Isolation and primary culture of chick embryonic neural crest cells

Objective and Aim

In vitro access to the neural crest cell(NCS) can make a model for studing migration and differentiation of these cells.It also provides an opportunity to better understanding of the cell-cell interaction,drug and morphogen effects on them.With respecting to accessibility and easily isolation of chick embryonic tissues and also their appropriation for studing the developmental processes,we aimed at isolating and characterizing the neural crest cells.

Methods

The hen' s fertilized eggs were incubated for about 40h at 38° c and 55-60% humidity until the embryos reached to stages 12-14 according to Hamburger-hamilton developmental stage table.Then the embryos were removed from egg' s yolk and the neural was isolated and cultured for 24 h in tissue culture dish to release neural crest cell.Then after,the neural tube was removed and allowed to Ncc to expand for further 5 days.Finally the cells were collected and subjected to PCR to study their gene expression profile.

Result

The neural tube released Ncc and these cells proliferated in culture condition.They also expressed markers including slug,sox9,sox10 by RT-PCR method.

Conclusion

The neural tube can release NCC in culture condition and these cells can proliferated in presence an appropriate medium.

Key Word*:NCC,Chick embryo,slug,neural tube*