lial-mesenchymal primordium that would provide a selective microenvironment for B cell precursor expansion, it is more likely that separate B-cell, macrophage, dendritic cell precursors colonize the mesenchyme, and some precursors migrate to the surface epithelium initiating lymphoid follicle bud formation.
The goal of this project is to characterize the developmental mechanisms of lymphoid follicle formation using a large panel of monoclonal antibodies (mAbs) specific for leukocytes (CD45), B-cells (chB6, EIVE12), macrophages (TIM4), bursal dendritic cells (CSF1R). The staining of embryonic BF by these mAbs helps to distinguish between three different lineages of hematopoietic cells. CD45+/EIVE12+ cells were first observed in the BF rudiment, many of them enter the surface epithelium to induce follicle bud formation. This will be colonized by the second cell type that belong to the CSF1R+/TIM4+ population, followed by chB6+ B cell precursors.

In conclusion, we could determine three different types of precursors which colonize the embryonic BF, indicating that there is a prebursal segregation between these blood-borne cell lineages. Using chick-duck chimeras, we demonstrate that the first cell types which enter the bursal epithelium are not the dendritic/macrophages or B cell precursors, but are a transient lymphoid bud inducer cell population whose primary role is to induce follicle bud formation.

P13.

Induced neurogenesis in rabbit mesenchymal stem and endothelial progenitor cells

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Keywords: rabbit, stem cells, neuronal induction

Mesenchymal stem cells (MSCs) are known to possess multipotent ability and can be differentiated into adipocytes, chondrocytes and osteocytes. Moreover, a neurogenic potential of MSCs has been also observed (Tirpáková et al., 2021). On the other hand, endothelial progenitor cells (EPCs) might be defined as unipotent stem cells, since they are closely similar to stem cells in terms of self-renewability, clonogenicity, and their plasticity. Besides their unipotent character, a possible trans-differentiation to neuron-like cells has been previously reported (Vašíček et al., 2021). Here, we compare the neurogenic differentiation potential of rabbit MSCs derived from bone marrow (BM-MSCs), amniotic fluid (AF-MSCs) and adipose tissue (AT-MSCs), and rabbit EPCs derived from peripheral blood (PB-EPCs) and bone marrow (BM-EPCs).
Briefly, cells from each biological sources were isolated from healthy and sexually mature rabbits of New Zealand White line. Cell lines were cultured in specific media till the passage 3 as described previously. Then, the commercial medium for the neurogenic differentiation of cells (Mesenchymal Stem Cell Neurogenic Differentiation Medium; PromoCell) was applied and cell were cultured for 3 days according to the producer's manual.
At the end of culture, evident changes in cell morphology were observed as well as the significant expression of specific neuronal markers (ENO2 and MAP2) was detected using qPCR, flow cytometry and confocal microscopy in all induced rabbit MSCs lines and also EPCs lines.
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Tirpáková, M. et al. (2021). Phenotypical Characterization and Neurogenic Differentiation of Rabbit Adipose Tissue-Derived Mesenchymal Stem Cells. Genes, 12(3), 431.

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P14.

Exceptional interactions of neurodegeneration-related beta-amyloid with rotifer-specific exogenic biopolymers *in vitro*

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Neurodegenerative diseases are predominantly initiated and intensified by the systemic enzyme resistance of toxic aggregated proteins and related pathological consequences. Application of neurodegeneration-related aggregates in microinvertebrate rotifers is a novel interdisciplinary approach in our in vivo research. The ability to utilize various types of native conglomerates and aggregates is a phylogenetically selected property of these animals. In current experiments, we applied the Euchlanis dilatata and Lecane bulla monogonant rotifer species with a special biopolymer secreting capability. We demonstrate a special phenomenon that the rotifer-specific biopolymer, namely Rotimer, can serve as the subject of in vitro research where it is able to bound specifically the human-type neurotoxic beta-amyloid 1-42 (H-Aβ). In this work was reapplied the aggregated H-Aβ and its artificially designed scrambled 1-42 (S-Aβ) version on Rotimer. Previously we proved that the rotifers are capable of using these toxic aggregates as an exclusive energetic source (as 'food'). In contrast to H-Aβ, the S-Aβ version was detected as a relevant negative control and an inactive molecule in aggregation-related experiments. The biopolymer-secretion-capacity of rotifers is protective against H-Aβ aggregates; furthermore, we found that the exogenic Rotimer exudate is a special anti- and disaggregating agent against the oligomer and fibrillar form of H-Aβ in optical imaging and fluorescent-based assays. The above mentioned species shows different reactions to the drug treatments in all type of measurements. Our results may offer new pharmaceutical perspectives on the human relevance of neurodegenerative diseases.