

# C/NONIC

Bringing precision to medical cannabis



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## Agenda

Introduction

Market & Challenges

Products & Go-To-Market

Technology & Partnerships

Summary

Annexes

1. Evogene group

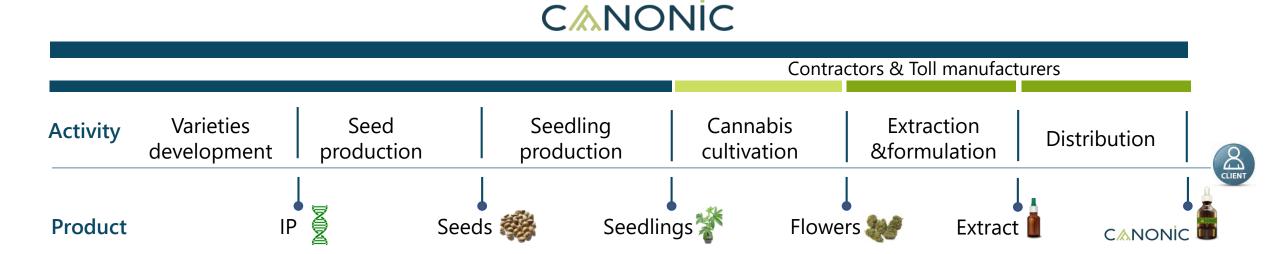


## Our Mission –

Commercialize precise & stable medical cannabis products for better therapeutic effects

### Mission execution

Canonic aims to quickly and cost effectively reach the end user, by leveraging proprietary genomic expertise and outsourcing elements of the value chain.



Variety development through advanced breeding, seed production and seedling production, will be conducted in-house, while cultivation, formulation and distribution will be conducted through partnerships.



### Canonic's team

### Management



Dr. Arnon Heyman **CEO** 

Former VP and GM Ag seeds division Evogene, CTO BondX technologies



Ofer Haviv Chairman of the board

Evogene CEO and President



Dr. Inbal Dangoor Head of R&D

Former Biotech Trait Manager, Ag seeds division Evogene



**Dorit Kreiner** CFO

Former Chief Financial Officer in Therapix (TASE: THXBY) and NRGene





Dr. Yossi Tam Cannabinoid clinical research

Director, Multidisciplinary Center for Cannabinoid Research of the Hebrew university



Dr. Yariv Brotman Plant metabolic pathways

Ben Gurion University & Max Planck institute of Molecular Plant Physiology



Dr. Moshe Bar Plant breeding

Former Global Head of Scouting and Strategic Projects at Syngenta and VP R&D at Zeraim Gedera



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Market & Challenges

Products & Go-To-Market Technology & Partnerships

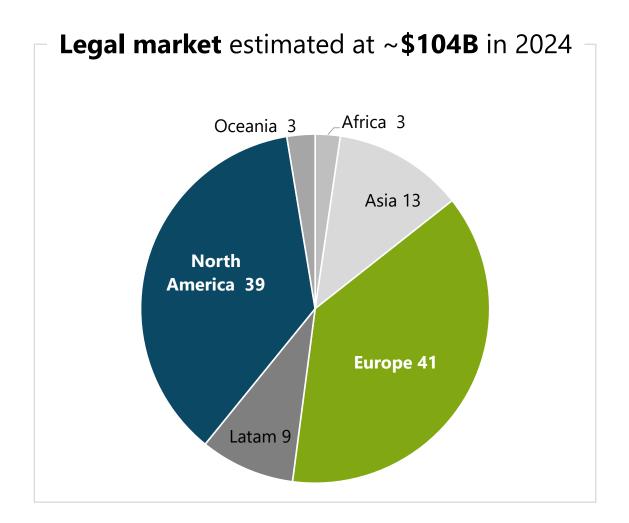
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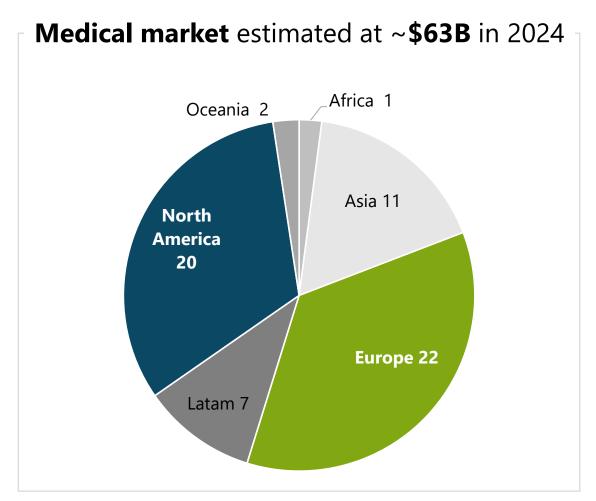
Annexes

