

Special Issue: NCNN-2014

(National Conference on Nanoscience and Nanotechnology - 2014)

Holistic Approaches for the Cure of Ailments by the Application of Antibody Drug Conjugation

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Antibody drug conjugates is a class of biotherapeutics which represents treatment strategy in the field of oncology. Antibodies engineered to carry biologically active drugs and deposit in target cell. The monoclonal antibodies conjugation with cytotoxic drugs with labile bonds to make antigen specific delivery of highly potent cytotoxic drugs to tumor cell. Coupling antibodies to cytotoxic drug permit greater control of drug pharmacokinetics and improve delivery to target tissue. An anticancer drug is coupled with antibody that specifically targets a certain tumor marker . The biochemical reaction between the antibody and the target protein triggers a signal in the tumor cell, which then absorbs or internalizes. After ADC is internalized , the cytotoxic drug is released and kills the cancer. ADCs binds to antigen expressing cells following tumor localization and get internalized into endosomes/lysosomes. The rate and extend of internalization are important because it influences uptake of the drug as well as release of the drug in tumor and normal cells. Selective targeting by antibodies is feasible and cell death of the target is the therapeutic goal.