4-O-Methylgallic acid isolated from the leaves of the mistletoe growing on *Saraca asoca* induces caspase-mediated apoptosis in cervical cancer cells via down-regulation of HPV

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Cervical cancer, the second most common gynecological malignancy remains a leading cause of cancer death in women in developing countries. The major etiologic factor for cervical cancer is high-risk HPV infection. Several studies indicate that the E6 and E7 gene products play a critical role in cervical carcinogenesis. Medicinal plants have gained much importance in the development of new cancer treatment strategies and extracts derived from mistletoe have been shown to kill cancer cells *in vitro*. We have isolated 4-O-Methyl Gallic Acid (4-OMGA) from the mistletoe growing on *Saraca asoca* which induces apoptosis in cervical cancer cells. Among various cervical cancer cells screened the compound exhibited maximum cytotoxicity in HeLa (IC$_{50}$-17 µg/ml) followed by SiHa (IC$_{50}$-37 µg/ml), both of which are HPV positive cells while the cytotoxicity was comparatively less in the HPV negative cell line C33A (IC$_{50}$-91 µg/ml). The compound induces apoptosis is HeLa as evidenced by caspase activation and PARP cleavage. We also observed that the compound is down-regulating the expression of E6/E7 (both RNA and protein level) in HeLa cells in a dose dependent manner.

Biography

Lekshmi R Nath obtained her MPharm from K L E Society’s College of Pharmacy. Currently, she is pursuing her PhD in Biotechnology at Rajiv Gandhi Centre for Biotechnology, Kerala, India. She has published more than 5 papers in reputed journal.

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