The **3D Lab: Development, Differentiation & Degeneration**, led by Prof. Flora de Pablo and Dr. Enrique J. de la Rosa, develops its research work in **retinitis pigmentosa** (RP), a group of neurodegenerative diseases of the retina with complex genetics: so far more than 60 genes and 3,000 mutations have been identified. In addition to the scientific challenge of characterizing how all these mutations converge in a vision loss process, the lack of effective or preventive treatment for patients with RP causes an urgent demand for therapies. This group began by studying the embryonic development of the retina and the mechanisms of programmed cell death associated with it. The results generated in this basic research line led to extending the investigation to the study of programmed cell death in pathological models of RP. In this line of oriented research, the therapeutic potential of proinsulin, a neuronal survival factor, was explored.

The main achievement of this approach was the foundation in 2007 of ProRetina Therapeutics, a spin-off of the CIB Margarita Salas whose mission was focused on the development of therapies for retinal dystrophies. More recently, studies have been extended to new families of neuroprotective molecules, thus opening the spectrum of possible therapies for this disease, still incurable today.