

عنوان مقاله:

The Role of Glycoconjugates in Development of Floor Plate During Early Morphogenesis in Mouse Embryo

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خلاصه مقاله:

The floor plate is a small group of cells located at the ventral midline of neural tube. During early neurogenesis the floor plate plays critical role (s) in differentiation of ventral portion of neural tube. The purpose of this study was to determine the distribution of glycoconjugates in floor plate as well as underlying mesoderm (notochord) and their inductive activities in mouse embryos. Formaline fixed sections embedded in paraffin from ۱۰ to ۱۴ days old Balb/C mouse embryos were processed for histochemical studies by using five different horseradish peroxidase (HRP) labelled lectins including; Glycin max (SBA) specific for Gal and GalNac terminal sugar, Vicia Villosa (VVA) and Arachis hypogaea (peanut) for GalNac, Ulex europeus (UEA-۱) and Lotus tetragonolobus (LTA) for α -L-fucose. Our results showed that SBA sensitive glycoconjugates react and change in floor plate, notochordal cells and surrounding extracellular matrix and these changes were significant ($P < 0.05$). Extensive differences between GalNac sensitive lectins were observed during motoneuron differentiation. There was no reaction with other tested GalNac lectins. Furthermore we observed significant changes ($P < 0.05$) in fucose glycoconjugates during notochordal development. The results suggest that the timing and distribution of SBA sensitive glycoconjugates may play a key role (s) in interactions and subsequent formation of adjacent tissues such as floor plate and notochord during critical period of morphogenesis. Our finding also showed that glycoconjugates with fucose terminal sugar may play a role (s) in notochordal development but probably have no function on floor plate development.

کلمات کلیدی:

Glycoconjugate, Notochord, Floor plate, Interaction, Embriogenesis

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