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Monitoring the Effects of β-Lapachone on ^{13}C-Ethyl Acetoacetate Metabolism in Cultured Colo-205 Colorectal Cancer Cells[1] WIRYA FEIZI, LLOYD LUMATA, University of Texas at Dallas — Colorectal cancer (CRC) is the third most common malignancy diagnosed globally and the fourth leading cause of cancer-related death worldwide. In this study, we have investigated the metabolic effects of chemotherapeutic drug β-lapachone on cultured Colo-205 CRC cells. β-lapachone works through the critical enzyme NQO1, which is abundant in CRC, through its conversion to semiquinone which eventually leads to destroy the cancer cells. In particular, we have studied the effects of β-lapachone on the metabolism of ^{13}C-ethyl acetoacetate (EAA) using ^{13}C nuclear magnetic resonance (NMR) spectroscopy. Our results indicate that EAA metabolism is sensitive to the chemotherapeutic effect of β-lapachone. In addition to NMR results detailing the influence of β-lapachone on EAA metabolism, additional data on MTT cell viability assays, Western blots of NQ01 protein expression, and microscopic images of cells will also be presented here. This study is supported by the Welch Foundation grant AT-1877, DOD grants W81XWH-21-1-0176 and W81XWH-19-1-0741, CPRIT grant RP180716, and the UTD CoBRA and SPIRE grants.

[1]Monitoring the Effects of -Lapachone on CRC's Metabolism

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