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Prodigiosin associated anti metastatic effect and induction of apoptosis in adeno gastric carcinoma

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The suppression of cancer metastasis is a crucial therapeutic need. Prodigiosin induces apoptosis in adeno gastric carcinoma. Prodigiosin has been shown to have multiple cellular targets. Therefore, the exact mode of action of prodiginines in inducing apoptosis is not clear. To examine the cytotoxic effect of prodigiosin in bringing out apoptosis, induction of activation of apoptotic pathways in gastric adeno carcinoma cell lines was studied. The spectral and photophysical characteristics of the autofluorescent prodigiosin were utilized to investigate the accumulation of the prodigiosin molecule in the live cell by imaging a single-cell under the confocal microscope for 1 hour. The tunnel assay revealed extensive DNA degradation during apoptosis. The inhibitors of cell entry indicated that prodigiosin enters the cells through the formation of the early endosome and caveosome. Prodigiosin has damaging activity against extracellular matrix and cytoskeleton of a cell, and also shown to have accompanied by changes in cell surface topography leading to variation in adhesion and migration characteristic of cancer cells. Thus, all this would interrupt multiple cell cycle checkpoints and thus trigger many of the intracellular apoptotic signaling pathways leading to apoptosis. Our efforts are underway in elucidating novel signaling pathways underlying the molecular mechanism of the anti-cancer and anti-metastatic effect of prodigiosin. Anti-metastasis drugs have an exceptional lead role in changing the standards of drug development.

Biography

N Darshan has completed his MTech from Manipal University, India and is currently pursuing his Doctoral studies from Academy of Scientific & Innovative Research (AcSIR) at Central Food Technological Research Institute (CSIR-CFTRI), Mysore, India. He is a Fellow of Council of Scientific & Industrial Research (CSIR). He has published two papers in reputed international journals and is an active Member of Association of Food Scientists and Technologists (AFSTI), India. He also has presented papers and won awards in several national conferences.

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