

Tracking donor-reactive T cells: Evidence for clonal deletion in tolerant kidney transplant patients

Heather Morris, Susan DeWolf, Harlan Robins, Ben Sprangers, Samuel A. LoCascio, Brittany A. Shonts, Tatsuo Kawai, Waichi Wong, Suxiao Yang, Julien Zuber, Yufeng Shen and Megan Sykes

Sci Transl Med 7, 272ra10272ra10.
DOI: 10.1126/scitranslmed.3010760

Tolerating transplant

Transplant rejection remains a formidable barrier to successful organ transplantation. Recent advances, such as combined kidney and bone marrow transplantation (CKBMT), hint that rejection can be overcome by the induction of immune tolerance. Now, Morris *et al.* have developed a way to track T cells to determine how this tolerance works. They used high-throughput T cell receptor sequencing to find donor-reactive T cells before transplant and then tracked these clones after CKBMT. These donor-reactive T cells were reduced in CKBMT patients who achieved tolerance but not in a CKBMT patient who failed to achieve tolerance or in recipients of conventional, nontolerizing transplant protocols. These data suggest that clonal deletion is a mechanism of graft tolerance after CKBMT in humans.

ARTICLE TOOLS

<http://stm.sciencemag.org/content/7/272/272ra10>

SUPPLEMENTARY MATERIALS

<http://stm.sciencemag.org/content/suppl/2015/01/26/7.272.272ra10.DC1>

RELATED CONTENT

<http://stm.sciencemag.org/content/scitransmed/6/241/241ra77.full>
<http://stm.sciencemag.org/content/scitransmed/4/124/124ra28.full>
<http://stm.sciencemag.org/content/scitransmed/7/297/297le1.full>
<http://stm.sciencemag.org/content/scitransmed/7/297/297lr1.full>
<http://science.sciencemag.org/content/sci/356/6337/491.full>
<http://stke.sciencemag.org/content/sigtrans/8/382/ra63.full>
<http://stm.sciencemag.org/content/scitransmed/12/526/eaax6249.full>
<http://stm.sciencemag.org/content/scitransmed/12/535/eaba2501.full>

REFERENCES

This article cites 41 articles, 8 of which you can access for free
<http://stm.sciencemag.org/content/7/272/272ra10#BIBL>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science Translational Medicine (ISSN 1946-6242) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. The title *Science Translational Medicine* is a registered trademark of AAAS.

Copyright © 2015, American Association for the Advancement of Science