Title:	INVESTIGATING THE ROLE OF miR- 143 & miR-145 IN THE COURSE OF ZEBRAFISH RETINA REGENERATION
Authors:	Kumar, Ajay
Keywords:	miR-143 miR-145 Zebrafish Retina Regeneration
Issue Date:	May-2020
Publisher:	IISERM
Abstract:	Sight, unarguably the most important of all senses is what allows us to understand the world around us. A human retina if diseased or damaged remains incurable in its ability to restore lost vision regardless of ample scientific advances and breakthroughs. On the contrary, Zebrafish, a teleost fish exhibits extraordinary capacity and ability to regenerate and regain visual function post injury. In Zebrafish, a dominant form of glial cells should be the only type of macroglial cells, Müller Glia are responsible for retina regeneration. These cells respond to injury and undergo reprogramming into a proliferative population. Here in this work, we aim to explore the role of miR143 and miR- 145 in the retina regeneration process. We looked at the levels of molecular players of regeneration upon miR-143 knockdown. We observed miR-145 gene expression in retina, brain and tail region at 24hpf, 48hpf and 6dpf .We observed relatively strong expression in optic rediion and tail rediion.. Even within the eye, its expression is predominantly in retina. We use MO for knocking down the miR-143 and miR-145. We observed decrease in proliferation cells in 1016tuba:gfp in which gfp is marking proliferating Muller glia cells. Also after knocking down miR-143, we looked at protein level of some RAG and epigenetic modifier like hdac1 and it doesn't show downregulation. We observed decrease in the significant expression of Ascl1a, lin28 ,Sox2, Lin28a, Myc a/b, H3k27me3, H3k27Ac, ptenb,Oct4, H3k4me3, akt, p-Smad3 and β - catenin after knocking down of miR-143. Ascl1a, master regulator of retina regeneration, level went down after knocking down miR-143 which is in accordance with decline in proliferation at 4dpi in immunostaining results. Taken together, our results show the importance of miR-143/145 in MG reprogramming and proliferation.
URI:	http://hdl.handle.net/123456789/1513
Appears in Collections:	MS-15

Files in This Item:

File	Size	Format	
MS15039.pdf	1.2 MB	Adobe PDF	View/Open

Show full item record