

Molecular Analysis of Immunological Reconstitution after Hematopoietic Stem Cell Transplantation in Childhood

メタデータ	言語: jpn 出版者: 公開日: 2021-10-22 キーワード (Ja): キーワード (En): 作成者: Uehara, Takahiro メールアドレス: 所属:
URL	https://doi.org/10.24517/00063700

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2003 Fiscal Year Final Research Report Summary

Molecular Analysis of Immunological Reconstitution after Hematopoietic Stem Cell Transplantation in Childhood

Research Project

Project/Area Number

14570730

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Pediatrics

Research Institution

KANAZAWA UNIVERSITY

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Project Period (FY)

2002 – 2003

Keywords

immunologic ontogeny / TREC / CDR3 spectratyping / CD244 / CD8β chain / cytotoxic granules / cytokine production / サイトカイン産生

Research Abstract

During intrathymic differentiation, progenitor T cells undergo T cell receptor(TCR)gene rearrangements.These T cells contain TCR rearrangement excision circle(TREC)as a byproduct.While TCR Vβ complementarity-determining region 3(CDR3)spectratyping analysis can be used to define the extent of clonal expansion within the TCR repertoire.We examined the expression of CD8β chain and CD244(human2B4) molecules within CD8T cells using these parameters(TREC concentration and TCR CD3 spectratyping)as differentiation markers.

1.CD8β chain : i) CD8α⁺β⁺<bw> and CD8αα T cells expand with advancing age ii)CD8α⁺β⁺<bw> cells entirely expressed TIA-1, but other fractions are

heterogeneous.CD8a⁺β⁺<bw> cells produced IFN-γ, and these cells were negative for IL-2 production.iii)Together wiht TCR CDR3 spectratyping and TREC concentration analysis, CD8a⁺β⁺<high> T cells undergo clonal expansion and differentiate into CD8a⁺β⁺<bw> and aa cells(Konno et al., Blood).
2.CD244 : i)CD224 positive CD8 T cells expand with aivancing age ii)We subdivided CD8 T cells into these fractions as CD28⁺CD62L⁺CD244⁻(A), CD28⁺CD62L⁺CD244⁺(B)and CD28⁻D62L⁻CD244⁺(C).TREC concentration and TCR CDR3 complexity socers were higher in fraction(A), much less in(B)and the least in fraction(C)(in preparation).
These observations may imply that CD8βchain and CD244 expression in CD8 T cells are useful markers for their functional properties.

Research Products (2 results)

AllOther

AllPublications

[Publications] Konnno, A.ほか: "CD8aa memory effector T cells descend directly from clonally expanded CD8a⁺β⁺<high>TCRaβ T cells in vivo"Blood. 100(12). 4090-4097 (2002) ▼

[Publications] Konno A., Okada K., Mizuno K., Nishida M;~, Nagaoki S., Toma T., Uehara T., Ohta H., Kasahara Y., Seki H., Yachie A., Koizumi S.: "CD8aa memory effector T cells descend directly from clonally expanded CD8a⁺β⁺<high>TCRaβ T cells in vivo"Blood.. 100. 4090-4097 (2002) ▼

URL: https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-14570730/145707302003kenkyu_seika_hokoku_

Published: 2005-04-18