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Degree Project in Molecular Biotechnology

Masters Programme in Molecular Biotechnology Engineering,
Uppsala University School of Engineering

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| Author | Henning Onsbring Gustafson | |
| Title (English) | Formation of the musculoskeletal system during the craniofacial development of zebrafish | |
| Title (Swedish) | | |
| Abstract | <p>The musculoskeletal system supports the internal structures of the body and consists of bones, ligaments, muscles and tendons. This system forms during early embryonic development, a process where many components today are unknown. In order to get a better understanding for those developmental steps, fluorescent <i>in situ</i> hybridisation has been performed on five genes. All five genes represent different transcription factors. These genes were selected based on the assumption that they could be important for the formation of the musculoskeletal system. After <i>in situ</i> hybridisation was performed, embryos were stained by immunohistochemistry to get a reference signal in the cartilage to enable easier interpretation of the expression pattern. In this study four of the selected transcription factors, <i>Scleraxis a</i>, <i>Scleraxis b</i>, <i>Mohawk a</i> and <i>Mohawk b</i> turned out to be expressed close to points where muscles are attached to the cartilage elements in the zebrafish head. Therefore, these genes are good candidates for future functional studies of muscle attachment development.</p> | |
| Keywords | Musculoskeletal system, Scleraxis, Mohawk, Early growth response 1, <i>in situ</i> , zebrafish | |
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