BIRAD
RESEARCH & DEVELOPMENT

# Prevention and Treatment of Viral Infections with **Nanoparticles Capped with Functional Groups**

## The Problem

Viral infections continuously take place and pose major public health treats; yet, their prevention and treatment modalities are limited while emerging resistant viruses call for the development of alternative treatments.

## The Solution

We developed a novel approach for the prevention and treatment of infections caused by viruses which attach cells via heparan sulfate binding, such as the herpes simplex virus type 1 (HSV-1), HSV-2 and human immunodeficiency virus (HIV).

## The Commercial Benefit

Our cutting-edge antiviral solution:

- is simple and cost-effective
- can be included in gel, cream, or liquid and used for topical treatment and prevention of viral infections.
- can coat different surfaces which can capture the viruses and avoid their spread.

## Market Potential

The global pollution masks market which is projected to cross USD 4 billion by 2022. Another relevant market for our antiviral solution is the global sexual lubricant market is expected to cross $1.4 billion, growing impressively at a CAGR of 6.7% during 2016–2022.

## Target Markets/Industries

- global tropical treatment market
- global pollution masks market
- global sexual lubricant market

## Intellectual Property

Granted Patent US 8,758,777

## Team: Primary Inventor

**Prof. Ronit Sarid**

- Prof. Ronit Sarid, of the Mina and Everard Goodman Faculty of Life Sciences, is an expert in virology whose research work is primarily focused on herpesviruses, in particular the Kaposi's sarcoma-associated herpesvirus ( KSHV)
- Prof. Sarid's primary areas of interest are viruses, host-virus interactions, cancer-related human viruses and Kaposi's sarcoma.

**Prof. Aharon Gedanken**

- Prof. (Emeritus) Aharon Gedanken, of the Department of Chemistry, is a member of the Nano Materials Center at the Institute of Nanotechnology and Advanced Materials (BINA),
- Prof. Gedanken is a recipient of the President of Israel Achievement Award for coordination of a European Funded Research.
  Gedanken is a pioneer of sonochemistry – a discipline in which chemical reactions are accelerated through the application of ultrasonic sound waves.

## Future Research

Optimization of nanoparticles and methods of application and assessment of the efficacy of the nanoparticles using different types of viruses.

## The Opportunity

We warmly invite companies and investors to license our patent through a licensing agreement with sponsored research.

## Keywords

- Nanoparticles
- Antiviral
- Microbicides
- Viruses
- Herpes simplex virus type 1 (HSV-1)
- Herpes simplex virus type 2 (HSV-2)
- Human immunodeficiency virus (HIV)