

## GRUPPO BIOCHIMICA-BRUNI-FIRENZE

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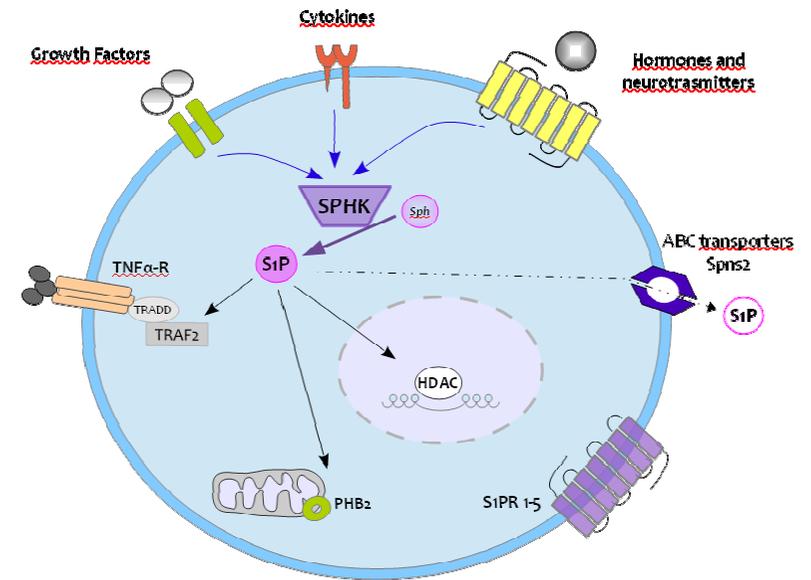
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**KEY WORDS:** Sphingolipid metabolism, sphingosine 1-phosphate, NMR-metabolomic, skeletal muscle, stem cell

The group expertise deals with different aspects of cell biochemistry and biology of sphingolipid molecules.

In particular, the group is focused on addressing the biological role of the bioactive lipid sphingosine 1-phosphate (S1P) in different types of cell model such as skeletal muscle cells, mesoangioblasts, which are vessel-associated stem cells capable of regenerating skeletal muscle, adipose tissue derived mesenchymal stem cells and cancer cells. In this regard the group has provided new important information on cell and molecular biology of skeletal muscle demonstrating that S1P, its receptors and its metabolism play a physiological role in the process of skeletal muscle differentiation. Moreover, it has been demonstrated the occurrence of a functional cross-talk between  $TNF\alpha$  or  $TGF\beta$  on one side and S1P metabolism on the other, which accounts at least in part for the biological action of the two cytokines in myoblasts and mesoangioblasts, respectively. More recently, the group has focused its attention on the study of the role of S1P signalling axis in inner ear biology employing murine precursors derived from the otic vesicle capable of differentiating towards hair cells and spiral ganglion neurons. Ongoing research deals with the evaluation of the role of S1P signalling in metabolic shift that occurs in cancer cells by a NMR metabolomics approach.



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