

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

Scientific Proposal

Project Title	Identification and function of O- and N-glycosylations of Immunoglobulin A in IgA nephropathy	
Scientific domain	Biochemistry, Biophysics, Public Health	
Summary (ca. 10 lines)	Immunoglobulin A nephropathy (IgAN), the most frequent form of primitive glomerulonephritis, affects about 1% of the world population. It is believed that abnormal glycosylation of circulating IgA is responsible for their glomerular deposit in IgAN and for subsequent kidney dysfunction. We hypothesize that the deposit is due to the recognition by the glycocalyx of glomerular endothelium of circulating IgA1 displaying glycosylation defects. Using mass spectrometry, we plan to analyze the glycome of normal and pathogenic IgA and to identify the partners of pathogenic IgA. This work is a prerequisite to find predictive markers of IgAN and to better understand the molecular mechanisms leading to glomerular deposits so as to develop innovative and more specific therapies (partnership with A Druilhe, UMR 7276, Limoges).	
Student profile wished	Biochemistry, Chemical Biology, Biophysics, Chemistry	
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Timing & duration for project (give approximate ranges)	4-6 months, any time of the year	
Representative References	<ol style="list-style-type: none"> 1. <u>Integrative quantitative proteomics unveils proteostasis imbalance in human hepatocellular carcinoma developed on non-fibrotic livers.</u> Negroni L, Taouji S, Arma D, Pallares-Lupon N, Leong K, Beausang LA, Latterich M, Bossé R, Balabaud C, Schmitter JM, Bioulac-Sage P, Zucman-Rossi J, Rosenbaum J, Chevet E. <i>Mol Cell Proteomics</i> 2014 pii: mcp.M114.043174. [Epub ahead of print] 2. New affinity-based probes for capturing flavonoid-binding proteins. Carrié H, Tran DT, Rousseau S, Chaignepain S, Schmitter JM, Deffieux D, Quideau S. <i>Chem Commun</i> 2014,50, 9387-9. 3. Synaptotagmin 11 interacts with components of the RNA-induced silencing complex RISC in clonal pancreatic β-cells. Milochau A, Lagrée V, Benassy MN, Chaignepain S, Papin J, Garcia-Arcos I, Lajoix A, Monterrat C, Coudert L, Schmitter JM, Ochoa B, Lang J. <i>FEBS Lett.</i> 2014, 588, 2217-22. 	

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