

Cloning of hif-1 β and hif-2 β and mRNA expression pattern during development in zebrafish

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Hypoxia-inducible factors (HIFs) regulate gene expression in response to hypoxia and in vertebrates they are known to participate in several developmental processes, including angiogenesis, vasculogenesis, heart and central nervous system development. Over the last decade, major progress in unraveling the molecular mechanisms that mediate regulation of HIF proteins by oxygen tension has been reported, but our knowledge on their developmental regulation during embryogenesis in model organisms is limited. Expression of hif-1 β and hif-2 β genes has been characterized during normal mouse development and they were found to be expressed from stages E7.5, later in E9.5 and E15.5 in several different tissues such as the brain, heart and blood vessels. However, there is no detailed temporal information on their expression at other embryonic stages, even though orthologous genes have been described in several different vertebrate species. In this study, we describe the cloning and detailed expres