

6-2017-4448 | New Formulations for Oral, Nasal, Transdermal and Rectal Delivery of Cannabinoids  
[Touitou Elka](#), HUJI, School of Medicine - IMRIC, School of Pharmacy- Institute for Drug Research

<b>Categories</b>	<b>Cannabinoid Administration, Formulation, Drug Delivery, Novel Carriers, Transdermal Formulation, Nasal Formulation, Oral formulation</b>
<b>Development Stage</b>	<b>In-vivo proof of concept</b>
<b>Patent Status</b>	<b>Several patent applications - new technologies for various routes of administration</b>
<b>Market</b>	<b>Improved effect of Cannabinoids which are administrated via different routes is a real need and has increasing demand</b>

## Background

- There is a need for cannabinoids based products for treatment via various ways of administration (Nasal, Oral, Transdermal and Rectal), that are efficient and safe and show prolonged effective action.
- Currently, cannabinoids are administrated in capsules or sublingual spray and the drug has only short action (a peak effect up to 4 hours with a median T max up to 2.5 hours).
- Cannabinoids are very lipophilic molecules. Hence, in order to bring them to a molecular state (dissolved)-- solvents like vegetable oils, glycols (propylene glycol) and ethanol are used.
- We have designed innovative cannabinoid formulations along the main routes of drug administration (dermal, nasal, oral and rectal) for treatment of various ailments: pain, neurological diseases, sleep, appetite, mood, anxiety, rheumatic arthritis, inflammatory diseases, and stress.

## Highlights

- Our new platform technologies for cannabinoids do not require oils or chemical solvents.
- Eco-friendly preparation process with no need of high heating or use of solvents.
- The inactive ingredients used in this new dosage form are approved for pharmaceutical use.
- The technology is adequate for various cannabinoids: CBD, THC, iso-THC, CBG, CBC, CBN, CBE, CBL, CBT and their mixtures or for plant extracts.
- In-vivo proof of concept

## Our Innovation

Innovative formulations and compositions for design and development of new cannabinoid products for treatment of a wide range of diseases.

## Key Features

- Innovative transdermal, nasal, oral and rectal technologies for the development of new efficient products of cannabinoids (CBD, THC, others) for treatment of various diseases
- IP
- Excipients approved for pharmaceutical use
- Eco-friendly processes
- Experiments in a pain using an animal model that administered cannabinoids in the new oral formulation show a very efficient and prolonged antinociceptive effect.

## Development Milestones

Seeking investment in new company or industrial collaboration for product development and clinical studies

## Patent Status

Published US 2020/0197357 A1;

Contact for more information:



Keren-Or Amar  
VP, Business Development, Healthcare

**Yisum Research Development Company of the Hebrew University of Jerusalem**

Hi-Tech Park, Edmond J. Safra Campus, Givat-Ram, Jerusalem

P.O. Box 39135, Jerusalem 91390 Israel

Telephone: 972-2-658-6688, Fax: 972-2-658-6689