THE COMPLETE MITOCHONDRIAL GENOME OF THE CAVITY-NESTING HONEYBEE, *APIS CERANA ABANSIS* (INSECTA: HYMENOPTERA: APIDAE)

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Apis cerana abansis is a unique ecological type of the Asian bees, Apis cerana, distributed mainly over China's western Sichuan plateau. We used Illumina sequencing to obtain the complete mitochondrial genome of A. c. abansis and determined the phylogenetic relationships between A. c. abansis and other Apis cerana ecotypes. The mitogenome of A. c. abansis contains 15,694 bps and includes 13 protein-coding genes, 22 tRNA genes, 2 rRNA genes and 1 A+T-rich control region. All protein-coding genes are initiated by ATT or ATG codons and terminated by the typical stop codons, TAA or TAG, but the start codon of the ATP8 gene (one of the 13 protein-coding genes) is ATC. The ML phylogenetic tree based on the 13 protein-coding genes showed that A. c. abansis formed a sister group with the Yun-Gui Plateau Chinese bee and the Central China Chinese bee. This study provides a scientific basis for the protection and breeding of A. c. abansis.

Key words: *Apis cerana abansis; complete mitochondrial genome; Illumina sequencing; Phylogenetic relationships.*

ПОВНИЙ МІТОХОНДРІАЛЬНИЙ ГЕНОМ БДЖОЛИ МЕДОНОСНОЇ, *APIS CERANA ABANSIS* (INSECTA: HYMENOPTERA: APIDAE), ЩО ЖИВЕ В ДУПЛАХ

Apis cerana abansis – це унікальний екологічний вид східних бджіл, *Apis cerana*, які в основному поширені в західній частині Сичуанської западини Китаю. Ми використали метод секвенування Illumina для отримання повного мітохондріального геному *A. c. abansis* і встановили філогенетичні відносини між *A. c. abansis* та іншими екотипами *Apis cerana*. Мітогеном *A. c. abansis* містить 15 694 п.н. і охоплює 13 протеїн-кодуючих генів, 22 тРНК генів, 2 рРНК генів і 1 контрольну ділянку, багату на A+T. Всі протеїн-кодуючі гени ініційовані ATT або ATG кодонами і терміновані типовими стоп-кодонами, TAA або TAG, але стартовий кодон гену *ATP8* (одного з 13 протеїн-кодуючих генів) – це ATC. Філогенетичне дерево ML на основі 13 протеїн-кодуючих генів показало, що *A. c. abansis* сформували сестринську групу з китайськими бджолами Юньнань-Гуйчжоуського плато і китайськими бджолами Центрального Китаю. Це дослідження надає наукове обґрунтування для захисту та розведення *A. c. abansis*.

Ключові слова: *Apis cerana abansis*; повний мітохондріальний геном; секвенування Illumina; філогенетичні відносини.

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