

# Alpha-fetoprotein can affect the development of rat colons?

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Mammalian alpha-fetoprotein (AFP) is a single-chain glycoprotein and altered serum AFP levels have been observed concurrent with aberrant growth manifestations in some congenital defects and cancer. The gut development during late gestation and early neonatal period is accompanied by changes in the synthesis of AFP, and abundance declines significantly during gut development. In this case, AFP is considered as an important growth factor with a specific function in gastrointestinal development. The ontogeny of AFP gene expression has been examined in the fetal and adult mouse gastrointestinal tract to understand the basis of the ontogeny of AFP transcription in the gut and its regulatory elements. However, little is known about the expression pattern of AFP genes or its involvement during rat colon development.

A research team led by Dr Ying-Bin Ge from Nanjing Medical University, China addressed this question. Their study will be published on April 14, 2009 in the *World Journal of Gastroenterology*.

Colons from Sprague-Dawley rat fetuses, young and adult (8 wk old) animals were used in this study. Expression levels of AFP in colons of different development stage were detected by reverse transcriptase PCR (RT-PCR) and Western blotting. To identify the cell location of AFP in the developing rat colons, double-immunofluorescent staining was performed using antibodies to specific cell markers and AFP, respectively.

They found that the highest levels of AFP mRNA were detected in

colons of rats at embryonic day 18.5 (e18.5). Compared to e18.5 d, the AFP expression was significantly decreased during rat development [85% for e20.5, P

This study has for the first time demonstrated that AFP is localized in the mesenchyme of rat colon from the embryo to the weaning stage by immunofluorescence and presents 72-kDa isoform in the developing rat colons by Western blotting. The dynamic expression of AFP in the various developmental stages of the colon indicates that AFP might be involved in many aspects of colon development.

More information: Liu XY, Dong D, Sun P, Du J, Gu L, Ge YB. Expression and location of alpha -fetoprotein during rat colon development. World J Gastroenterol 2009; 15(14): 1738-1743  
[www.wjgnet.com/1007-9327/15/1738.asp](http://www.wjgnet.com/1007-9327/15/1738.asp)

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