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Recombinant immunotoxin targeting cancer specific surface antigen for cancer therapy

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Abstract

Recombinant immunotoxins (RITs) are fusion proteins composed of the antigen binding portion of an antibody and a portion of a lethal toxin by a flexible peptide linker. The immunotoxin binds to a surface antigen on cancer cells, enters the cell by endocytosis where it inactivate the protein synthesis machinery and eventually kills the cell by inducing apoptosis. RITs are expressed in E. coli, purified as clinical grade material and been tested in patients with various types of cancer in clinical trials. Modern molecular biological techniques were used to improve the efficacy of these agents *in vitro* and test them by preclinical model systems. Many immunotoxins have been tested in clinical trials but most success has been achieved in patients with hematologic malignancies. Poor responses against solid tumor for these agents are likely due to poor penetration into tumor masses as well as the neutralizing immune response to the toxin component of the immunotoxin. Challenges to overcome those issues to make RIT an attractive therapeutics will be discussed.

Biography

Dr Bera has completed his Ph. D from Calcutta University, India and postdoctoral studies from the University of California, Berkeley. He is currently an Associate Scientist at the National Cancer Institute, NIH. He has published more than 70 research articles in reputed journals and serving as an editorial board member of Chemotherapy.