Poster

Characterization and Drugs Screening in Human Dermal Fibroblasts Derived From Patient With Amiotrophic Lateral Sclerosis

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ABSTRACT

Motivation: Amyotrophic lateral sclerosis (ALS) is a neurodegenerative disease caused by the loss of motor neurons. Though currently we unknow its etiology, there are several alterations related to its physiopathology, such as mutation in Superoxide dismutase-1 (SOD-1), an enzyme which prevents free radical production, and intracellular non-avaliable iron accumulation, both alterations have been observed in the patient. The mutated form of this enzyme tends to form fibrillar aggregates on the cytoplasm. In this way, the research line have two parts: the molecular characterization of the disease, and the elimination or reduction of intracellular iron accumulation and the reestablishment of modified protein levels. Treatments screening allows to increase patient's survival due to we use commercialized compounds, with this approximation we can skip long proccess of drugs commercialization.

Methods: Human Dermal Fibroblast (HDF) primary cultures with and without pathological background are used. Iron accumulation in this cultures is observed by Prussian Blue technique. Expression protein levels are measured by Western Blotting, TransferBlot, InmmunoBlot and ChemicDoc developing. Quantifications were calculated with ImageJ software.

Preliminar Results: We observed differences in the expression protein levels involved in autophagy proccess (P62, LC3B), antioxidative activity (GPX, SOD1), lipid peroxidation (PLA2G6) and lisosomal dynamic (LAMP1). Drugs screening allowed to select several drugs which reduced intracellular iron levels. With this technique we did another screening combining that drugs to select the best combination.

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