

6-2015-4247 | New Oral Delivery Carrier for Prolonged Action of Cannabinoids  
[Touitou Elka](#), HUJI, School of Medicine - IMRIC, School of Pharmacy- Institute for Drug Research

<b>Categories</b>	<b>Cannabinoids, Drug Delivery, Novel Carrier, Oral Formulation</b>
<b>Development Stage</b>	<b>In-vivo proof of concept</b>
<b>Patent Status</b>	<b>PCT patent application filed</b>
<b>Market</b>	<b>Improved delivery of cannabinoids is a real need and has an increasing demand</b>

## Background

- There is a need for oral administration for products containing cannabinoids that show a prolonged effective action. Currently, cannabinoids are administrated in capsules or sublingual spray, the drug having 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 a new dosage form for oral administration of cannabinoids that can be used for treatment of various ailments including pain, neurological diseases, sleep, loss of appetite, mood, anxiety, rheumatic arthritis, inflammatory diseases, and stress.

## Highlights

- Our new oral delivery platform for cannabinoids does not require oils or chemical solvents.
- Eco-friendly preparation process, no need for 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: CBG, CBC, CBD, THC, iso-THC, CBN, CBE, CBL, CBT and their mixtures or for plant extracts.
- In-vivo proof of concept

## Our Innovation

We evaluated the prolonged anti-nociceptive effect of cannabinoids administered orally from the new formulation in animal pain using a mice model as compared to untreated animals. The results of this experiment indicate that cannabinoid administration to mice from the new oral formulation lead to a rapid and prolonged significant analgesic effect starting from the first hour and reaching high MPE (Maximum Possible Effect) values: 77% at the first hour and maintained at 60% up to 10 hours and 49.4% at 12 hours

Figure 1: MPE % values in mice treated orally with cannabinoid from the new oral formulation 1, 3, 6, 8, 10 and 12 hours prior to pain induction.

## Key Features

- Oral Delivery of CBD
- Excipients approved for pharmaceutical use
- Eco-friendly process
- Anti-nociceptive (very efficient and prolonged pain management) effect in animal model of **cannabinoid** in the new oral formulation

## Development Milestones

Seeking investment in new company or industrial collaboration for the development,

## Patent Status

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