What Forces Drive Evolution?

Traditional 4 Mechanisms

1. MUTATIONS
   Random errors in DNA replication can lead to the creation of new genes or variations in existing ones, contributing to genetic diversity.

2. GENE FLOW
   The exchange of genes between populations through migration, which increases genetic diversity and can lead to new adaptations.

3. GENETIC DRIFT
   Random changes in allele frequencies over time, which can happen even in small populations and lead to the fixation or loss of certain genes.

4. NATURAL SELECTION
   The process by which traits that improve survival or reproductive success become more common over generations, driving evolution.

5. GENE EDITING AND ARTIFICIAL SELECTION
   The use of genetic engineering to alter the genetic makeup of organisms, and the intentional selection of desired traits in domesticated species.

Why Should You Care??

Understanding evolution helps us appreciate the diversity of life on Earth and the mechanisms that have shaped it. It also guides our efforts to conserve and manage species, making informed decisions about conservation strategies and interventions.

CRISPR-CAS9 GENE EDITING

CRISPR-CAS9 is a revolutionary technology that enables precise editing of the genome, allowing scientists to delete, add, or activate specific genes. This tool has the potential to revolutionize medicine, agriculture, and beyond.

SUPERBIRDS

Superbats are a fascinating example of evolution in action, as their unique echolocation and flight capabilities have allowed them to thrive in environments where other birds cannot.

CHANGING DEFINITIONS

The field of evolution continues to evolve, with new technologies and insights helping to redefine our understanding of adaptation, selection, and the forces that drive change.

SOURCE:

The information presented is based on scientific research and popular science articles. Further reading and exploration of peer-reviewed literature can provide a deeper understanding of the mechanisms of evolution.