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(54) Title: MEMBRANE FOR SEPARATION OF STEM CELLS FROM BIOLOGICAL SAMPLES, PRODUCTION PROCESS OF SAID MEMBRANE, AND PROCESS AND DEVICE FOR SEPARATION, COMPRISING SAID MEMBRANE

(57) Abstract: The subject of the invention is a membrane for separation of target stem cells from biological samples, more precisely from a single-cell suspension that was prepared from a biological sample. As a result, sterile target stem cells are obtained in physiological buffer. The membrane of the invention consists of a 3D carrier structure made of at least one layer of biocompatible polymer with specific pore size, as a carrier material, and covalently bound target molecules on its surface and/or in the pores. These target molecules are preferably target antibodies, which recognize characteristic antigens that are bound on the surface of the target stem cells and thus bind the target stem cells to the membrane. Target molecules can be either directly bound to the surface and/or in the pores of the carrier structure or are bound to the surface and/or in the pores of the carrier structure through specific functionalized nanoparticles, which are bound to or embedded into the 3D carrier structure of the membrane. In addition, the present invention includes the membrane production process as well as the process and device for the separation of target stem cells from a biological sample, which includes the above membrane as a constituent part.

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