Epithelial Cells, Infection, Carcinoma **Abstract 55**

FUNCTIONAL INVESTIGATION OF TUMOR AND ANGIOGENESIS SUPPRESSIVE CANDIDATE TUMOR SUPPRESSOR, *CYSTEINE-RICH INTESTINE PROTEIN 2* IN NASOPHARYNGEAL CARCINOMA

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Abstract

A novel candidate tumor suppressor gene (TSG), *Cysteine-rich intestine protein 2* (*CRIP2*), was identified in NPC. This gene has previously been reported to be expressed in the heart endothelium; its possible relationship with tumor development is unknown. Therefore, its contribution and functional role in NPC was investigated. ***Methods/Principal findings:*** *CRIP2* is down-regulated in 5/7 NPC cell lines and 42/60 (70%) patient biopsies. *CRIP2* re-expression suppresses colony formation *in vitro* and tumor growth *in vivo.* Functional studies such as invasion, HUVEC tube formation, and *in vivo* matrigel plug angiogenesis assays were used to investigate *CRIP2* gene function. Expression of *CRIP2* inhibits angiogenesis both *in vitro* and *in vivo*. Using an angiogenesis protein array, several angiogenesis-related proteins were found to be down-regulated by *CRIP2* re-expression. Analysis of conditioned media and gene expression in *CRIP2*-expressing clones validated protein array analysis results. ***Conclusions and Significance*:** An interesting candidate TSG, *CRIP2*, was identified. Functional studies confirm that *CRIP2* can suppress tumor growth *in vivo* and inhibit angiogenesis. Angiogenesis is important for cancer development; inhibition of angiogenesis by *CRIP2*, which down-regulates the angiogenesis and VEGF signaling pathway proteins further confirms its importance in tumor development in NPC. *CRIP2* is a potential candidate for future NPC therapeutic treatment.

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