Evogene group



## Market



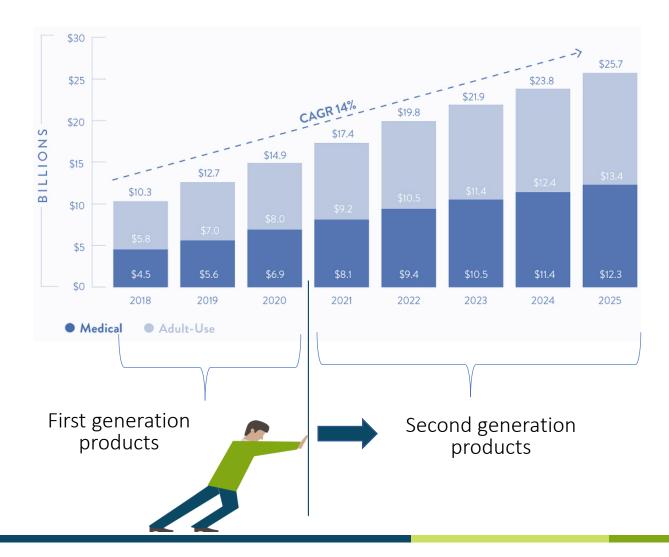


Source: Cannabis global report, prohibition partners Nov 2019, numbers in graph are rounded



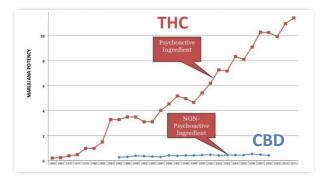
## The opportunity and gap

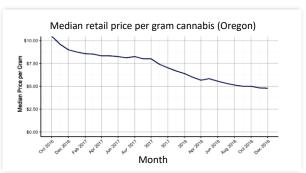
Addressing phenomenal market growth (14% in US only) will require to overcome significant market challenges

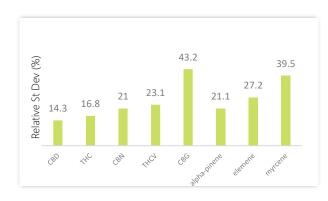




## Key Market challenges







#### **SPECIFICITY**

Specific medical indications require tailored active compound profiles. To date, breeding mainly pushed THC levels

#### **YIELD**

Legalization is driving steep declines in market prices, giving advantage to high yield products

#### **STABILITY**

Substantial variations within varieties produce inconsistent products and therefore inconsistent results

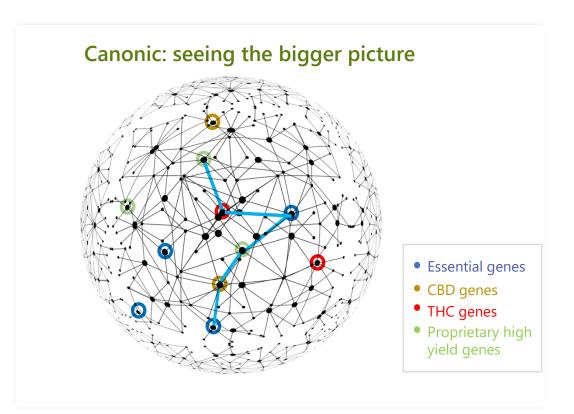


## Canonic tackles the market challenges...

### Our solution

Based on established world-class genomic expertise and technology we create specific genomic profiles to address market challenges – specificity, yield and stability.

