

EVALUATION OF ANTIPROLIFERATIVE PROPERTIES OF ASHWAGANDHA EXTRACT IN IMR 32 HUMAN NEUROBLASTOMA CELL LINE

Hardeep Kataria¹, Gurcharan Kaur¹, Renu Wadhwa², Sunil Kaul²

¹*Department of Biotechnology, Guru Nanak Dev University, India,* ²*National Institute of Advanced Industrial Science and Technology, Japan*

PURPOSE: Neuroblastoma is the most common extracranial solid cancer in childhood and the most common cancer in infancy. Although there is advancement of newer techniques and modulations in chemotherapy, radiation therapy and surgery, the survival rate of patients with neuroblastoma is very low. As Ashwagandha extracts had been shown to exert strong anticancer effects against diverse malignancies different from neuroblastoma, the antiproliferative effect of Ashwagandha leaf extract on the growth of human neuroblastoma cell line, IMR 32 was tested.

EXPERIMENTAL DESIGN: Different concentrations of Ashwagandha leaf extract were tested on IMR 32 neuroblastoma cell line. Cell proliferation was evaluated by MTT assay. Expression analysis of Neurofilament (NF) 200 and heat shock protein (HSP) 70 was evaluated using immunocytochemistry.

RESULTS: Ashwagandha extract was able to induce a dose-dependent inhibition of cell proliferation in IMR 32 cell line. NF200 and HSP 70 protein expression appeared to be elevated in 0.5% treated group.

CONCLUSIONS: Further studies are needed to evaluate mechanisms underlying cell proliferation inhibitory effects of Ashwagandha extract and its bioactive constituents.