

Abstract

DMSO-FREE CRYOPRESERVATION SOLUTION AND PREPARATION METHOD AND USE THEREOF

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Disclosed by the present invention is a cryopreservation solution without DMSO. On the basis of a volume of every 100 mL, the cryopreservation solution contains 0.01-50.0 g of bionic ice control materials, 5.0-30 mL of polyols, 1-30 g of water-soluble sugar, and 0-30 mL of serum, the rest being a buffer solution. The bionic ice control materials are selected from PVA and/or amino acid based bionic ice control materials. The cryopreservation solution according to the present invention and a freezing balancing solution do not contain DMSO. When being used for the cryopreservation of mouse oocytes and embryos, the described solution may achieve the same or an even higher cell and tissue survival rate and functional expression stability as or than a commercial cryopreservation solution (containing 15% DMSO), and has high preservation efficiency. The cryopreservation solution without DMSO or serum further solves the problems wherein parasitic biological contaminants may be introduced and stability is poor due to the commercial cryopreservation solution currently commonly used in clinical practice containing serum. The cryopreservation solution according to the present invention has a simple composition, a convenient source of raw materials and is low-cost, and may be widely applied in the cryopreservation of various types of cells.

(FIG. 1)