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TITLE

Synthesis, Anti-proliferative, Anti-migratory and Anti-invasive Properties of Novel Sugar Mimetic Isoxazolines Against Malignant Cancer Cells In Vitro

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A series of 5-substituted isoxazoline ring to the tricyclic azepine derivatives were synthesized through 1,3-dipolar cycloaddition reaction. The pure cycloadducts were tested on invasive behavior of murine osteosarcoma cells (LM8G7), which express high amount of chondroitin sulphate and vascular endothelial growth factor. Among tested molecules, 5-[-3-(4-chlorophenyl)-4, 5- dihydroisoxazol-5-yl methyl]-5H dibenzo [b,f] azepine was found to inhibit the invasion of LM8G7 cells strongly than the other structurally related small molecules and inhibited the invasion of human breast cancer cells completely at 10 μ M. Furthermore, this compound inhibited the migration of LM8G7 and human ovarian cancer (OVSAHO) cells. Evidently, this compound also inhibited the proliferation of LM8G7, OVSAHO, RPMI 8266 cells-resistant to melphalan cancer cells, and human breast cancer cells (MCF-7) at the tested concentrations. In conclusion, we herein report the in vitro anti-proliferative, anti-migratory, and anti-invasive properties of novel sugar mimetic isoxazolines against malignant cancer cells for the first time.

Biography

Prof K. S. Rangappa did his B.Sc (1976), M.Sc (1978), Ph.D (1982) from the University of Mysore and D. Sc degree by thesis of the University of Mysore for his independent research contribution (1998). He is currently working as a Vice Chancellor of Karnataka State Open University. He has worked as post-doctoral/Research Associate/ Visiting Professor at several Universities Prof. Rangappa is a Fellow of Royal Society of Chemistry (FRSC; UK) and Fellow of National Academy of Sciences (FNASc) INDIA. Prof. Rangappa has made novel contributions to Bioorganic and Medicinal Chemistry. Prof. K. S. Rangappa has published more than 300 research papers in national and international peer reviewed journals. He has over 1600 scientific citations for his research contributions with h-index 21. Prof. Rangappa has successfully guided 41 candidates for Ph.D degree. Prof. Rangappa is a recipient of several prestigious national and international awards.