# The anti-metastatic effect of baicalein on colorectal cancer.

Chai Y[1], Xu J[1], Yan B[1].

https://www.ncbi.nlm.nih.gov/pubmed/28259937

## Abstract

Baicalein, a naturally occurring flavonoid isolated from the roots of Scutellaria baicalensis, is historically and widely used as anti-inflammatory and anticancer therapy. Nevertheless, the anti-metastatic effect and underlying molecular mechanisms of baicalein on colorectal carcinoma (CRC) remain unclear. The aim of the present study was, therefore, to invastigate the anti-metastatic activity of baicalein and related mechanism(s) on CRC cells. In this study, we observed that baicalein treatment inhibited proliferation, as well as migration and invasion of HT-29 and DLD1 cells. Baicalein decreased the expression of the matrix metalloproteinases-2 (MMP-2) and MMP-9 in a dose-dependent manner. Also, baicalein treatment significantly reduced phosphorylation of extracellular signal regulated kinases (ERK). Furthermore, in DLD1 cells, MEK1 overexpression partially blocked the anti-metastatic effects of baicalein. Combined treatment with an ERK inhibitor (U0126) and baicalein led to the synergistic reduction of MMP-2/9 expression; and the invasive capabilities of DLD1 cells were also inhibited markedy. Finally, intragastric administration of baicalein inhibited CRC xenograft growth in vivo and suppressed the phosphorylation of ERK and the expression of MMP-2/9 in tumor tissues. Consequently, baicalein suppresses CRC cell invasion via inhibition of the ERK signaling pathways, indicating that baicalein is a potential agent for CRC treatment.