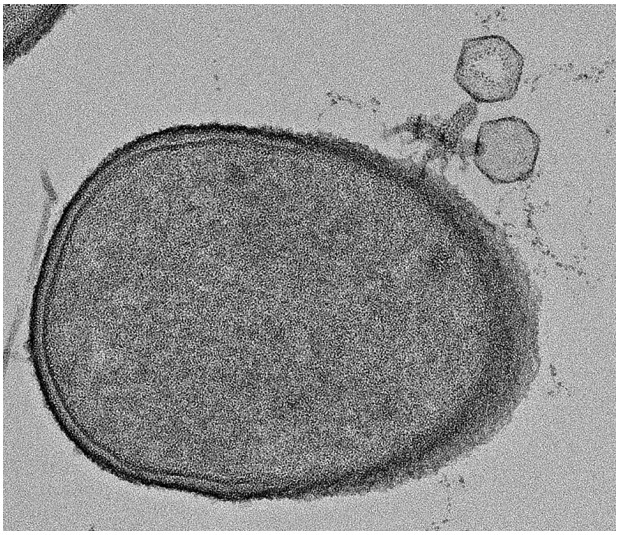
# New Antiviral Drugs from Bacterial Natural Products

Therapeutics

Reference Number: **1934** \ Principal Investigator: **Prof. Rotem Sorek** \ Patent Status: **US-2024-0228521-A1**

There is a growing need for effective antiviral therapies, particularly for viruses that currently lack approved treatments. This technology offers a new class of chemically synthesized nucleotide analogs inspired by a natural bacterial defense mechanism, in which enzymes modify standard nucleotides. These analogs, developed as prodrugs, have demonstrated antiviral activity in multiple in vitro models, exhibit high plasma stability, and show no toxicity in animal studies.



Electron micrograph of phages infecting bacteria

## APPLICATIONS

- Treatment of viral infections with no currently approved antiviral therapies
- Development of broad-spectrum antiviral drugs

## DEVELOPMENT STAGE

Lead compounds synthesized and tested. Antiviral activity validated *in vitro* against multiple viruses. Plasma stability confirmed in human and rat models. *In vivo* safety demonstrated in rats (IV and oral routes).

## DIFFERENTIATION

Nucleotide chain terminator: a validated mechanism for approved antiviral drugs

Organic synthesis of novel non-natural nucleotide analogs and their prodrug versions (IP-protected)

Potential for improved pharmacokinetics and low toxicity

## REFERENCES


- *Bernheim A et al. s. Nature. 2021*