

# TRANSCRIPTOME ANALYSIS OF RENAL TUBULAR EPITHELIAL CELLS OF BACTRIAN CAMEL IN RESPONSE TO HYPEROSMOTIC STRESS

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## ABSTRACT

The transcriptome alterations in renal tubular cells of Bactrian camel treated with NaCl hyperosmotic treatment were investigated. Primary tubular epithelial cells, obtained from kidney of Bactrian camel were treated with medium supplemented with NaCl to a total final osmolality of 600 mOsm. The transcriptome gene expression in primary tubular epithelial cells of Bactrian camel was examined using RNA sequencing technology. 5,114 genes from NaCl supplementation (600 mOsm) and control (300 mOsm) were significantly altered. The up-regulated genes in the 600 mOsm group include solute carrier family, ATP-binding cassette family, sodium channel, potassium channel, calcium channel, Na<sup>+</sup>/K<sup>+</sup> ATPase, aquaporin, cytochrome P450 and heat shock protein. Some genes are associated with Bactrian camel's salt tolerance. This study will provide scientific basis to understand the mechanism of Bactrian camel's tolerance to high salt.

**Key words:** Bactrian camel; salt tolerance; transcriptome; tubular epithelial cells