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(54) Title: THAWING FLUID, PREPARATION METHOD THEREFOR AND USE THEREOF

(54) 发明名称: 一种解冻液及其制备方法与应用

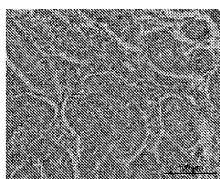


图1

(57) Abstract: Disclosed in the present invention are a thawing fluid for cryopreservation, a preparation method therefor and a use thereof. The thawing fluid 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 material 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 fluid and the thawing reagent prepared from the biomimetic material for controlling ice, which material has ice-philic and hydrophilic properties, the growth 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 fluid and the thawing reagent have a good biocompatibility, do not contain animal serum, and have a low toxicity. Compared with a traditional thawing fluid containing serum, the thawing fluid 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.

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本国际公布:

— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 本发明公开了一种冷冻保存用解冻液及其制备方法与应用, 其中解冻液包括: 仿生控冰材料0.1-50g、水溶性糖0-1.0mol L⁻¹、缓冲液余量, 仿生控冰材料为具有亲冰基团和亲水基团的控冰材料; 亲水基团为可与水分子形成非共价作用的官能团, 亲冰基团为可与冰形成非共价作用的官能团。本发明采用具有亲冰和亲水特性的仿生控冰材料制备的解冻液及解冻试剂, 能有效控制冰晶生长, 显著改善复苏过程中冰晶不可控生长对于细胞或组织的损害; 且生物相容性好, 不含动物血清, 毒性小, 相比于传统含有血清的解冻液, 降低了保质期短、带入寄生性生物污染物质等风险, 更有利于维持细胞或组织的传代稳定性。且本发明成分简单, 成本低廉, 具有良好的应用前景。