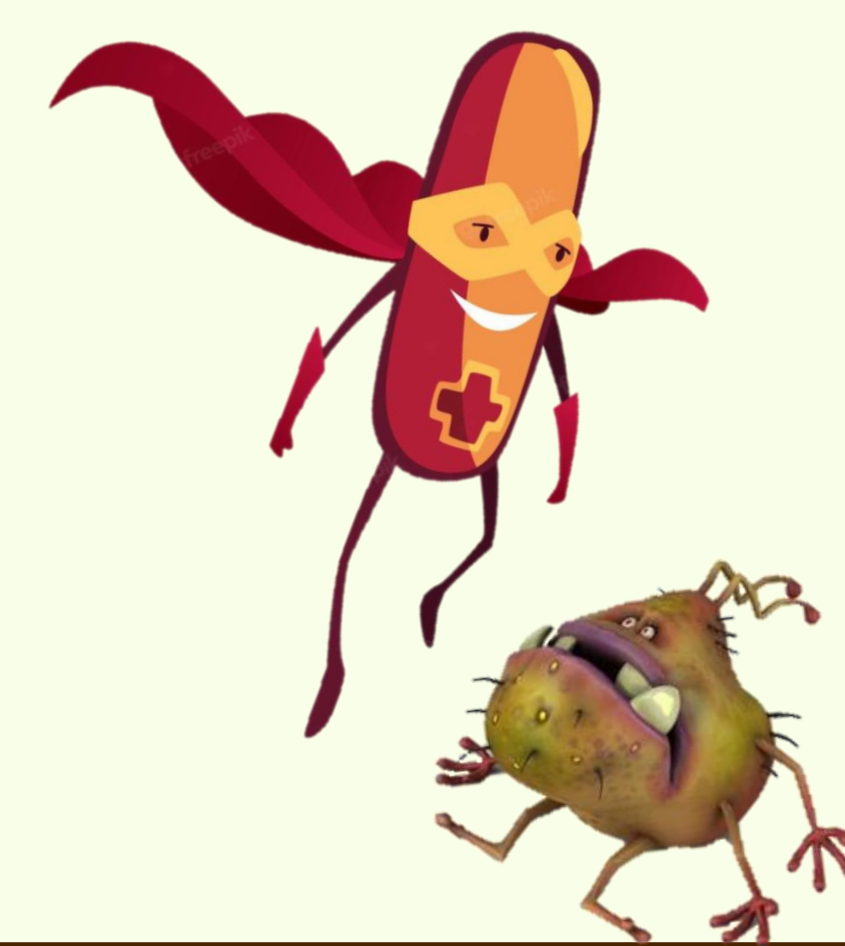


MICRO-DETECTIVES:

Forensic Profiling With Microbes



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INTRODUCTION

- The human microbiome refers to all genetic material from all microorganisms existing in/on the human body.
- The type and number of microbes found in an individual has been determined to be unique to a person because this composition is determined by individual habits such as diet, location, lifestyle etc.
- This presents potential in forensics for identifying a person through profiling – that is prediction of habits/lifestyle using human related microbes.

Methodology

- 100 Nigerian participants recruited - 50 living in Nigeria to establish microbes associated with participants country of origin; and 50 recently migrated.
- Samples collected by swabbing oral mucosa (mucous membrane lining or “skin” of the cheeks, inside the mouth).
- Collected samples preserved with Guanidine-thiocyanate based medium to stabilize DNA of microbes until analysis.

Objectives

The aims of this study therefore are to:

- Understand the composition of oral microbes.
- Determine key microbes that can act as biological markers for a habit/trait/lifestyle.
- Investigate how these microbes might change due to migration.

Analysis & Open Research

- Sample analysis employs 16S rRNA sequencing of microbial DNA after extraction. This allows the identification, classification and comparison of bacteria from complex microbiomes or environments that would otherwise be difficult or impossible to study.
- Raw sequencing data files, as well as sample metadata will be uploaded to public databases such as NCBI (National Center for Biotechnology Information) to support open access data and encourage reproducibility.

Implications

- In summary, this project will contribute knowledge to the field of microbial forensics and how it's potential be implemented for human profiling.
 - It will also explore under-studied populations/demographics to determine the applicability of new methods and observations.

REFERENCES

