New recombinant antibody can isolate stem cells from umbilical cord blood

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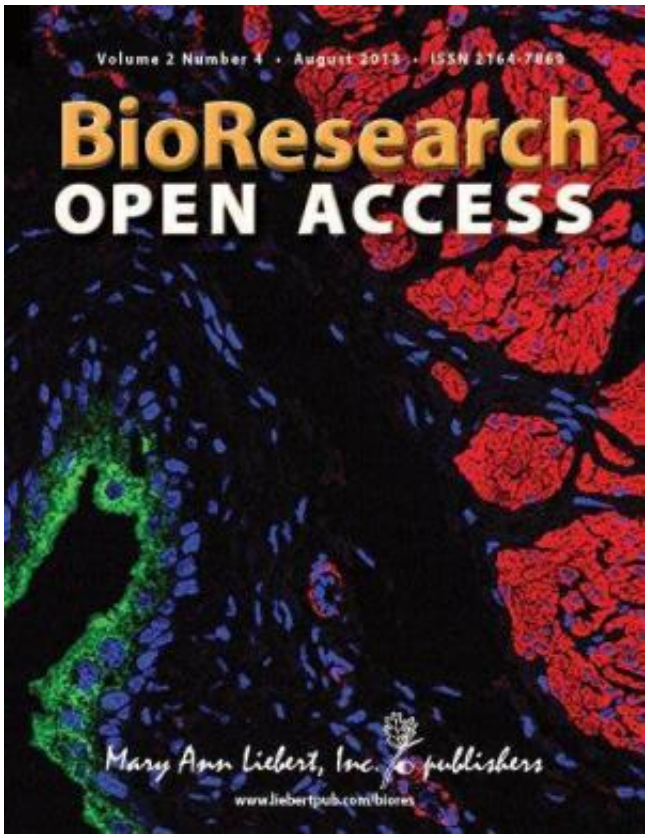

A new recombinant antibody can detect and isolate mesenchymal stem cells (MSCs), a nonembryonic source of stem cells with promising applications in tissue engineering, blood stem cell transplantation, and treatments for immune-mediated disorders. The antibody recognizes an i blood group antigen present on MSCs in umbilical cord blood, as described in a study published in *BioResearch Open Access*.

Tia Hirvonen and coauthors from the Finnish Red Cross Blood Service, Glykos Finland Ltd., and Biova Ltd. (Helsinki), and VTT Technical Research Center of Finland (Espoo), identified a blood donor with high levels of antibody to the i blood group antigen. No antibodies recognizing this antigen are commercially available at present.

In the article "Production of a Recombinant Antibody Specific for i Blood Group Antigen, a Mesenchymal Stem Cell Marker," the authors explain that the i antigen can serve as a marker to detect and isolate MSCs in umbilical cord blood (UCB). They describe the use of antibody phage display technology to produce a recombinant anti-i antibody that recognizes i antigen on the surface of UCB-MSCs as well as on red blood cells.

"The authors have used antibody phage display technology to generate an anti-i antibody," says *BioResearch Open Access* Editor Jane Taylor, PhD, MRC Centre for Regenerative Medicine, University of Edinburgh, Scotland. "The advantage of this technique is that antibodies against poorly immunogenic molecules can be generated, as an immunization strategy is not required. The availability of an anti-i antibody has the potential to improve the isolation efficiency of MSCs from umbilical cord blood samples."

More information: The article is available free on the *BioResearch Open Access* website.

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