Background: Uterine fibroid or leiomyoma, a benign tumor derived from smooth muscle cell of myometrium, is the most common tumor occurring in the genital tract of American women over 30 years of age. The generation of uterine fibroid is associated with several key cellular mechanisms including proliferation through receptors for estrogen and progesterone, or for growth factors such as epidermal growth factor (EGF), insulin-like growth factor-I (IGF-I) or vascular endothelial growth factor (VEGF). Apart from them, serotonin (5-HT) receptors, especially 5-HT 1B, have been recently shown to contribute to the survival of tumor cells in a number of malign tumors.

Aim: Our aim was to investigate whether SB216641, a selective antagonist of 5-HT 1B receptors, has any effects on proliferation and clonogenicity in benign uterine fibroid. Materials and Methods: For this purpose, we performed MTS assay and clonogenic survival assay in human uterine leiomyoma (huLM) cell treated with the doses of 2, 4, 6, 8, 10 μM for 72 h and 14 days, respectively. Results: Based on our findings, SB216641 led to the inhibition of both cell viability and clonogenic growth as a dose dependent manner.

Conclusion: Our data suggests that SB216641 has the therapeutic potential through the inhibition of survival of huLM cell and also might be linked with further cellular mechanisms for the prevention.