**Promising potential of boron compounds against Colorectal cancer\***

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Colorectal cancer (CRC), the third most common type of cancer worldwide, accounts for approximately 10% of all cancer cases and is the second leading cause of cancer-related deaths worldwide. It is known that factors such as angiogenesis, proliferation, apoptosis, invasion and the immune system play a role in CRC formation and metastasis, and that intracellular signaling pathways are effective on these factors.
Although 5-Fluorouracil and other existing drugs used in the treatment of CRC today are the preferred agents, their treatment success rates are low as they cause chemoresistance in secondary treatment and relapse cases due to their large molecular structure.
In the last few years, boron compounds have become increasingly used in the chemotherapy of some types of cancer with high malignancy and inoperable cancers. Although many boron derivatives such as boric acid (BA) have been discovered to have anticancer effects, there are also many boron derivatives whose anticancer effects have not yet been discovered. Our aim in this study was to investigate the anticancer effects of undiscovered boron compounds (Dodecaborate, colemanite (Col), ulexite (UX) and borax (BX), sodium pentaborate pentahydrate (NaB), lithium borate (LTB)) in colon cancer models.
For this purpose, the proliferative and cytotoxic effects on colon cell cultures (HorF, Caco-2 and HCT116) were investigated with crystal violet (CV, 24 hours) and MTT (24 and 48 hours) tests, respectively. These cells were investigated for Bax and Caspase-3 to be analyzed by immunofluorescence method to determine proapotosis and apoptosis.
These data reveal that the synthesized compound has a dose- and time-dependent effect, is more effective for cancer cells at low concentrations, and that the compounds have an anti-cancer effect considering the cancer selectivity index.

Keywords: Colorecral Tumors, Bor compounds,HOrF, Caco-2, HCT116

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