Camel DNA shows secrets of hump-backed survivor

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Dromedary camel, Camelus dromedarius. Credit: Jjron/Wikipedia

Scientists in China said on Tuesday they had sequenced the DNA of the wild bactrian camel, a threatened species with an extraordinary ability to survive in extreme conditions.

The genetic code of Camelus bactrianus ferus—a two-humped camel that now numbers less than 900 in the wild—reveals 20,821 genes, many of them providing the metabolic tools to cope with days without food and water and a diet based on tough desert vegetation.

A team led by He Meng at Shanghai Jiao Tong University unravelled the

genome of an eight-year-old male camel called Naran from a nature reserve in Mongolia's Altai province.

Bactrian camels are descendants of even-toed ungulates which diverged from a common ancestor around 55-60 million years ago, they found.

The DNA book could shed light on the camel's "remarkable salt tolerance and unusual immune system," said the study, published in the journal Nature Communications.

Wild bactrian camels live in the deserts of northwestern China and southwestern Mongolia, where they endure fierce heat and bitter cold, aridity and sparse grazing.

In the course of a day, the camel's body may vary from 34 degrees Celsius (93.2 degrees Fahrenheit) to 41 C (105.8 F).

Camels consume eight times more salt than cattle or sheep and have twice the blood glucose levels of other ruminants, yet do not develop diabetes or hypertension.

They also make unique disease-fighting proteins called heavy-chain antibodies, which interest pharmaceutical engineers.

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