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## The development of pharmacological strategy of cell therapy and prospects of the creation of target drugs for regenerative medicine

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**Background:** Pharmacological strategy of regenerative medicine based on the principle of imitating the activity of the natural regulatory systems is considered to be the most physiologic and promising approaches to solve the problems of regenerative medicine.

**Purpose:** It is necessary to assess the perspective of developing drugs for regenerative medicine on the basis of alkaloids.

**Materials & Methods:** The diterpene alkaloids: napelline, songorine, hyaconitine, mesaco-nitine, Z77 and others were studied on experimental models of skin wound, cytostatic myelo-suppression, posthypoxic encephalopathy, cerebrovascular accident. Histological, functional, cultural, hematologic and other methods were used.

**Results:** Napelline, songorine, hyaconitine showed the most expressed wound healing properties, songorine and napelline – erythro- and granulocytopoiesis-stimulating ones respectively, and Z77 –cerebroprotective one. It was found that a direct effect of these substances on intracellular signaling of progenitor cells and cells of tissue microenvironment elements were the mechanisms of their action. In this case, reserve intracellular IKK-, PKC -, PKB-, PKA- dependent directions NF- κB- and p38 MAPK- signaling, which don't participate in the realization of SC growth potential in the optimal conditions of life, were involved in the transfer of stimulating signal to progenitor cells.

**Conclusion:** These data formed the basis for the development of a new therapeutic approach in regenerative medicine and strategy for pharmacological regulation of intracellular signal transduction in regeneration-competed cells. The results being received indicate a high perspective of developing selective drugs for regenerative medicine on the basis of detected alkaloids.

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