

The Expression of Neuropilin-1 in the Pituitary Adenoma

Kazutaka Shirokane MD; Daizo Yoshida MD PhD; Akira Teramoto MD; Akio Morita MD, PhD

Department of Neurosurgery, Nippon Medical School

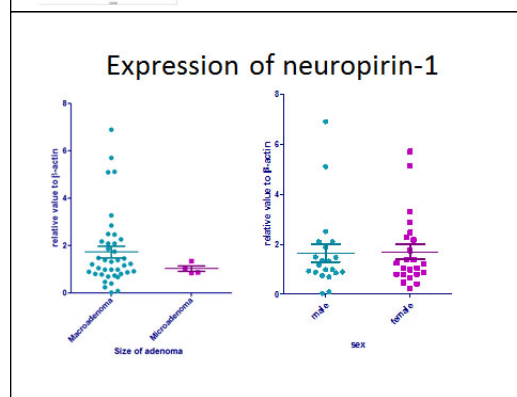
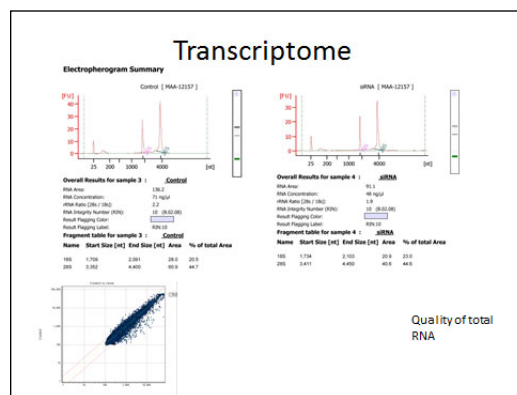
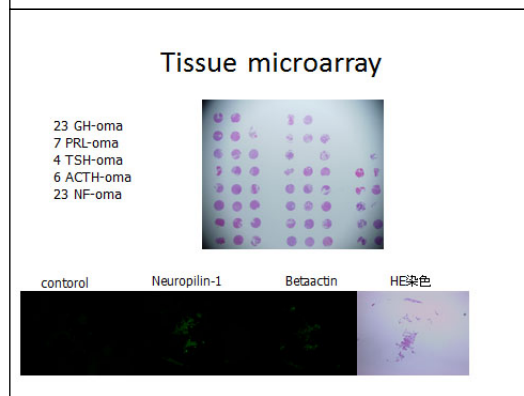
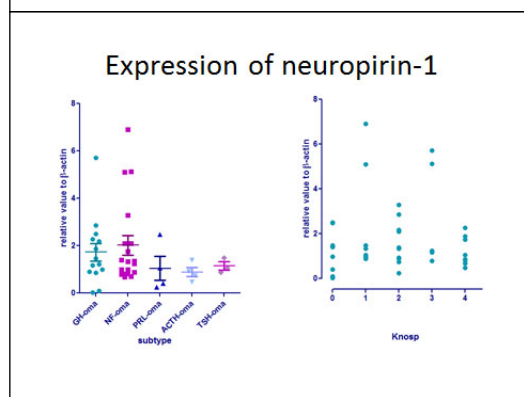
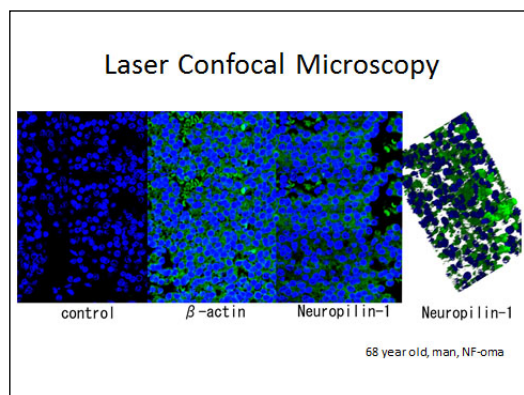
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Introduction

Neuropilin-1 (NRP-1) functions as a co-receptor through interaction with vascular endothelial growth factor (VEGF) receptor during neuronal development and angiogenesis. In other tumors the relation of Neuropilin-1 with tumor growth and angiogenesis has been discussed, meanwhile in pituitary adenoma has not yet been reported. In this study we investigated the expression and signaling pathway of NRP-1 in pituitary adenoma.

Methods

Immunofluorescence study with laser confocal microscopy was performed. Tissue microarray analysis with 63 pituitary adenomas operative samples, (23 GH-omas, 7 PRL-omas, 4 TSH-omas, 6 ACTH-omas, and 23 NF-omas). The signaling pathway was elucidated by a cDNA Microarray analysis in GH3, rat pituitary adenoma cell after gene-silencing by siRNA method targeting NRP-1.



Signals Regulated by Neuropilin-1

- Up-regulation:(Control>siRNA)
 - Decorin precursor (Bone proteoglycan II) (PG-S2) (PG40)
 - (Dermatan sulfate proteoglycan-II) (DSPG).
 - Ribonuclease 4 precursor (EC 3.1.27.-) (RNase 4) (RL3).
 - beta-defensin 30
 - Leucine-rich repeat-containing protein 33 precursor.
 - C-X-C chemokine receptor type 7 (CXCR-7) (CXCR-7)
 - (G-protein coupled receptor RDC1 homolog) (RDC-1)
 - (Chemokine orphan receptor 1).
- Down-regulation:(Control<siRNA)
 - translin
 - ganglioside-induced differentiation-associated-protein 1
 - BMI1 polycomb ring finger oncogene
 - Proto-oncogene C-crk (p38) (Adapter molecule crk).

Signal transduction regulated by NRP-1 in GH3 pituitary adenoma cell

- Up-regulated signal pathway
- EGFR1 Signaling Pathway
 - B_Cell_Receptor_Signaling_Pathway
 - Selenium_metabolism_Selenoproteins
 - Focal_Adhesion
- Down-regulated signal pathway
- Statin_Pathway_PharmGKB
 - Cholesterol_metabolism
 - Steroid_Biosynthesis
 - Tryptophan_metabolism

References

EGF-R, Neuropilin-1, pituitary adenoma, signal cascade