Riboflavin transporter 2

Human riboflavin transporter 2 (RFT2) encoded by the SLC52A3 gene is a member of the SLC52 family that has been shown to play a key role in riboflavin homeostasis. Recently, a number of studies have shown that RFT2 is important in the development of several cancers, including esophageal squamous cell carcinoma, gastric cancer, and cervical cancer. However, its expression and function in glioma have not yet been explored. In this study, we found that RFT2 was overexpressed in glioma samples compared with normal brain tissue. Furthermore, RFT2 expression was correlated with WHO grade ($P<0.001$). Silencing of RFT2 resulted in inhibition of glioma cell proliferation through promotion of cell cycle arrest and apoptosis. Expression of proteins known to regulate cell cycle or apoptosis including p21, p27, BCL-2, and BAX was notably altered in RFT2-depleted cells. Furthermore, silencing of RFT2 impeded the migration and invasion of glioma cells through suppression of matrix metalloproteinase-2 and matrix metalloproteinase-9 expression. In addition to blocking cell proliferation in vitro, reduction of RFT2 levels also decreased tumor growth in vivo. These data suggest that RFT2 could be an attractive therapeutic target for the treatment of glioma [1].

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Fu T, Liu Y, Wang Q, Sun Z, Di H, Fan W, Liu M, Wang J. Overexpression of riboflavin transporter 2 contributes toward progression and invasion of glioma. Neuroreport. 2016 Oct 19;27(15):1167-73. doi: 10.1097/WNR.0000000000000674. PubMed PMID: 27584688.