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DOWNREGULATION OF SLC-16 CAN INCREASE APOPTOSIS LEVEL IN GASTROINTESTINAL CANCER

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ABSTRACT

Background: Gastrointestinal cancers constitute 35% of all cancer-related deaths and chemotherapy resistance is a major challenge for the treatment of these cancers. The SLC gene family encodes various group of membrane transmitters that play critical roles in establishing cellular homeostasis by transporting ions and different molecular groups. To date, studies have revealed the active roles of some of SLC members in chemotherapy resistance in various malignancies. However, there is no study to investigate the roles of SLC-16 gene in tumor biology. Therefore, we aimed to consider the effects of downregulation of SLC-16 in cell lines related to gastrointestinal cancers.
Methods: SCL-16 expression was downregulated in SW-480, KATO-3and PANC-1 cell lines using sh-RNA transfection. RT-PCR and western blot were performed to prove downregulation of SCL-16 knockdown levels in these cell lines. Then, Oxaliplatin was treated to all cells and the effects of this drug were evaluated by cell cycle, apoptosis, and cell migration assays in downregulated SRC cells.
Results: SLC-16 was found to be down-regulated after sh-RNA transfection at the mRNA and protein levels. In the downregulated group of SCL-16, it was detected that Oxaliplatin increased apoptosis and cell numbers in the G-1 of the cell cycle but had no effect on the cells' ability to metastasize.
Conclusion: SLC-16, one of the SLC families, plays critical roles in the stabilization of cancer cells, and targeting applications of this gene may be a potential way to enhance the effects of chemotherapy in gastrointestinal cancer.
Keywords: Gastrointestinal cancer, SLC-16, Chemotherapy