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Galectin-3 inhibitors for the treatment of canine hemangiosarcoma (HAS): In silico strategy

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Hemangiosarcoma (HSA) in dogs is deadly neoplastic disease characterized by an aggressive growth of malignant cells with endothelial phenotype, widespread metastasis and poor response to chemotherapy. Galectin-3 (Gal-3), a β -galactoside-binding lectin implicated in tumor progression and metastasis, endothelial cell biology and angiogenesis and regulation of apoptosis and neoplastic cell response to cytotoxic drugs has not been studied before in tumors arising from malignant endothelia. Hence, an approach has been taken to design the Gal-3 inhibitors using modified citrus pectin (MCP). The study was undertaken by using commercial interaction tool called Discovery Studio. These results highlight the important role of Gal-3 in the biology of HSA and identify Gal-3 as a potential therapeutic target in tumors arising from malignant endothelial cells.

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Identification of different miRNA binding sites at 3'UTR region of bovine HSP90AA1 gene among different Indian breeds of cattle

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3'UTR regions are the important targets for regulation of stressor genes in the mammalian system. A total of 28 mutations were identified in the 3'UTR region of bovine HSP90 gene among different indigenous and crossbred cattle. Results revealed that, crossbred cattle are more prone to natural mutational change compared to indigenous animals and the difference was statistically significant. Prediction of microRNA binding site revealed that, there are at least seven different micro RNAs which may interact at 3' un-translated region of bovine HSP90AA1 gene among different breed of cattle. Out of the seven microRNAs, miR8882 and miR3796 are the most commonly distributed among different cattle breeds while the miR9491 and miR-2277-5p were restricted to Gir and Ongole respectively. While miR8882 binding site were unanimous, miR3796 showed variation among the breeds.

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