Morphological Characteristics of Primary Cultures of Neonatal Rabbit Dorsal Root Ganglia Cells

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The aim of the presented research was to compare the morphological features of neonatal rabbit SG cell cultures obtained under normal and low adhesive conditions.

The cell suspension was derived from SG by enzymatic method. Cells were seeded at a concentration of 5×10⁵ cells/ml and cultured in Petri dishes at 37°C in an atmosphere with 5% CO₂ under different conditions: 1 – on an adhesive surface in serum-free DMEM supplemented with 2% B27; 20 ng/ml bFGF; 2 – on an adhesive surface in DMEM with 10% fetal bovine serum (FBS); 3 – on a low-adhesive surface in DMEM with 10% FCS.

In the first case the formation of floating cytospheres has been found already to day 4. Later their sizes were slightly increased. When transferring these cytospheres into the medium with 10% FBS a monolayer was formed of fibroblast-like cells, thereafter neuroblast-like cells and the adhered colonies consisting of roundish cells appeared on the monolayer. In the second case a monolayer of fibroblast-like cells was formed to day 3 with the aggregates of roundish cells forming the long processes. In the third case, both floating and adherent cytospheres were formed. Following the transfer of the floating cytospheres to the medium with 10% FBS they adhered and formed the monolayer of fibroblast-like cells with two types of cells on it: small spindle-like one and epithelioid cells with a well-defined nucleus and nucleoli. The neuroblast-like cells migrated from the adhered cytospheres.

The discovered differences of cell morphotypes formed in the culture of SG cells suggest that the medium composition and the surface adherability are the factors determining the cell populations in the resulting primary cultures.