

полноструктурные системы, в создании которых уже достигнуты значительные успехи.

Наш обзор сфокусирован на тех клеточных моделях эндометрия, которые являются персонализируемыми и успешно отражают различные свойства этой ткани *in vivo*. Заболевания эндометрия и многие биологические процессы, протекающие в матке, например инвазию трофобласта, невозможно адекватно воспроизвести на тонких образцах ткани, образованных монокультурами клеток. Кроме того, важную роль в функционировании эндометрия и развитии его патологии играют сосуды и клетки иммунной системы, что пока не учитывается в модели. Важны также доступность биологического материала пациента и возможность стандартизации. Продвинутые 3D-модели эндометрия в культуре способны внести существенный вклад в изучение эндометрия человека в норме и при патологии и стать ключевым этапом перехода к персонализированной медицине будущего.

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## THREE-DIMENSIONAL CELL MODELS OF ENDOMETRIUM IN DEVELOPMENT OF PERSONIFIED METHODS OF TREATMENT

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The development of personalized approaches in the treatment and diagnosis of various diseases, which consider individual characteristics of the patient's organism, is an actively developing area of modern medicine. However, the transition to personalized medicine is impossible without the generation of relevant and patient-specific disease models. One of the trends in modern cell biology is the use of three-dimensional (3D) cell cultures similar in architecture to the tissues of the human body. Models based on such cultures are the most physiologically adequate and especially valuable when it is necessary to reproduce functional features of the patient's tissue. Models of endometrium, the inner lining of the uterus, which provides the onset and development of pregnancy, are just like that. Unfortunately, effective treatment regimens have not yet been developed for many endometrial diseases, since the pathogenesis of endometrial dysfunctions is often insufficiently studied. In addition, the correction of such diseases often requires a personalized approach. This paper reviews the existing 3D in vitro models of the human endometrium, as well as the prospects for their application for the development of personalized treatment methods in the field of gynecology and reproductive medicine.

**Keywords:** endometrium, 3D cell cultures, cell tissue models, personalized medicine