## Current cannabis genetic mapping THC gene CBD gene affected Essential gene



## Cannabis – an optimal crop for our solution

#### Fact 1

Cannabis has been caught in a time capsule with no access to innovation and technologies

Small intervention - huge impact

#### Fact 2

Cannabis can be grown for at least 3 growth cycles in a year

Triple development speed

#### Fact 3

Cannabis is grown in a controlled environment

**Consistent performance** 

Canonic's technology platform enable fast & efficient, non-GMO product development



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## Product types

#### Precise<sup>+</sup>

**Stable** enhancement of **specific active** compounds



Category 1: Medical indication focus [e.g. Pain/inflammation]



Category 2: Compound profile focus [e.g. CBG/CBC]

#### MetaYield\*

**Stable** enhancement of total plant compounds



Category 3: Increased compounds/plant [e.g. Increased trichomes prevalence]



Category 4: Increased compounds/area [e.g. Dwarf - early flowering]

### Precise<sup>+</sup> Products

### **Category 1: Medical indication focus**





We use proprietary pre-clinical trials to guide our breeding program to specific medical indications

#### ✓ Market value - \$16B\* Medical cannabis is anticipated to reach 10% of the \$160B Chronic Pain and Inflammation market

### **Category 2: Compound profile focus**





We identify specific minor cannabinoids and optimize their biosynthesis in planta

✓ Market valuse- \$15B\*\* CBG is priced at 200\$ per gr. At 5% CBG the revenue per acre is 17.5M\$

<sup>\*\*</sup>Estimating those cannabinoids will reach 60% of the comparable CBD market in 2025 (A.G.P. Market survey).



<sup>\*</sup>Based on 10% of the current pain management and inflammation market (Visual Capitalist data).

## Agreement for Pre-Clinical Studies



Canonic Announces an Agreement with Hadassah Medical Center for Pre-Clinical Studies to Support the Development of Canonic's Medical Cannabis Products

The studies will focus on inflammatory indications at Prof. Reuven Or's laboratory

Rehovot, Israel - January 27, 2020 - Canonic, a wholly owned subsidiary of Evogene Ltd. (NASDAQ, TASE: EVGN) focused on the development of medical Cannabis products, announces today an agreement with Hadasit, Hadassah Medical Center Technology Transfer Company, for pre-clinical studies to support the development of anti-inflammatory medical Cannabis products as part of its *Precise* product program. The work will be conducted by the laboratory of Prof. Reuven Or in Hadassah Medical Center (Ein Kerem, Israel), screening Canonic's Cannabis core collection in inflammatory in-vitro models. These studies are expected to support the development of Canonic's unique Cannabis varieties with anti-inflammatory properties.



### MetaYield+ Products

### Category 3: Increased compounds/plant







Active compounds concentration is effected by the trichome population, we have proprietary IP for trichome enhancement

✓ Market Value- \$5B\* 10% increase in trichome prevalence can increase revenue per acre by >\$1.9M



### Category 4: Increased compounds/area







Yield per area is affected by plant architecture, we have proprietary knowhow for plant morphology and dwarfing

✓ Market value - \$3.5B\* 10% annual yield increase (add. 2 cycles/y) can increase annual revenue per acre by >1.3M\$



## Initiation of Cultivation & Breeding Program



Canonic Announces Initiation of Cultivation and Breeding of Cannabis Varieties with Unique Genomic Profiles for the Development of Medical Cannabis Products

