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Potential of Recombinant Protein (ULLB-0005) in Different Cancer

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Abstract

Recombinant protein (ULLB-0005), is derived from a natural fungal protein, which has high binding specificity toward the carbohydrate antigen (Gal□1–3GalNAc-□-O-Ser/Thr). The natural Amino acid sequence has been modified to make more stable and soluble protein. Modified sequence has been cloned and express in E.coli. The protein was purified through different column chromatography and was characterized as a single protein.

The present study evaluated the anticancer activity of Recombinant protein ULLB-0005 by determining in vitro cytotoxicity fingerprint, efficacy, mechanism and safety in human cell lines. Promising cytotoxicity was observed in 9 different cancer cell line, with a good safety profile in human PBMCs. The efficacy of the Molecule as antitumor agent was assessed in respective xenograft immuno-compromised mice models in vivo. As expected the molecule showed strong anti-cancer activity in immune-compromised mice model in various cancers which was observed in the reduction of tumor volume.

ULLB-0005 induced strong apoptotic signal by modulating Phosphatidyl serine (PS) externalization, mitochondrial membrane depolarization, cell cycle arrest, ultimately leading to death in cancer cells. Inhibition of proliferation and migration was observed in human endothelial cells, suggesting potential antiangiogenic effect.

Further studies to evaluate possible synergistic effect of the molecule with approved chemotherapeutic agents for Breast and Pancreatic cancers showed good synergy in In-vitro test. Detailed multi-arm mechanistic studies to investigate the effect of the molecule on multiple targets and signaling pathways involving kinases, GPCRs, Growth factor receptors, inflammatory markers and circulatory markers for metastasis are ongoing using multiple platforms. The data for the same shall be presented.

Biography:

Dr Sudeep Kumar did his Post Doc in Biotech from Valencia, Spain on purification, cloning and sequencing of Cellulase and Xylanase enzyme. He has more than 20 years of experience in Biopharma. He has worked from R&D to tech transfer and manufacturing of different molecules. He is dealing with different regulatory agencies for approval and faced WHO, USFDA and other regulatory audits. He also actively involved with clinical research team for Preclinical and clinical trials of recombinant proteins and vaccine. He established the VLP technology platform for different vaccine in India in collaboration with Novavax.