

This project concerns the understanding of the molecular basis of the regulation of lysosome activity as a potential therapeutic target in inflammatory skin diseases, using psoriasis as a model. Psoriasis is a chronic disease, characterized by infiltration of immune cells, epidermal hyperproliferation and abnormal keratinocyte differentiation. This disease is recognized as a serious medical and social problem, as it affects about 2-3% of the worldwide population, and there is no effective treatment for psoriasis. Despite of an unquestionable progress in research that allowed to describe the basic physiological mechanisms leading to the development of psoriasis, the molecular mechanisms controlling the lysosomal proteolytic system in psoriatic cells potentially associated with the immune-inflammatory reaction in patients are still unexplored. Several studies have shown that affected psoriatic skin differs from the normal in respect to the presence and function of lysosomes, and in the level of activity of their hydrolytic enzymes. However, there are no studies on the evaluation of the relationship of lysosomes and inflammation status in psoriasis. Implementation of the projected tests should lead to a much better understanding of the mechanisms of immune disturbances in psoriasis, which in the future should benefit to millions of affected individuals.