

Abstract

THAWING FLUID, PREPARATION METHOD THEREFOR AND USE THEREOF

5 Disclosed in the present invention are a thawing solution for cryopreservation, a preparation method therefor and a use thereof. The thawing solution comprises: 0.1-50 g of a biomimetic material for controlling ice, 0-1.0 mol L⁻¹ of a water-soluble sugar, and balance of a buffer solution, wherein the biomimetic materials for controlling ice is a material for controlling ice having an ice-philic group and a hydrophilic group, the hydrophilic group is a functional group that can form a non-covalent interaction with water molecules, and the ice-philic group is a functional group that can form a non-covalent interaction with ice. In the present invention, by means of the thawing solution and the thawing reagent prepared from the biomimetic material for controlling ice, which material has ice-philic and hydrophilic properties, the growth and recrystallization of ice crystals can be effectively controlled, and damage to cells or tissue caused by uncontrolled growth of the ice crystals during recovery can be significantly ameliorated. Moreover, the thawing solution and the thawing reagent have a good biocompatibility, do not contain animal serum, and have a low toxicity. Compared with a traditional thawing solution containing serum, the thawing solution and the thawing reagent of the present invention reduce the risks of shelf life being short and introduction of parasitic biological contaminants, and are more conducive to maintaining the generation stability of cells or tissues. In addition, the present invention has simple components, is low in cost and has good application prospects.

(FIG. 1)