

Mechanism of apoptosis induced by curcumin in colorectal cancer

ABSTRACT

Colorectal cancer (CRC) is among the top three cancer with higher incident and mortality rate worldwide. It is estimated that about over than 1.1 million of death and 2.2 million new cases by the year 2030. The current treatment modalities with the usage of chemo drugs such as FOLFOX and FOLFIRI, surgery and radiotherapy, which are usually accompanied with major side effects, are rarely cured along with poor survival rate and at higher recurrence outcome. This trigger the needs of exploring new natural compounds with anti-cancer properties which possess fewer side effects. Curcumin, a common spice used in ancient medicine was found to induce apoptosis by targeting various molecules and signaling pathways involved in CRC. Disruption of the homeostatic balance between cell proliferation and apoptosis could be one of the promoting factors in colorectal cancer progression. In this review, we describe the current knowledge of apoptosis regulation by curcumin in CRC with regard to molecular targets and associated signaling pathways.

Keyword: Cell death; Apoptosis; Curcumin; Colorectal cancer