

Keralam's Malabari Goat's Genetic Legacy

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Why in News?

Researchers from Kerala Veterinary and Animal Sciences University (KVASU) have published the first complete mitochondrial genome of the Malabari goat in *Mammalian Genome*.

Key Features of the Malabari Goat

- **Habitat** - Native to Northern/South Malabari region of Kerala (found across Kannur, Kozhikode, Wayanad, Palakkad, Thrissur, and Malappuram).
- **Physical Appearance**
 - **Size**- Medium frame; adult females weigh about 30 kg, while males reach around 40 to 41 kg.
 - **Coat Color** -Highly variable, commonly pure white, black, brown, or mixed piebald patterns.
 - **Horns & Ears** - Both sexes feature small, slightly twisted horns that point outward and upward; ears are medium-sized and droop down.
 - **Hair** - Usually short coat, though some individuals carry longer hair or small beards.



- **Milk Yield**- Produces roughly 0.5 to 1.5 liters of milk per day under typical management.
- Highly valued for both milk and meat production, as well as high prolificacy (frequent twin/triplet births).
- **Climate Resilience**- Demonstrates exceptional evolutionary adaptation to hot and humid tropical coastal stressors.

Key Findings

- **Mitochondrial Haplogroup B1** - Analysis places the Malabari goat in haplogroup B1, a rare maternal lineage present in only ~3% of domestic goats globally.
- Most domestic goat breeds in India predominantly belong to haplogroup A.

- **Shared Maritime Ancestry**

- Shows strong maternal genetic affinity with Omani goats, Surti goats of Gujarat, and Iraqi Meriz goats.
- Traces ultimate maternal ancestry back to the wild Bezoar goats (*Capra aegagrus*) of present-day Iran and Iraq.
- Confirms historical accounts that sea merchants transported live animals along the Indian Ocean Spice Route, resulting in genetic admixture between Arabian, Mesopotamian, Surti, and native feral caprine populations.

- **Novel Genomic Mutation** - The study identified a novel heteroplasmic substitution in the **MT-TL2 gene**, marking the first reported mitochondrial tRNA mutation in goats.

Significance for Animal Genetics

- **Bio-Cultural Evidence**- Provides tangible genetic proof of historical trans-oceanic trade networks beyond commodities (spices, textiles) to livestock exchange.
- **Conservation** - Mitogenome mapping aids in developing targeted selective breeding programs to preserve the breed's unique climatic resilience and disease-resistance traits without diluting its rare genetic heritage.

Reference

[The Hindu | Keralam's Malabari goat's genetic legacy](#)

