

этих продуктов в практику. Ключевыми преимуществами использования пуповинной сыворотки является то, что ее можно легко и массово получить из ПК. Она не содержит патогенов животного происхождения и имеет значительно более низкую иммуногенность. Безусловно, необходимо усовершенствовать и стандартизировать методы получения и тестирования плазмы/сыворотки ПК, разработать протоколы применения этого продукта для различных клеточных линий. Немаловажной в настоящее время характеристикой плазмы/сыворотки ПК является ее доступность и относительно невысокие затраты на ее получение.

ФИНАНСИРОВАНИЕ РАБОТЫ

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СОБЛЮДЕНИЕ ЭТИЧЕСКИХ СТАНДАРТОВ

В данной работе отсутствуют исследования человека или животных.

КОНФЛИКТ ИНТЕРЕСОВ

Авторы данной работы заявляют, что у них нет конфликта интересов.

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UMBILICAL BLOOD AS A TROPHIC-GROWTH SUPPLEMENT FOR CULTURAL WORK

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This review analyzes the results of modern high-tech research on the use of umbilical cord blood serum/plasma as an additive to culture media for cell culture growth. Since culture media are a key factor in cell culture, the review addresses the composition and properties of the major culture media used in cell biology and regenerative medicine. The authors pay special attention to growth factors; they describe the functional properties of the main families of these polypeptides (fibroblast growth factors, epidermal growth factors, transforming growth factors, differentiation growth factors, epidermal growth factors, endothelial cell growth factors, hematopoietic growth factors, etc.). It was found that one of the most promising sources of growth factors is cord blood serum/plasma. In this publication, the main technologies for cord blood collection and systematic studies on the content of growth factors, cytokines, exosomes and mRNA in cord blood are presented. Experimental data on the use of umbilical cord blood serum/plasma as an additive to culture media for the growth of various cell cultures of animal origin are described. Human umbilical cord blood serum/plasma is an affordable, safe product with a high content of biologically active molecules compared to animal sources. In order for umbilical cord blood serum/plasma to be widely used as an adjunct to culture media, standards for the manufacture and testing of this product must be developed.

Keywords: umbilical cord blood, umbilical cord blood serum/plasma, animal cell culture media, growth factors, cytokines, exosomes and mRNA, animal cell culture