



# Expression and localization of cFLIP anti-apoptotic protein in the porcine corpus luteum and corpora albicans during the estrous cycle and pregnancy

H.Z. Jin<sup>1</sup>, W.S. Shi<sup>1</sup>, Y. Tian<sup>1</sup>, Y. Liu<sup>1</sup>, Y. Jin<sup>1</sup> and N. Manabe<sup>2</sup>

<sup>1</sup>Department of Animal Science, College of Agriculture, Yanbian University, Yanji, China

<sup>2</sup>Animal Resource Science Center, University of Tokyo, Kasama, Japan

Corresponding author: Y. Jin / N. Manabe

E-mail: yijin@ybu.edu.cn / amanabe@mail.ecc.u-tokyo.ac.jp

Genet. Mol. Res. 14 (3): 8262-8272 (2015)

Received September 30, 2014

Accepted March 18, 2015

Published July 27, 2015

DOI <http://dx.doi.org/10.4238/2015.July.27.14>

**ABSTRACT.** We determined expression and localization of the anti-apoptotic cellular FLICE inhibitory protein (cFLIP) in the porcine corpora lutea (CL) and corpora albicans (CA) during estrous and pregnancy. The CL and CA were collected at different stages of estrous to determine cFLIP immunolocalization, and mRNA and protein expression. The mRNA expression of the short cFLIP isoform (cFLIP<sub>s</sub>) was higher at the early and mid CL stages, and lower by the late CL stage ( $P < 0.01$ ); mRNA expression of the long cFLIP isoform (cFLIP<sub>L</sub>) was higher at the mid CL stage, and lower at the early and late CL stages ( $P < 0.01$ ). Levels of cFLIP<sub>s</sub> and cFLIP<sub>L</sub> were steady and high during the early and mid CL stages, and had significantly decreased ( $P < 0.01$ ) by the late stage. The cFLIP protein was highly expressed in the early and mid CL stages of estrous, but weakly expressed in the late stage. Expression of cFLIP<sub>s</sub> showed no significant difference between preovulatory corpus albicans (CA1) and corpus

albicans (CA2) coexistent with the CL from the previous estrus, but cFLIP<sub>L</sub> mRNA expression was higher during CA1 than CA2. The expression of cFLIP<sub>S</sub> showed no significant difference between CA1 and CA2, but cFLIP<sub>L</sub> was not detected. The cFLIP protein was weakly expressed in the CA. Expression of cFLIP<sub>S</sub> and cFLIP<sub>L</sub> mRNA and proteins was observed in the CL, and the cFLIP protein was highly expressed during pregnancy. We propose that cFLIP<sub>S/L</sub> acts as a survival factor, and performs an anti-apoptotic function in the porcine CL.

**Key words:** Porcine; Corpus luteum; Corpus albicans; Apoptosis; cFLIP