157 of the TSH receptor: two interacting residues with a key role in determining specificity toward TSH and human CG. Smits G, Govaerts C, Nubourgh I, Pardo L, Vassart G, Costagliola S. *Mol Endocrinol* Apr;16(4):722-35 (2002)

Tyrosine sulfation is required for agonist recognition by glycoprotein hormone receptors. Costagliola S, Panneels V, Bonomi M, Koch J, Many MC, Smits G, Vassart G. *EMBO J* Feb 15;21(4):504-13 (2002)