

## BIONAND 2016 CONFERENCE SERIES

### Tissue regenerative decline with aging: focus on muscle stem cells

*Pura Muñoz Cánoves*

*Pompeu Fabra University and ICREA*

*Barcelona*

#### Abstract:

Our group aims to understand the mechanisms regulating stem cell homeostasis and regenerative functions. Research is specially centered on stem cells of skeletal muscle (i.e., satellite cells). Recently, we have focused on two areas: 1) the functional decline of satellite cells with aging; and 2) the physiopathology of muscular dystrophies, with a specific interest in the contribution of inflammation and fibrosis to dystrophy progression. Concerning the first area, work from different laboratories has demonstrated that both environmental and cell-autonomous signals alter satellite cell regenerative potential with aging. I will discuss our latest results showing that satellite cells in their homeostatic quiescent state are equipped with quality control mechanisms to preserve their fitness, and how age-associate alterations in these protective mechanisms lead to stem cell loss of function and regenerative capacity.

#### Short biography:

Pura Muñoz-Cánoves studied Pharmacology at the University of Valencia. She obtained her PhD in Biology at the Madrid Autonomous University for work carried out at The Scripps Research Institute, and did postdoctoral work at the University of California-San Diego and The Scripps Research Institute, and in 1995 she joined the Cancer Research Institute in Barcelona as a postdoc, becoming an independent group leader in 1997. In 2002 her group moved to the Center for Genomic regulation in Barcelona, and she became a senior group leader in 2007 in that Institution. In 2009 she moved to the Pompeu Fabra University (UPF), supported by ICREA, as coordinator of the Cell Biology Unit. At present, she is an ICREA Research Professor and Cell Biology Professor in the Department of Experimental and Health Sciences at the UPF.