

# PRELIMINARY STUDY: ANTIMICROBIAL RESISTANCE GENES IN BACTERIOPHAGES FROM A NATURALLY PRESERVED WETLAND IN THE MEXICAN PLATEAU

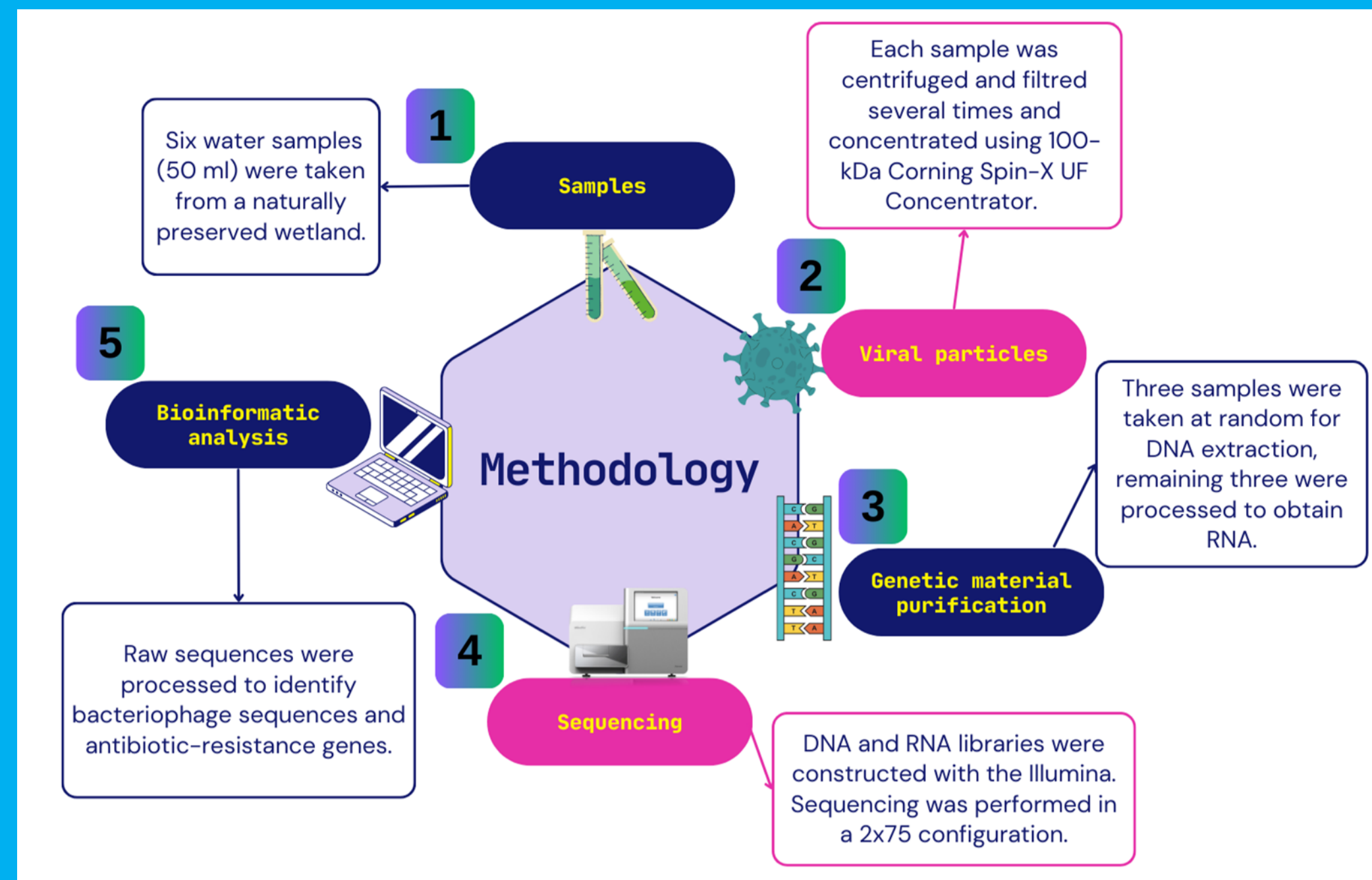
## Introduction

Antimicrobial resistance is a worldwide concern for the medical, human or veterinary sector.

In 2021 the World Health Organization (WHO) estimated that more than 700,000 deaths annually are attributed to antimicrobial resistant bacteria.

Bacteriophage fraction can comprise more than 60% of the viral total on freshwater, being an important biological entity in the acquisition of antimicrobial re-

## Methodology



The partial detection of antimicrobial resistance genes in a naturally preserved wetland could suggest the presence of fluoroquinolone-resistant bacteria.



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ID	# genes	Drug	Mechanism	Identity	E value
1	10	Fluoroquinolone	antibiotic target protection	42-56%	<9.54 e <sup>-06</sup>
2	12	Fluoroquinolone	antibiotic target protection	44-48%	<9.8 e <sup>-06</sup>
3	4	Fluoroquinolone	antibiotic target protection	50-54%	<9.01e <sup>-06</sup>

Table 1. Number of antimicrobial resistance genes detected in DNA samples from polyphyletic bacteriophages.

Further studies are needed to test for the presence of these resistant bacteria and how they reached the wetland to determine the impact on public, animal and environmental health.