# WIF1

A study of Song et al., from the Beijing Neurosurgical Institute, Key Laboratory of Central Nervous System Injury Research, Center of Brain Tumor of Beijing Institute for Brain Disorders, Capital Medical University, Tianjin First Central Hospital, Tianjin, China, was designed to investigate the relationships between secreted frizzled related proteins (sFRPs), WIF1 genes and the invasion of Nonfunctioning pituitary adenomas (NFPAs) by tissue microassays (TMAs) of samples from 163 patients. Significantly weaker staining of WIF1 and sFRP4 were detected in the invasive group compared with the non-invasive group by TMAs ($p = 0.002$, $p < 0.001$). Univariate analysis showed a significant correlation between tumor invasion and low expression of WIF1 and sFRP4 ($p = 0.002$, $p < 0.001$). A similar trend was observed when analyzing the mRNA and protein levels through RT-PCR and western blot experiments. Methylation of the WIF1 promoter was significantly increased in invasive NFPAs compared with the noninvasive group ($p = 0.004$). The average progression free survival time in the high WIF1 group was longer than that in the low WIF1 group ($p = 0.025$). Furthermore, RT-PCR measured the levels of 11 miRNAs targeting WIF1 according to the Targetscan database and PubMed. The levels of mir 137, miRNA-374a-5p and miRNA-374b-5p in the invasive group were 0.037-fold, 0.577-fold and 0.44-fold that of the noninvasive group ($p = 0.003$, $p = 0.049$ and $p = 0.047$). Overexpression of miRNA-137 could inhibit the proliferation and invasion of GH3 cells through cell viability and transwell migration assay ($p < 0.05$). Furthermore, the WIF1 level was upregulated after overexpression of miRNA-137 compared with miRNA-137-NC (control miRNA) in GH3 cells.

This data suggest that WIF1 may be potential biomarker for the aggressiveness of NFPAs. mir 137 plays an important role in the Wnt signaling pathway by affecting promoter methylation of WIF1 [1)].

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Song W, Qian L, Jing G, Jie F, Xiaosong S, Chunhui L, Yangfang L, Guilin L, Gao H, Yazhuo Z. Aberrant expression of the sFRP and WIF1 genes in invasive non-functioning pituitary adenomas. Mol Cell Endocrinol. 2018 Oct 15;474:168-175. doi: 10.1016/j.mce.2018.03.005. Epub 2018 Mar 16. PubMed PMID: 29555596.