Ankyrin repeat domain 49

The Ankyrin repeat domain 49 (ANKRD49) is an evolutionarily conserved protein, which is related to mediate protein-protein interaction. However, the function of ANKRD49 in human glioma remains elusive. Mining through The Cancer Genome Atlas (TCGA) database, we found that the expression of ANKRD49 was increased in glioma tissues and that high expression of ANKRD49 was strongly associated with high disease grade and poor overall survival. To investigate the role of ANKRD49 in malignant glioma, lentivirus expressing shRNA targetting ANKRD49 was constructed in U251 and U87 malignant glioma cells. We demonstrated that ANKRD49 knockdown reduced the proliferation rate of U251 and U87 cells. Further mechanism analysis indicated that depletion of ANKRD49 led to the cell-cycle arrest and induced apoptosis in U251 and U87 cells. ANKRD49 knockdown also changed the expression of key effectors that are involved in stress response, cell cycle, and apoptosis, including p-HSP27 (heat shock protein 27), p-Smad2 (SMAD family member 2), p-p53, p-p38, p-MAPK (mitogen-activated protein kinase), p-SAPK/JNK (stress-activated protein kinase/c-jun n-terminal kinase), cleveagated Caspase-7, p-Chk1 (checkpoint kinase 1), and p-eIF2a (eukaryotic translation initiation factor 2a). Taken together, our findings implicate that ANKRD49 promotes the proliferation of human malignant glioma cells. ANKRD49 maybe an attractive target for malignant glioma therapy [1].

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Hao C, Duan H, Li H, Pei M, Liu Y, Fan Y, Zhang C. Up-regulation of ANKDR49, a poor prognostic factor, regulates cell proliferation of gliomas. Biosci Rep. 2017 Aug 4;37(4). pii: BSR20170800. doi: 10.1042/BSR20170800. Print 2017 Aug 31. PubMed PMID: 28694302.