



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

Project Title	Caveolae involvement in stress mediated by TNF alpha in skeletal muscle cells.	
Scientific domain	Cell Biology, Biochemistry	
Summary (ca. 10 lines)	During ageing, chronic inflammation triggers uncontrolled oxidative stress leading to skeletal muscle loss. TNF alpha, a key player in stress induction has been involved in caveolae-mediated signalling pathways. Caveolae are plasma membrane invaginations present in many tissues. In skeletal muscle, they are specifically involved in the resistance to mechanical stress and in the regeneration of myogenic cells. Our project aims at dissecting the molecular mechanisms induced by TNF alpha within caveolae. The consequences of stress induction on the structure and function of caveolae will be studied in cultured muscle cells. The effects of fatty acids (omega 3), known to protect the cells from TNF alpha, will be tested in our model, as well as natural antioxidants in order to envisage a nutritional preventive approach.	
Student profile wished	Biochemistry and cell biology.	
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Timing & duration for project (give approximate ranges)	6 months, any time in the year	
Selected Publications	1-MOUGEOLLE A., POUSSARD S., DECOSSAS M., LAMAZE C., LAMBERT O., DARGELOS E. Oxidative stress induces caveolin 1 degradation and impairs caveolae functions in skeletal muscle cells. Plos One, 10(3):e0122654, 2015. 2-POUSSARD S., PIRES-ALVES A., DIALLO R., DUPUY J.W., DARGELOS E. A natural antioxidant pine bark extract, Oligopin®, regulates the stress chaperone HSPB1 in human skeletal muscle cells: a proteomics approach. Phytotherapy Research 27, 1529-35, 2013.	

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