Secretagogin (SCGN) expression and its biological relevance in renal cell carcinoma

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Clear cell renal cell carcinomas (CCRCCs) represent 70% of all neoplasms of the kidney. The introduction of novel treatment strategies such as kinase inhibitors provide hope that metastasis and progression could be stabilised. In this context, the central role of calcium signalling in a diverse range of intracellular processes including oncogenesis has to be stressed. The present study aimed at the evaluation of the recently defined neuroendocrine marker calcium binding protein SCGN in CCRCCs. Immunohistochemical analysis revealed considerable SCGN expression in 28 of 96 tested CCRCCs (=29%). Notably, none of the tested non-CCRCC (n=91) exhibited expression of SCGN. The immunohistochemical results were confirmed by immunoblotting of CCRCC derived tissue samples. Moreover the SCGN expressing subgroup of CCRCCs associated with a high metastasis rate. Reported gene array data on 9 CCRCC and their normal tissue counter-parts revealed similar results [1]. Using bioinformatics, we found 300 genes strongly correlated with SCGN. By pathway analysis involvement of these 300 genes in replication as well as neuronal differentiation processes was identified. SCGN and its functional relevance in CCRCCs is currently under investigation in stable transfectant clones of the kidney cell line Hek-293. In conclusion, we demonstrate expression of the neuroendocrine marker SCGN in a subgroup of CCRCCs, which correlates in its expression level with important proteins involved in cell replication.

[1] Lenburg ME, Liou LS, Gerry NP, Frampton GM, Cohen HT, Christman MF: Previously unidentified changes in renal cell carcinoma gene expression identified by parametric analysis of microarray data. BMC Cancer (2003) 3: 31