



## Molecular cloning and tissue distribution profiles of the chicken *R-spondin1* gene

Y.Q. Han<sup>1\*</sup>, J. Geng<sup>1\*</sup>, H.T. Shi<sup>2</sup>, X.M. Zhang<sup>1</sup>, L.L. Du<sup>1</sup>, F.T. Liu<sup>1</sup>,  
M.M. Li<sup>1</sup>, X.T. Wang<sup>1</sup>, Y.Y. Wang<sup>1</sup> and G.Y. Yang<sup>1</sup>

<sup>1</sup>Key Laboratory of Animal Biochemistry and Nutrition,  
Henan Agricultural University, Ministry of Agriculture, Zhengzhou,  
Henan Province, China

<sup>2</sup>Department of Veterinary Medicine,  
Henan University of Animal Husbandry and Economy, Zhengzhou, Henan  
Province, China

\*These authors contributed equally to this study.  
Corresponding authors: Y.Y. Wang / G.Y. Yang  
E-mail: twgjl@163.com / haubiochem@163.com

Genet. Mol. Res. 14 (2): 3090-3097 (2015)  
Received May 30, 2014  
Accepted September 23, 2014  
Published April 10, 2015  
DOI <http://dx.doi.org/10.4238/2015.April.10.19>

**ABSTRACT.** *Rspo1* belongs to the *Rspo* family, which is composed of 4 members (*Rspo1-4*) that share 40 to 60% sequence homology and similar domain organizations, and regulate the WNT signaling pathway via a common mechanism. *Rspo1* plays a key role in vertebrate development and is an effective mitogenic factor of gastrointestinal epithelial cells. We report the cloning of chicken *Rspo1* and its gene expression distribution among tissues. It contained an open reading frame of 783 bp encoding a protein of 260 amino acids, and its molecular weight was predicted to be 28.80 kDa. Reverse transcription-polymerase chain reaction-based gene expression analysis indicated that chicken *Rspo1* was highly expressed in the stomach muscle tissue, but was expressed at low levels in the lung, brain, jejunum, cecum, ileum, spleen, pancreas, kidney, and glandular stomach. These results suggest that *Rspo1* plays a major role in muscular immune protection.

**Key words:** *R-spondin1*; Cloning; Tissue distribution; Chicken