

Answer 1:

### **Bibliographic Information**

**Recombinant immunotoxins for the treatment of haematological malignancies.** Kreitman Robert J Clinical Immunotherapy Section, Laboratory of Molecular Biology, Centers for Cancer Research, National Cancer Institute, National Institutes of Health, 9000 Rockville Pike, Building 37, Room 5124b, Bethesda, MD 20892-4255, USA. kreitmar@mail.nih.gov Expert opinion on biological therapy (2004), 4(7), 1115-28. Journal code: 101125414. E-ISSN:1744-7682. Journal; Article; (JOURNAL ARTICLE); General Review; (REVIEW) written in English. PubMed ID 15268678 AN 2004364711 MEDLINE (Copyright (C) 2008 U.S. National Library of Medicine on SciFinder (R))

### **Abstract**

Recombinant immunotoxins are fusion proteins which contain a ligand derived from the immune system fused to a toxin. The protein toxin is truncated to delete its binding domain, allowing selective ligand-directed binding. Growth factor fusion toxins are often considered immunotoxins. One of these molecules, containing the truncated diphtheria toxin and human IL-2 (Ontak, Ligand Pharmaceuticals), has been approved for the treatment of cutaneous T-cell lymphoma. Recombinant immunotoxins have also been produced containing the variable domains (Fv fragment) of monoclonal antibodies fused to toxins. These agents are relatively versatile with respect to the range of antigens possible. Several of these recombinant immunotoxins have showed clinical effectiveness in Phase I testing against haematological malignancies. One of these molecules, BL22, targets CD22 on hairy-cell leukaemia and has enabled patients to achieve complete remissions despite previous treatment and resistance to chemotherapy.