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Fetal hemoglobin reactivation induced in K562 cell line by resveratrol: An alternative treatment of Beta Thalassaemia

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Thalassaemia syndromes are very heterogeneous group of hereditary disorders that are characterized by a defect in the synthesis of one or more hemoglobin (Hb) polypeptide chains. During the last two decades, considerable efforts have been focused on the pharmacological induction of HbF in patients with hemoglobin disorders. The present work was focused on the identification of fetal hemoglobin inducting activity in peanut resveratrol by using the Human erythroleukemic cells line i.e. K562. The HbF inducing effects of resveratrol was found due to the activation of p38 MAPK signaling pathway & inactivation of ERK signaling pathway involved in the progression of HbF induction in cell line. K562 cell line treated with different concentrations (20-80 μ g/ml) of resveratrol dosage, exhibited best results at concentration of 60 μ g/ml in comparison to standard dose of 12.5 μ g/ml Hydroxyurea. Cell cytotoxicity was observed at 80 μ g/ml according to MTT assay. The efficacy of resveratrol is a promising alternative and complementary agent for the management of β -thalassaemia as it increases fetal hemoglobin which in turn compensates the level of falling rate of adult hemoglobin in β -thalassemic patients

Biography

Richa Gupta has pursued Masters (M.Tech.) in Biotechnology in the year 2009. Since then she has been working as Assistant Professor in School of Biotechnology, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, India. She has a few publications in recent 2 years

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