



Odorant Receptor Gene Regulation in the Zebrafish, Danio rerio

By Silke Argo

Dr. H. H. Verlag Driesen Dez 2002, 2002. Taschenbuch. Book Condition: Neu. 19x12x cm. Neuware - The sense of smell enables an organism to extract vital information from the composition of its odor environment. Each olfactory receptor neuron faces the daunting task of selecting one odorant receptor (OR) gene from the vast array of about 100 and 1,000 OR genes in fish and mammals, respectively. Thus far, the control mechanism of this highly differential gene expression is largely unknown. Silke Argo evaluates several features of OR genes in the olfactory system of a microsmatic vertebrate, the zebrafish, *Danio rerio*, in order to assess the regulation of OR gene expression: The temporal expression pattern of endogenous zebrafish OR (ZOR) genes is investigated by a detailed quantitative analysis. The genomic arrangement of ZOR genes is elucidated by a linkage analysis and screen of a zebrafish genomic DNA library. Moreover, the author identifies two putative ZOR gene promoter regions and demonstrates the functionality by means of their ability to drive expression of the GFP reporter gene in vivo. Finally, for the first time the axonal pattern of olfactory receptor neurons that are transgenic for a particular ZOR gene promoter/GFP construct is shown. Based...



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