Influence of different growth factors on rat embryo differentiation *in vitro*

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Cultivation of rat embryos *in vitro* is the one of the experimental systems for studying developmental processes in mammals. Cultivation in chemically defined medium in organ culture enables investigation of effects of different substances on growth and differentiation of mid-gastrula embryos (1-4). In this study, effects of fibroblast growth factor (FGF), epidermal growth factor (EGF) and transferrin on growth and differentiation were tested.

Rat embryos (E 9.5) were cultivated during 14 days in chemically defined Eagle's Minimal Essential Medium (MEM) alone, in MEM with FGF, in MEM with EGF and in MEM with transferrin. After *in vitro* culture embryos were processed by routine histological methods and histologically evaluated. Embryos cultivated in medium supplemented with serum were used as a control.

After 14 days *in vitro* rat embryos give arise to various differentiated tissues: epithelia, neuroblasts, myotubes and cartilage, depending on the added substances. Addition of FGF stimulates growth of whole explants and survival of neural tissue. In medium with EGF epidermis differentiates better than in control medium. Although transferrin couldn't stimulate growth of whole embryos, it stimulates differentiation of neuroblasts (Fig. 1), columnar epithelium and cartilage.

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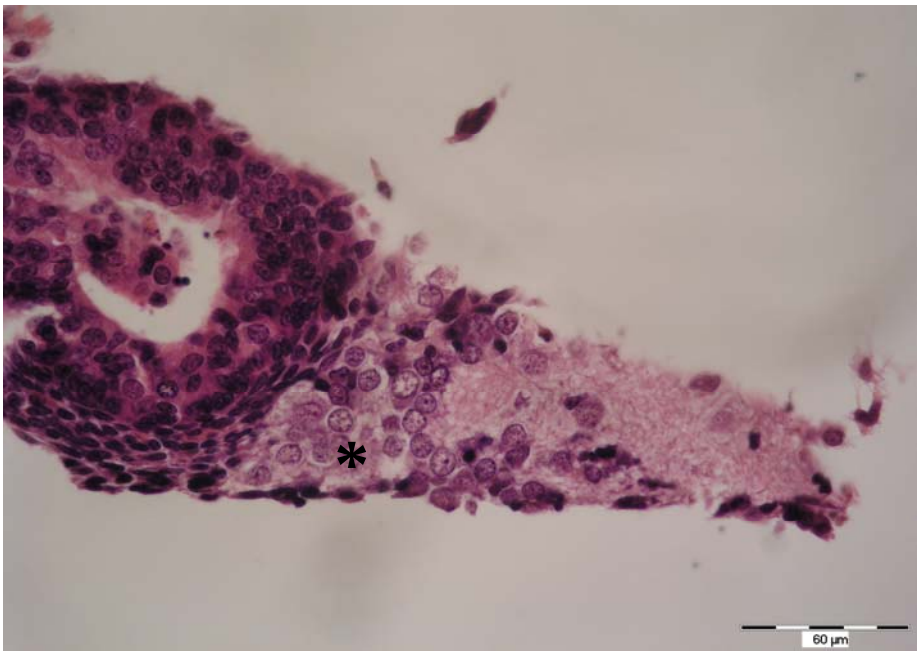

Figure 1. Neuroblasts (*) in explant cultivated for 14 days in medium with transferrin.

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