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"Induction of Thymic HLA-DR signaling with Alpha-smooth muscle Actin expression during the second and third trimesters of gestation "

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Abstract:

Less than 5% of prenatal thymoctes express HLA-DR before week 12 of gestation. However, the number of HLA-DR-positive cells increases during the late second and third trimesters of development. To determine the role of alpha-smooth muscle actin in fetal thymic HLA-DR signaling in different stages of development we examined and compared the immunohistochemical expression of alpha-smooth muscle actin in the myoid cells of the thymic medulla stroma in the 2 nd, and 3rd trimesters of gestation respectively, over the equivalent expression of the protein in the 1 st trimester, in relation with the appearance of HLA-DR-positive thymocytes. Our results demonstrated a quantitative difference in the second and third trimesters of development concerning the expression of alpha-smooth muscle actin in the stromal myoid cells of the thymic medulla over the equivalent expression of the protein in the first ($P<0.0001$, t-test). Similar changes in the above period wee found concerning the expression of HLA-DR over the first ($P<0.0001$, test), suggesting a direct involvement of alpha-smooth muscel acting in the sustainence of HLA-DR reactivity. Our data provide evidence that a contractile microfilament alpha-smooth muscle actin plays a pivotal role in HLA-DR expression, through interaction between medullary stromal cells and thymoctes.

Keywords:

Medullary thymocytes ، HLA-DR signaling ، Alpha-smooth muscle actin ، Myoid cells ، 2nd and 3rd trimesters of gestation

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