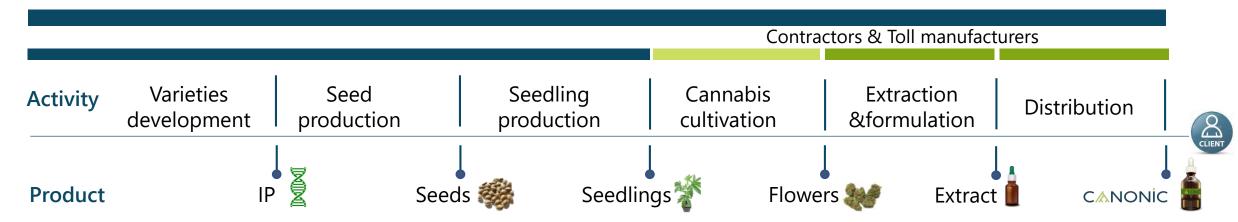
This announcement follows successfully importing a collection of widely genetically diverse cannabis lines, establishing specialized R&D facilities, and receiving regulatory approval from the Israeli Medical Cannabis Agency (IMCA)

Rehovot, Israel - November 6, 2019 - Canonic, a wholly owned subsidiary of Evogene Ltd. (NASDAQ, TASE: EVGN) focused on the development of medical cannabis products, announces today the initiation of its cultivation and breeding program of cannabis varieties with unique genomic profiles for the development of medical cannabis products. The initiation of cannabis cultivation follows: (1) successfully importing widely genetically diverse cannabis lines originating from different territories, (2) establishment of cannabis dedicated R&D facilities, including greenhouses, a molecular lab and tissue culture rooms and (3) receipt of the required regulatory approvals from the Israeli Medical Cannabis Agency (IMCA).



### Go-to-Market

### CANONIC















**R&D** facility (in place)

Nursery (2020)

**Regional cultivators** (agreements in drafting)

**GMP** manufactures (agreements in drafting)

Local distributers (mapping potential partners)



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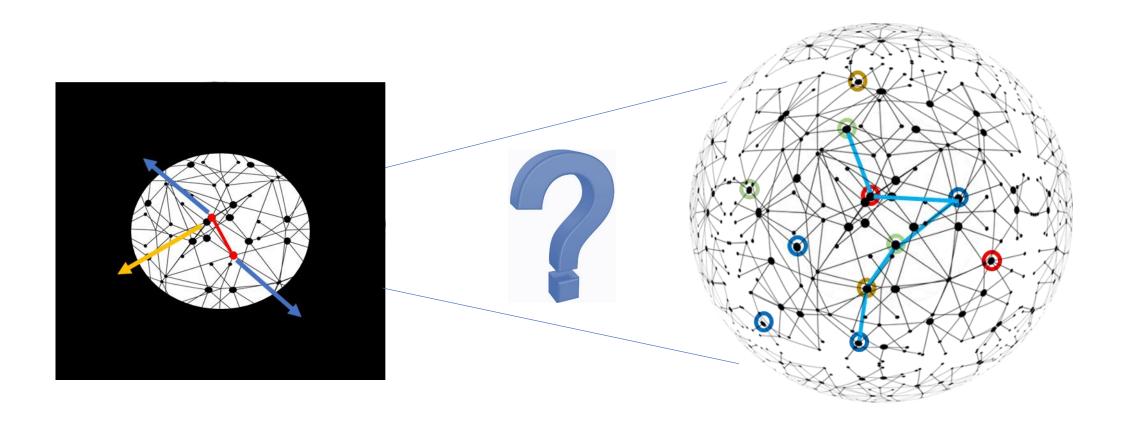
Summary

Annexes

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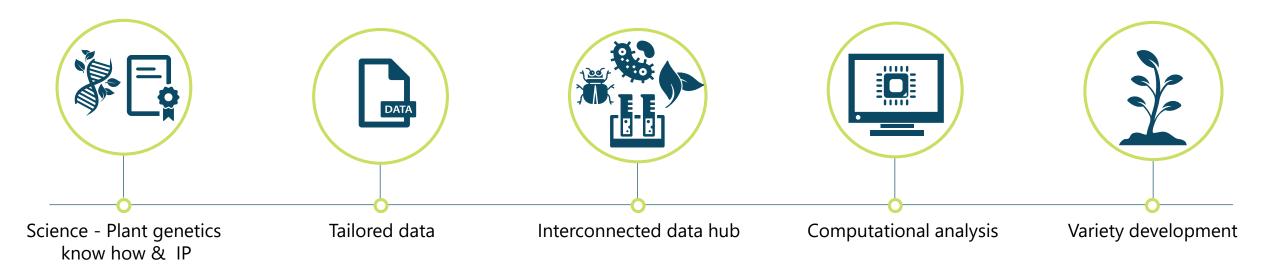
## What do we need to lift the curtain?





