

NMR / MRI STUDY OF THE AGE-ASSOCIATED INVOLUTION OF THYMUS IN C57BL/6 MICE

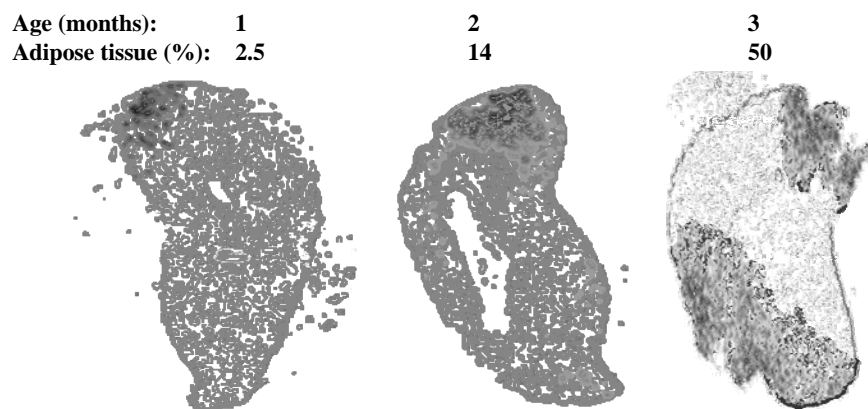
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The thymus is an immune organ where most T cells are generated. It is essential early in life; however it involutes soon after birth with loss of thymocytes and stroma cells and increase of fat tissue (**1,2**). Though the process by itself is known, the mechanisms responsible for such involution as well as the increase of fat tissue are mostly unknown.

Lipid metabolites in the intact thymus of C57BL/6 mice were studied *ex-vivo* by a combination of solution NMR and MRI microscopy techniques. The chemical characterization and quantification of the lipid signals was accomplished by 2D-TOCSY and 1D proton spectra that were related to the thymus mass. MRI chemical shift selective experiments provided a distribution of the lipids in the tissue.



The NMR / MRI longitudinal study of age-associated thymus development has clearly established an inverse correlation between the thymic involution and an increase in the percentage of thymus fat which is preferentially located in polar areas of thymus lobes.

[1] George, A. J.; Ritter, M. A., *Inmunol. Today*, **1996**, 17, 267-272.

[2] Domínguez-Gerpe, L.; Rey-Mendez, M., *Immunol Invest.*, **1998**, 27, 153-65.