DNA Barcoding: The Ultimate Key to Biodiversity Identification

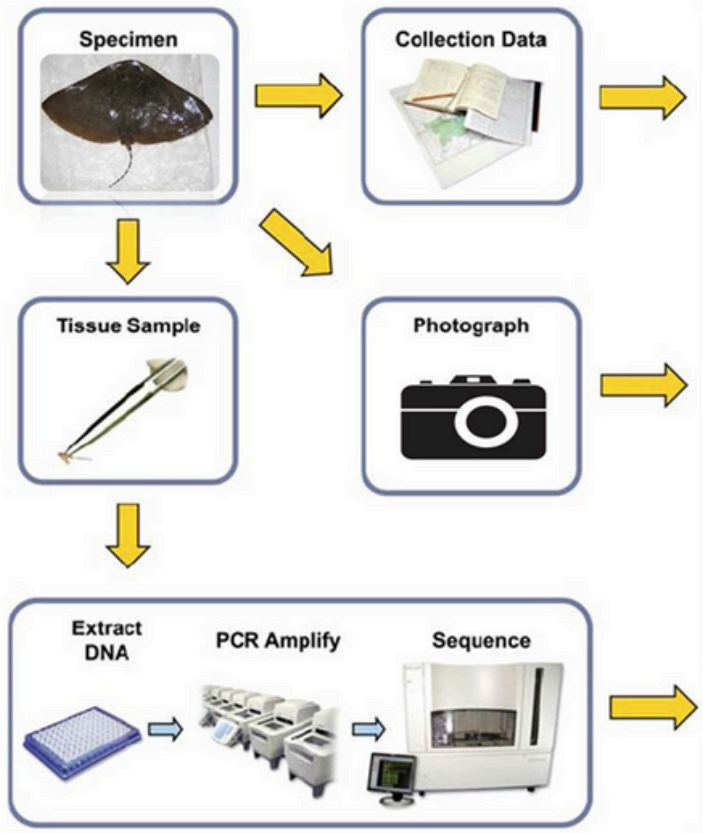
DNA barcoding is a cutting-edge tool that uses a short, standardized region of an organism's. DNA to identify species—much like a supermarket barcode identifies products. By analyzing a specific gene region (e.g., CO1 for animals), scientists can quickly and accurately determine species, even for tiny, damaged, or morphologically similar specimens. This revolutionary technique is transforming fields like biodiversity research, conservation, food safety, and forensics, helping us better understand and protect the incredible diversity of life
on Earth.

Applications of DNA Barcoding

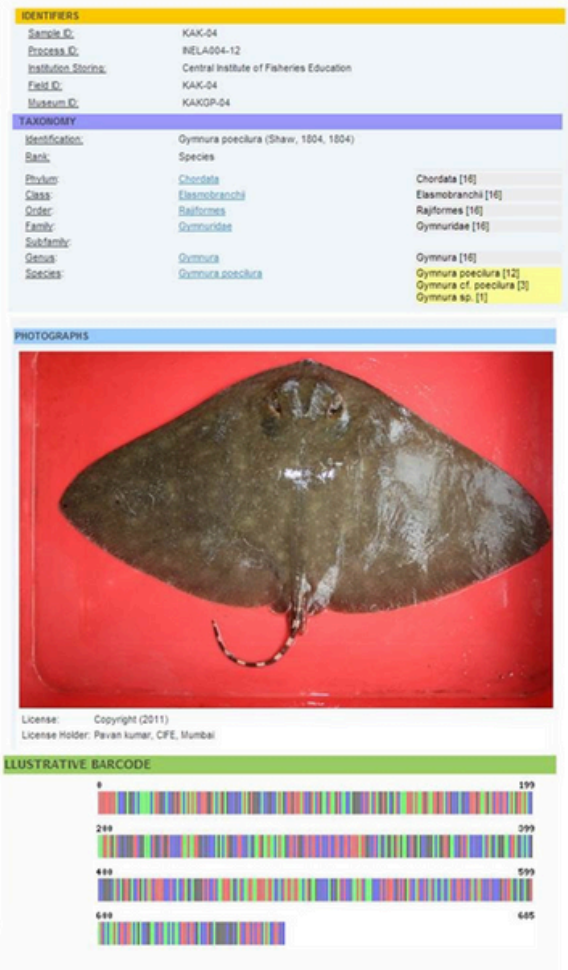
- Biodiversity Studies:
  - Accurately identifying unknown species by analyzing genetic sequences.
  - Facilitating the discovery of new species, contributing to taxonomic classification.

Detecting illegal wildlife trade by verifying species identity through genetic markers.

DNA Barcoding pipeline



Web accessible specimen and Barcode data



Detecting illegal wildlife trade.

Agriculture and Food Safety:

o Identifying pests and invasive species.

o Detecting food fraud (e.g., mislabeled seafood).

Forensics:

o Identifying species from trace evidence (e.g., feathers, fur, or scales).

Public Health:

o Identifying disease vectors (e.g., mosquitoes, ticks).

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