

Abstract

In contrast to mammals, a teleost Zebrafish shows complete retinal regeneration in response to injury. Studying it would provide insights into the mechanisms that don't occur in the mammalian retina causing various ophthalmologic defects. It has been established that retina regeneration proceeds through three stages as a result of Muller glia cell reprogramming - dedifferentiation, proliferation, and re-differentiation/cell migration. There are wide range of factors that trigger and sustain the Muller glial cell reprogramming that is primarily responsible for regeneration to manifest. Of them, I have tried to elucidate the roles of epigenome modifiers, like Enhancer of Zeste homologue 2 (Ezh2) which is the catalytic domain of the polycomb repressive complex 2 (PRC2), involved in H3 lys27 methylation (H3K27me3).