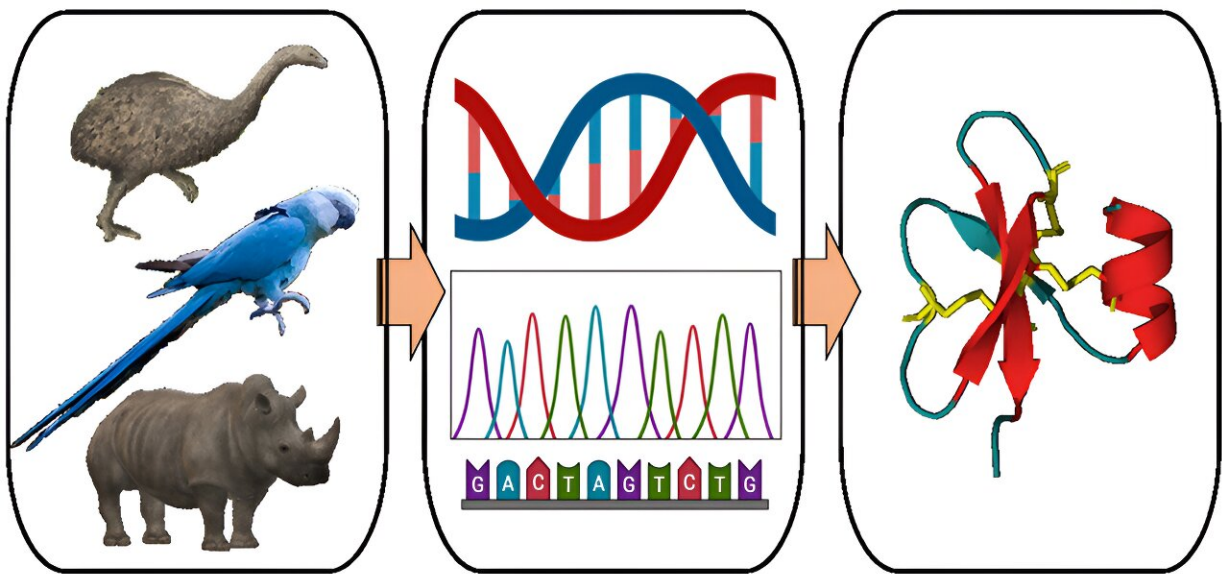


Researchers uncover new infection-fighting molecules through 'molecular de-extinction'

September 11 2024

Molecular de-extinction



Extinct or
Critically
Endangered
species

DNA
database
from
extinct
genomes

Novel
structures
of ancient
 β -defensins

Graphical abstract. Credit: *Cell Reports Physical Science* (2024). DOI: 10.1016/j.xcrp.2024.102193

A new study led by Cesar de la Fuente, Ph.D., Presidential Assistant Professor of Psychiatry, Microbiology, Chemistry, Chemical and Biomolecular Engineering, and Bioengineering at the University of Pennsylvania, has uncovered sequences for infection-fighting molecules in the genomic data of extinct species.

This most recent study in the emerging field of "[molecular de-extinction](#)," pioneered by Prof. de la Fuente, offers the potential to develop new antimicrobial treatments in the fight against rising [antibiotic resistance](#).

The study, published in [Cell Reports Physical Science](#), analyzed genomic data from the extinct moa, a flightless bird from New Zealand, alongside genomes from two near-extinct species: a macaw and the Western black rhino.

Through advanced computational techniques, the research team identified ancient molecules called β -defensins, which play a critical role in host immunity. These molecules, preserved through [evolutionary history](#), may lead to the creation of new antibacterial, antifungal, and antiviral therapies.

More information: Adryan F.L. Ferreira et al, Defensins identified through molecular de-extinction, *Cell Reports Physical Science* (2024). DOI: [10.1016/j.xcrp.2024.102193](#)

Provided by Perelman School of Medicine at the University of

Pennsylvania

Citation: Researchers uncover new infection-fighting molecules through 'molecular de-extinction' (2024, September 11) retrieved 11 September 2024 from <https://phys.org/news/2024-09-uncover-infection-molecules-molecular-de.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.