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Objectives:

Isolation and characterization of the lectins from human placenta

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Proteins with lectinic activity have been isolated and identified from human placenta. Protein fractions isolated from both amnion and chorion are characterized by lectinic activity (AmS_1, AmS_2 ,Chr S_1,$ChoS_2$) .

Specific and Total activity in amnion tissue is 3 times more intense then in chorion. Carbohidrate inhibition intensity of hemagglutination activity of amnion protein fraction AmS_2 decreases respectively as D-Gal, GalNac, Lac, D-Glc, GlcNAc, D-Man. Galactoze-specific leqtin has been purified on agarose affinal sorbent with HPLC method on Gel-filtrated Ultrapac TSK G3000 SW column.

Fe^{2+}, Zn^{2+}, Mn^{2+}, Ba^{2+} and Pb^{2+} from bivalent ions do not affect the protein activity. Ca^{2+} and Mg^{2+} influence the activity of Amn S_2-Gal protein.

The maximum activity of lectins was manifested at $+37^0$C, $+40^0$C and $+45^0$C and leqtinal activity was absent at $+55^0$C.

Human placenta Gal-specific lectin has ability to bind steroid hormone specific IgG antibodies (by DELFIA method). Accordingly, suggestion was made that Gal-specific lectin has similar activities as steroid hormones.

It has been determined that Gal-apecific lectins of human placenta chorion and amnion do not reveal specificity to any group of human blood among those of four ABO system groups, and do not cause an agglutination of the erythrocytes. These lectins are unable to provoke or change proliferation of T-lymphocytes.

Summary:

Obtained results give us the possibility to continue current research of other pathologies as well.

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2. Kobeshavidze M., Bolotashvili T.,Mgebrishvili N. Aleksidze N. Isolation and Characterization of Hydrocarbonate-bouding proteins from Amnion-Chorional complex of Human Placenta. *Proceedings of the Georgian Academy of Sciences (Biological series A).* 2006, Vol. 32, №3, pp. 517-521.

3. Kobeshavidze M., Bolotashvili T., Aleksidze N. Human Placenta Amnion Galactose-Specific Lectins and their Possible Hormone-Like Action. *Bul. Georg. Acad. Sci.* 2006, Vol.174, No.1, pp.146- 148.