

Technology Offer

TCR gene transfer for CLL

Reference Number: TO 01-00717



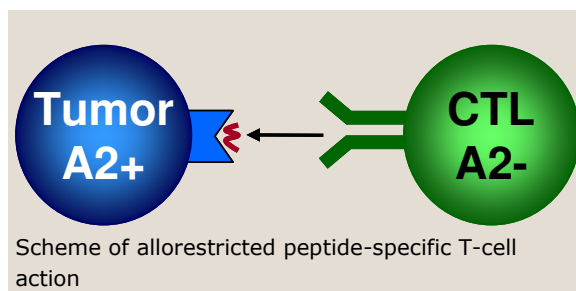
A Company of the
Life-Science Foundation
for the Promotion of
Science and Research

Challenge

The incidence of B cell neoplasms is increasing world wide. In chronic lymphocytic leukemia (CLL), still no established curative therapy is available at any point of diagnosis. For patients with progressing CLL, treatment with conventional doses of chemotherapy is not curative; selected patients treated with allogeneic stem cell transplantation have achieved prolonged disease-free survival. Immunotherapy has been shown to be highly successful in low grade lymphoma. Target specific therapies using monoclonal antibodies against CD20 (Rituximab) or CD52 (Alemtuzumab) are only partially efficient because of tumor escape due to down regulation of the target antigens from the cell surface.

Technology

A T cell receptor (TCR) recognizing antigenic peptides derived from tumor-associated antigen FMNL1 and capable of inducing peptide specific killing of a target cell is provided.



FMNL1 is a formin related protein in leukocytes which is highly expressed in >60% of CLL samples tested and aberrantly expressed in transformed cell lines of various tissues. Allo-HLA-A2 restricted peptide specific T cells have been generated which show specific cytotoxicity against malignant cell lines derived from lymphoma and renal cell carcinoma.

Commercial Benefit and Opportunity

The allorestricted FMNL1 peptide-specific T cells will be helpful for the development of efficient immunotherapies against malignant lymphoma, especially CLL, and other malignancies. Those T cells bearing TCR which have the capacity to recognize their MHC-peptide ligand on the tumor cells can be used for treating patients with significantly reduced risk of graft-versus-host-disease (GVHD).

The technology is available for (no)-exclusive licensing. Parties interested in collaborative research and development are highly welcomed.

Developmental Status

Various T cell clones have been successfully tested *in vitro* with regard to specificity, TCR dependency, and cross-reactivity. Further optimization strategies as murinization of constant chains and codon optimization improved the TCR. In addition, the use of murinized constant chain chimera resulted in TCR with high functional efficiency.

Patent Situation

Patent applications are pending in EP (2027150) and US.

Relevant Publication

Schuster et al. (2007), Blood 110, 2931-2939

Berlin
Braunschweig
Hamburg
Hanover
Munich
Neuherberg

Ascenion GmbH
Herzogstraße 64
D-80803 Munich
T +49 (0) 89 31 88 14 - 0
F +49 (0) 89 31 88 14 - 20
info@ascenion.de
www.ascenion.de