## Enabling technology start to end

Canonic holds exclusive access to assets along the entire innovation value chain for improved varieties development



Innovation will transform the cultivation, processing, sale, and consumption of cannabis in legal markets (New Frontier data 2019)



## Harnessing IP and Data







#### An immense IP portfolio

## Within the top 10 companies in the world holding plant genetics know how & IP



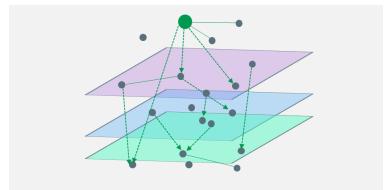
- Trichomes
- Growth rate and phenology
- Plant architecture
- Abiotic stress tolerance
- Disease resistance

### **High quality data**



- > 200 plant species
- > Dozens of Cannabis lines
- > 3\*10<sup>9</sup> data points
- > 1000 experiments
- > 10 Omic data types

#### **Multilayer Hubs**

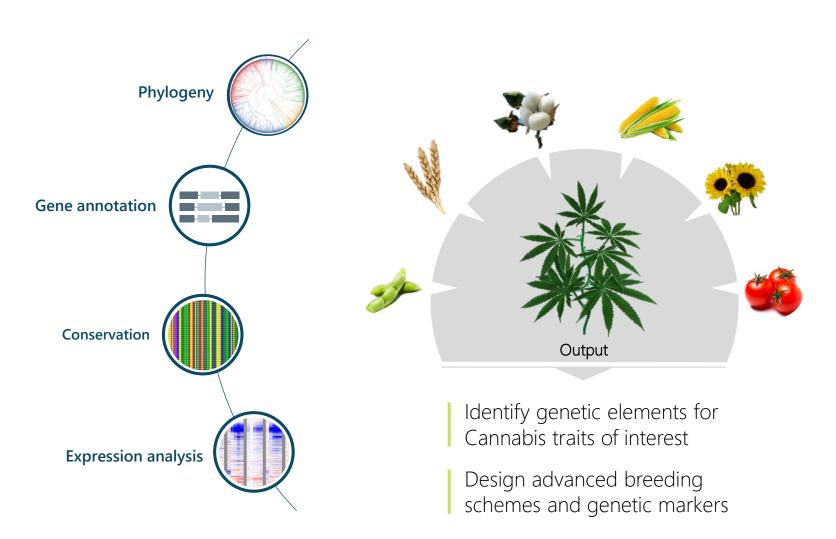


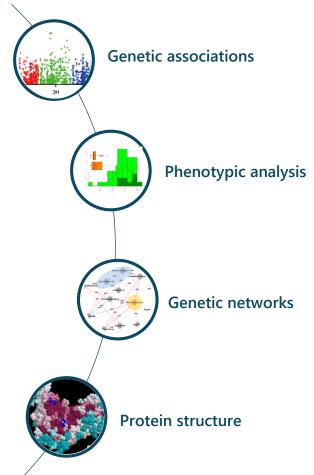
- Genome
- Transcriptome
- Metabolome
- Phenotypes
- Clinical data\*



## Applying cutting-edge computational power









## Developing in Israel's top cannabis R&D facilities















22,000 sqf of greenhouses (including quarantine greenhouse) integrating the latest technologies for climate control, daylight control, fertilization and irrigation dedicated for cannabis plant development.

