

THE COMPARATIVE STUDY OF EXPRESSION AND DISTRIBUTION OF CYP2J GENE IN DIFFERENT PART OF THE DIGESTIVE SYSTEM IN BACTRIAN CAMEL

Zhipeng Jia¹, Chagan Luo¹ and Surong Hasi^{1,2}

¹College of Veterinary Medicine, Inner Mongolia Agricultural University; Key Laboratory of Clinical Diagnosis and Treatment Technology in Animal Disease, Ministry of Agriculture, Hohhot 010018, China

²Inner Mongolia Institute of Camel Research, Inner Mongolia, Badain Jaran, 750300, China

ABSTRACT

This study was conducted to investigate the expression and distribution of CYP2J gene in different parts of the digestive system in Bactrian camel and to explore the related clues between the CYP2J genes and the characteristics of salt-sensitive hypertension of Bactrian camels. Firstly, the primers were designed according to predictive sequences (XM-006176094.1) of Bactrian camel CYP2J genes and ACTB of Bactrian camel, as well as Mongolian cattle CYP2J genes (NM-001077210.1) and ACTB Mongolian cattle, then the CYP2J genes were amplified by SYBR Green Real-Time PCR using ACTB as reference gene. Secondly, the relative quantitative method of $2^{-\Delta\Delta CT}$ was used to process the data and the expression level of CYP2J gene in 7 parts of digestive system including liver, spleen, caecum, colon, jejunum, ileum and duodenum of Bactrian camel and Mongolian cattle was comparatively analysed. The result showed that CYP2J gene was highly expressed in the liver of Bactrian camel and followed by colon, duodenum, ileum, jejunum and caecum. However, in Mongolian cattle, the relative expression of CYP2J gene was highest in pancreas, followed by liver, duodenum, ileum, jejunum, colon and caecum. Furthermore, the relative expression level of CYP2J gene in Bactrian camels' liver, pancreas, colon and duodenum was significantly higher than that of in corresponding parts of the digestive system in Mongolian cattle. Therefore, the expression and distribution of CYP2J gene in different parts of digestive system of Bactrian camel was significantly different from Mongolian cattle, however, these two species are closest in degree of evolution.

Key words: Bactrian camel, CYP2J gene expression, Mongolian cattle, RT-qPCR