Ulger C et al., J Cell Signal 2018, Volume 3
DOI: 10.4172/2576-1471-C1-003

The Effect of Baicalein on Wnt/β-Catenin pathway and MiR-25 expression in Saos-2 Osteosarcoma Cell Line

Ulger C and **Orenlili yaylagul E**
Adnan Menderes University Faculty of Arts & Science Department of Biology Molecular Biology, Turkey

Osteosarcoma is the most common primary bone malignancy which occurs frequently in children and adolescents. The flavonoid baicalein, shows a wide range of biological and pharmaceutical effects, with its potent antitumor activity raising great interest in recent years. MicroRNAs are emerging as a class of small regulatory RNAs whose alterations are implicated in the initiation and progression of human cancers. MicroRNA-25 (miR-25) has recently been found to be involved in many critical processes in human cancers. In this study, the effect of baicalein and miR-25 on Wnt/β-catenin signaling pathway in osteosarcoma cell line Saos-2 was investigated. Cell viability and apoptosis was assessed, mRNA and protein expressions of β-catenin, GSK-3β, Axin2 and LRP-5, which are associated with the Wnt/β-catenin signaling pathway, were determined. In Saos-2 cells, baicalein IC50 and AP50 values were found to be 35 μM ve 50 μM, respectively. It is indicated that baicalein can inhibit the proliferation and induce apoptosis and also increase miR-25 expression of Saos-2 cells in a dose-dependent manner. Baicalein treatment and miR-25 mimic transfection decreased the expression of β-catenin, Axin2 and LRP-5, while increasing the expression of GSK-3β. Anti-miR-25 treatment decreased the expression of GSK-3β and LRP-5, while β-catenin and Axin2 expression increased. These findings demonstrate that baicalein may target genes related to the Wnt/β-catenin pathway by regulating miR-25 expression and may be a potential Wnt/β-catenin pathway inhibitor for osteosarcoma therapy.

culger@adu.edu.tr

Notes: