Biol Reprod. 1982 Sep;27(2):312-5.

Effect of essential fatty acid deficiency on lipids of rat Sertoli and germinal cells.

Marzouki ZM, Coniglio JG.

Abstract

The effect of essential fatty acid deficiency on lipids of separated rat Sertoli and germinal cells was determined at various time intervals after the animals were placed on a fat-free diet. Alterations in the fatty acid composition typical of essential fatty acid deficiency were noted in the Sertoli cells as well as in germinal cells as early as Days 9-14 on the fat-free diet. These changes included increased concentrations of oleic acid (18:1W9)2 and the appearance of 20:3W9. In some of the rats there were also decreases in linoleic (18:2W6) and arachidonic acids ((20:4W6), but no significant differences were found between Sertoli and germinal cells. Feeding a corn oil diet to rats previously maintained on a fat-free diet for 4 weeks reversed the changes in fatty acid composition of both Sertoli and germinal cells at the times studied. Lipid changes in phospholipids closely reflected those observed in the total lipids. These early changes in Sertoli cell lipids caused by an essential fatty acid deficiency may have important consequences since the Sertoli cell lipids caused by an essential fatty acid deficiency may have important consequences since the Sertoli cells play a significant role in the spermatogenic process