Title (English)
Identification of MYCN and SOX9 target genes and a study of drug
treatment effects in medulloblastoma

Title (Swedish)
Identifikation av MYCN och SOX9 målgen och en studie av läkemedel
effekter på medulloblastoma

Abstract
Medulloblastoma (MB) is the most common malignant brain tumor affecting children. The
transcription factors MYCN and SOX9 are associated with initiation, maintenance and recurrence
of MB and are also connected to more aggressive tumors. In this study, a ChIP was performed to
isolate DNA from genes that are transcriptionally regulated by these proteins. Identification of
these target genes will reveal new potential drug targets and help us better understand the functions
of MYCN and SOX9. The ChIP was not fully optimized during this project and the target genes
were not sent for sequencing and identified. To study the connection between SOX9 and
recurrence, cells with different levels of SOX9 were treated with drugs, after which cell viability
was measured. No significant difference in resistance could be measured. Change in expression
level of MYCN, SOX9 and other relevant genes after drug treatment was also studied. The results
show an increase in SOX9 and HES1, suggesting that these genes are involved in tumor
recurrence.

Keywords
Medulloblastoma, MYCN, MYC, SOX9, HES1, ChIP, recurrence

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