

представления в этой области все чаще обращаются к биологии развития и рассматривают рост ткани в ответ на повреждение как сложно скоординированный процесс, который во взрослом организме идет по пути, во многом отличающемся от того, который он же проходит в период эмбриогенеза. Фокус усилий, которые несколько десятилетий назад были сконцентрированы на биологии СК как универсального инструмента для регенеративной медицины, в настоящее время переместился на клетки иммунной, нервной и кровеносной систем. Их участие в регуляции баланса регенерации и фиброобразования после повреждения в значительной степени говорит о критической роли микроокружения, без которого реализация СК их регенераторного потенциала становится невозможной. Поскольку СТ и строма являются активными участниками как эпиморфной регенерации, так и формирования рубца в зоне повреждения именно на них, вероятно, будет сосредоточено внимание исследователей. В такой концепции стромальные клетки рассматриваются как регуляторная и направляющая сила, ответственная за создание регуляторного микроокружения и вносящая существенный вклад в исход репаративной регенерации.

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СОБЛЮДЕНИЕ ЭТИЧЕСКИХ СТАНДАРТОВ

Статья не содержит исследований с использованием животных или людей в качестве объектов.

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RECEPTION OF DAMAGE AND ACTIVATION OF GROWTH OF CONNECTIVE TISSUE: CRUCIAL REGULATORY MILESTONES OF REGENERATION IN HUMANS

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Tissue damage activates programs aimed at the survival of the body and restoration of its integrity, but for a long time the molecular and cellular mechanisms of their implementation remained undeciphered. In recent years, a number of important information has been obtained about the regulation of regeneration processes, which significantly clarify a number of ideas about the regulation of the response to damage and deserve attention in terms of searching for new targets for controlling this process. This review briefly summarizes the basic regulatory mechanisms associated with the early stages of the human tissue response to injury. It also provides current data on the mechanisms of damage reception and the role of stromal cells in the formation of primary connective tissue as a structure that determines the outcome.

Keywords: regeneration, fibrosis, stem cell, mesenchymal stromal cell, stroma, regenerative medicine