

MANNA
MOLECULAR SCIENCE, LLC

Transdermal Delivery System

Presently, we have united our vast resources – clinicians, product experts, drug formulation and analytical chemists, clinical product trainers, marketing professionals, testing labs, manufacturers, and industry consultants – around the inception and commercialization of our proprietary transdermal delivery system (TDDS) in the form of a variable-dose THC and other balancing cannabinoids patch that can be loaded with extracted cannabis oil by licensed dispensaries and producers, allowing for broad and unencumbered national distribution and sales. We believe in TDDS as a delivery platform for cannabis, owing to its self-contained form, its stable systemic delivery, and its discreet dosing.

Manna's patch is broadly appealing and applicable. As a product, it fits elegantly into trends in cannabis-user preferences: quantified, efficacious low dose and long delivery forms that do not interfere with contemporary lifestyles or identify users with cannabis use in general. Our patients can benefit from the medicinal qualities of the plant but also want to be high-functioning adults. We offer them safe entrance into responsible cannabis use. We also offer a long-acting supplementary form to achieve a therapeutic baseline over an extended time course. MMS's patch is advantageous for regular use as a longitudinal measure against acute flair-ups of chronic symptoms. It is advantageous for those suffering from chronic conditions that require constant palliative relief. It's de-ritualized, avoids the "peak" effect and has low abuse potential. The dose is small, quantified, extended and enters directly into circulation. It is a most efficacious form factor both from a user's and operator's standpoint.

A Steady State

TDDS will not eliminate all the psychoactive effects of THC, but it will mitigate the pulse effect as well as the low variability and bioavailability seen in oral administration. Oral administration's bell shaped "high" curve rises and drops off after 4-6 hours, whereas TDDS API stays steady in the patient's plasma for 8-12 hours, long after the effects of a THC capsule or sublingual have worn off.

Candidate Properties of TDDS: The Subjective High and Duration of Effect

The Subjective High

TDDS will not eliminate the all psychoactive effects of THC but it will, however, mitigate the pulse effect as well as the low bioavailability and variability seen in oral administration.

Duration of Effect

Oral administration's bell-shaped "high" curve rises and drops off after 4-6 hours, whereas TDDS API stays steady in the patients' plasma for 8-12 hours, long after the effects of a THC capsule or sublingual have worn off.

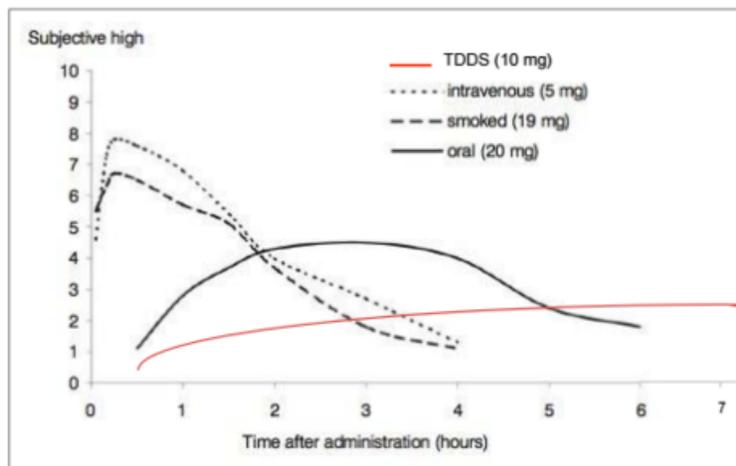


Fig. 5 Subjective Effect of TDDS versus IV, Smoked, and Oral Routes



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