

**Aquitaine –Karnataka collaboration
Scientific Project for Pre-PhD student exchange**

Scientific Proposal

Project Title	Wine tannin-lipid interactions: physical chemistry of taste	
Scientific domain	Biophysics, Chemistry, Health & Nutrition	
Summary (10 lines)	Polyphenols/tannins interact with lipids of buccal membranes and with lipid droplets when eating while drinking red wines or teas. The project deals with the understanding, in terms of physical chemistry, of the complex feeling of “astringency and bitterness” as referred to in oenology/food sciences. Experiments will involve reconstitution of model lipidic membranes or lipid droplets and following interactions with polyphenols with nuclear magnetic resonance (NMR), both in liquid and solid state. The student will be involved both in systems reconstitution and NMR measurements (100-800 MHz)	
Student profile wished	Biophysics, chemistry, chemical biology, biochemistry	
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Institute/laboratory/industry (full address)	Institute of Chemistry & Biology of Membranes & Nano-objects, Biophysics of Membrane Assemblies laboratory, Allée Geoffroy Saint Hilaire, 33600 Pessac, France	
Director Name Institute/laboratory/industry	Erick Dufourc	
Director Institute/laboratory/industry @ & phone	@: e.dufourc@cbmn.u-bordeaux.fr	Tel: +33 5 4000 6818
Timing & duration for project (give approximate ranges)	From 3 to 6 month, any time of year.	
Representative References	<ol style="list-style-type: none"> 1. Aurélien L. Furlan,[†] Aurore Castets,[†] Frédéric Nallet,[‡] Isabelle Pianet,[§] Axelle Grélard,[†] Erick J. Dufourc and Julie Géan. (2014) Red Wine Tannins Fluidify and Precipitate Lipid Liposomes and Bicelles. A Role for Lipids in Wine Tasting? <i>Langmuir</i> dx.doi.org/10.1021/la5005006 2. Cala, O., Dufourc, E. J., Fouquet, E., Manigand, C., Laguerre, M., and Pianet, I. (2012) The Colloidal State of Tannins Impacts the Nature of Their Interaction with Proteins: The Case of Salivary Proline-Rich Protein/Procyanidins Binding. <i>Langmuir</i> 28, 17410-17418 3. Loudet, C., Diller, A., Grelard, A., Oda, R., and Dufourc, E. J. (2010) Biphenyl phosphatidylcholine: A promoter of liposome deformation and bicelle collective orientation by magnetic fields. <i>Prog. Lipid Res.</i> 49, 289-297 	

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