

Answer 1:

Bibliographic Information

CD52 antigen expressed by malignant plasma cells can be targeted by alemtuzumab in vivo in NOD/SCID mice.

Carlo-Stella, Carmelo; Guidetti, Anna; Di Nicola, Massimo; Longoni, Paolo; Cleris, Loredana; Lavazza, Cristiana; Milanese, Marco; Milani, Raffaella; Carrabba, Matteo; Farina, Lucia; Formelli, Franca; Gianni, Alessandro M.; Corradini, Paolo. "Cristina Gandini" Medical Oncology Unit, Istituto Nazionale Tumori, Milan, Italy. *Experimental Hematology* (New York, NY, United States) (2006), 34(6), 721-727. Publisher: Elsevier Inc., CODEN: EXHMA6 ISSN: 0301-472X. Journal written in English. CAN 145:436807 AN 2006:488461 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

Objective: To explore new treatments specifically targeting malignant plasma cells (PCs), we examd. CD52 antigen expression on primary PCs as well as multiple myeloma (MM) cell lines, and investigated in vivo the antimyeloma activity of alemtuzumab. **Materials and Methods:** PCs were enriched from the marrow of MM patients (n = 39) according to CD138 expression and then analyzed by 3-color flow cytometry and quant. PCR. The in vivo activity of alemtuzumab was evaluated in a xenotransplant model of MM in nonobese diabetic/severe combined immunodeficient (NOD/SCID) mice. **Results:** CD52 expression revealed a substantial heterogeneity in terms of both percentage of pos. cells and fluorescence intensity, with 25/39 (64%) MM patients showing $\geq 30\%$ CD138+ PCs expressing the CD52 antigen (mean = 79%; range, 33-100%). Similarly to primary cells, cell lines showed heterogeneous CD52 expression. Expression of CD52 mRNA by quant. PCR anal. strongly correlated with CD52 antigen detection by flow cytometry. In vivo, alemtuzumab treatment significantly increased the median survival of animals with an early- (64 vs 77 days, $p \leq 0.0005$) or advanced-stage (66 vs 75 days, $p \leq 0.02$) disease. **Conclusion:** We conclude that: 1. CD52 is expressed on PCs of a significant proportion of MM patients; 2. alemtuzumab used as a single agent exerts a good antitumor activity in NOD/SCID mice bearing an early-stage disease; and 3. alemtuzumab might have therapeutic potential in a subset of MM patients.