INSTITUT DES BIOMOLECULES MAX MOUSSERON (IBMM)
UMR 5247 - CNRS - UM - ENSCM
Faculté de Pharmacie de Montpellier

The amazing diversity of the isoprostane superfamily?

Thierry Durand

Since the discovery by Morrow *et al.* in 1990 (Morrow **1990**) that isoprostanes (IsoPs) were formed, *in vivo*, by a free radical mediated non-enzymatic mechanism from arachidonic acid (AA, C20:4 n-6), an important field of research has been developed (Cracowski **2002**; Jahn **2008**; Milne **2011**; Galano **2013, 2015**).

Docosahexaenoic acid (DHA, C22:6 n-3) located mainly in the grey matter and, more recently, adrenic acid (AdA, C22:4 n-6) located in the white matter, undergoe such a lipid peroxidation to produce, neuroprostanes (NeuroPs) (Nourroz-Zadeh **1998**) and dihomo-isoprostanes (Dihomo-IsoPs) (VanRollins **2008**) respectively. Finally, phytoprostanes (PhytoPs) were initially discovered (Parchmann **1998**) in higher plants from peroxidation of α linolenic acid (ALA, C18:3 n-3). ALA can occur in the circulation during ALA mobilization and transport, and the circulating PhytoPs can also come from the diet (Barden **2009**).

In order to fully assess the physiological importance of the enantiomerically pure PhytoPs, NeuroPs and Dihomo-IsoPs, we have developed different chemical strategies (Durand **2004, 2005**, Jahn **2008, 2014**; Oger **2008**; **2012**; **2015**; **2016**; Guy **2014**).

In this lecture, we will focus on our recent finding in collaboration with colleagues all around the word (De Felice *et al.* **2011**, **2012, 2013, 2014**, **2015, 2016**; Opere **2012, 2014**; Le Guennec **2014, 2015**, **2016**; Gil-Izquierdo **2015, 2016, 2017**; Minghetti **2014**; Mori **2009**, **2010, 2011**; **2012**; Lee **2014, 2015, 2016**; Gladine **2014, 2017**).

15, Avenue Charles Flahault, BP 14491, 34093, MONTPELLIER Cedex 5- FRANCE
Tél : 04-11-75-95-58 - Fax : 04-11-75-95-53
E-mail : Thierry.Durand@umontpellier.fr