PCDH9

Official Full Name

Protocadherin 9

This gene encodes a member of the protocadherin family, and cadherin superfamily, of transmembrane proteins containing cadherin domains. These proteins mediate cell adhesion in neural tissues in the presence of calcium. The encoded protein may be involved in signaling at neuronal synaptic junctions. Sharing a characteristic with other protocadherin genes, this gene has a notably large exon that encodes multiple cadherin domains and a transmembrane region. Alternatively spliced transcript variants encoding distinct isoforms have been found for this gene. [provided by RefSeq, Nov 2012].

The clinical prognosis of malignant gliomas is poor and PCDH9 down-regulation is strongly associated with its poor prognosis. But the mechanism of PCDH9 down-regulation is unknown. Abnormal miRNAs profiles regulate tumor phenotypes through inhibiting their target genes and miRNAs could inhibit target genes more efficiently by binding to both the promoter and 3'UTR of target genes. In this study, to search the dual inhibitory miRNAs which suppress PCDH9 expression in gliomas, we performed an integrative analysis of databases including miRDB, TargetScan, microPIR and miRCancer. We identified three candidate miRNAs which were predicted to bind both the promoter and 3'UTR of PCDH9 and up-regulated in gliomas. Then, we validated miR-215-5p up-regulation and PCDH9 down-regulation in glioma samples and demonstrated that miR-215-5p could inhibit the mRNA and protein levels of PCDH9 in glioma cell lines by targeting its promoter and 3' UTR at the same time. Moreover, miR-215-5p could increase glioma cell proliferation, clone formation, in-vitro migration and reduce apoptosis via inhibiting PCDH9 expression. Our study provides evidence for a novel dual inhibition of PCDH9 by miR-215-5p in gliomas and suggests that miR-215-5p might be a therapeutic target for the treatment of gliomas [1)]

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Wang C, Chen Q, Li S, Li S, Zhao Z, Gao H, Wang X, Li B, Zhang W, Yuan Y, Ming L, He H, Tao B, Zhong J. Dual inhibition of PCDH9 expression by miR-215-5p up-regulation in gliomas. Oncotarget. 2016 Dec 31. doi: 10.18632/oncotarget.14396. [Epub ahead of print] PubMed PMID: 28055966.