Molecular labs and tissue culture facilities fully equipped for cannabis R&D

#### Regulation

Good Security Practice (GSP) approval and possession license for cannabis from the Israeli Medical Cannabis Agency (IMCA)



## Partners and collaborators

### Data & Computational



### Clinical validation





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Introduction

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Summary

Annexes

1. Evogene group



## Milestones roadmap







### 2019

- Establishment of R&D growing facility
- Build cannabis core collection
- Establish initial cannabis database
- Complete at least two cannabis √ growth cycle
- Establish agronomic protocols  $\checkmark$

### 2020

- First trait demonstrated
- Complete three cannabis growth cycles
- Complete establishment of proprietary cannabis database & computational infrastructure
- Expand core collection of cannabis varieties

### 2021

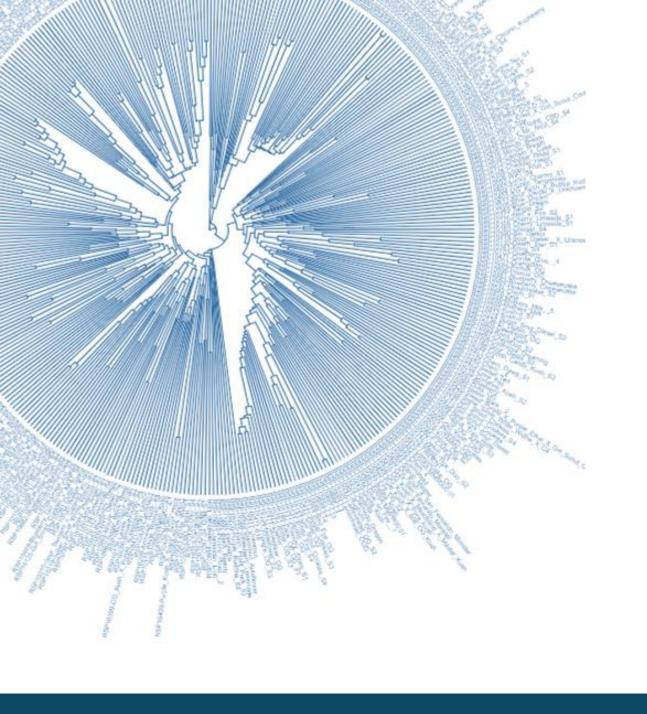
- Finalize development of first improved variety
- Pre-commercial stage
- Develop extraction & formulation process
- Analyzed clinical effect based on dedicated research



## Summary

- **Canonic develop** and bring to market medical grade Cannabis through a revolutionary genomic approach
- The market is growing fast, and the **key challenges** are specificity, yield and stability
- Using computational power (Artificial Intelligence, Big Data) we decode the Cannabis genome & identify the specific genomic profiles to overcome market challenges
- We have exclusive access to **Evogene's CPB technology platform, IP and infrastructure** for the development of medical cannabis products
- **Go-To-Market strategy** Variety development through advanced breeding, seed production and seedling production, will be conducted in-house, while cultivation, formulation and distribution will be conducted through partnerships
- **Two product lines:** (I) Stable enhancement of specific active compounds (II) Stable enhancement of total plant compounds







Thank you



— Annex I: Evogene Group —

### Evogene parent companya world leading computational biology company



#### **MISSON**

Evogene (NASDAQ, TASE: EVGN) is a leading company in leveraging computational biology to design novel products for life-science-based industries including: human health, agriculture and industrial applications



#### TECHNOLOGY – THE CPB PLATFORM —



Utilizing artificial intelligence and other algorithms on unique biological BIG DATA with deep understanding of life-sciences, focusing on product candidates addressing the majority of product criteria at 'Stage Zero'.



#### CPB CAPABILITIES FOR PREDICTION OF INNOVATION

- Genetic elements controlling desired biological processes
- Small molecules active ingredients for chemical based products
- Microbes active ingredients for microbial based products



#### TARGET MARKETS AND CURRENT ACTIVITIES

- Agriculture Ag-Chemicals, Seed Traits, Ag-Biologicals
- Human Health Human Microbiome, Drug Discovery, Medical Cannabis
- Industrial Applications Castor oil



## Evogene – corporate structure

