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The Effects of Highly Active Antiretroviral Therapy (HAART) on the Expression of Muc1 and P65 in a Cervical Cancer Cell Line, HCS-2

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Abstract : Cervical cancer is the third most commonly diagnosed cancer globally and it is one of three AIDS defining malignancies. Highly active antiretroviral therapy (HAART) is a combination of three or more antiretroviral drugs and has been shown to play a significant role in reducing the incidence of some AIDS defining malignancies, although its effect on cervical cancer is still unclear. The aim of this study was to investigate the relationship between cervical cancer and HAART. This was achieved by studying the expression of two signalling molecules expressed in cervical cancer; MUC1 and P65. Following the 24 hour treatment of a cervical cancer cell line, HCS-2, with drugs which are commonly used as part of HAART at their clinical plasma concentrations, real-time qPCR and immunofluorescence were used in order to study gene and protein expression. A one way ANOVA followed by a Tukey Kramer Post Hoc test was conducted using JMP 11 software on both sets of data. The drug classified as a protease inhibitor (PI) (i.e. LPV/r) reduced MUC1 and P65 gene and protein expression more than the other drug tested. PIs are known to play a significant role in cell death, therefore the cells were thought to be more susceptible to cell death following treatment with PIs. In conclusion, the drugs used, especially the PI showed some anticancer effects by facilitating cell death through decreased gene and protein expression of MUC1 and P65 and present promising agents for cancer treatment.

Keywords : cervical cancer, haart, MUC1, P65
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