The information contained in this presentation is not a substitute for professional medical advice, diagnosis, or treatment. If you have any questions or concerns about your health, you should always consult a qualified healthcare professional. Do not disregard, avoid, or delay obtaining medical advice from a healthcare professional. Cannabidiol (CBD) and other cannabis plant constituents should not be used as a substitute for conventional medical care. CBD and other cannabis plant constituents may interfere with conventional medical treatments.

Jay Pharma does not have approval from the U.S. Food and Drug Administration or any other governmental agency, whether in the U.S. or abroad, to sell or market any product to treat or cure any disease or condition, including drug candidates that Jay Pharma hypothesizes may, following further study, clinical trials and all required approvals, be used to treat certain cancers. Jay Pharma drug candidates have not completed the approval process (including, but not limited to clinical trials) that is required by the U.S. Food and Drug Administration. Jay Pharma drug candidates have not been proven safe or effective and may not receive U.S. Food and Drug Administration approval. Jay Pharma does not currently sell any drug products or other treatments.

This investor presentation contains forward-looking statements. Forward-looking statements provide Jay Pharma’s current expectations or forecasts of future events. You can identify these statements by the fact that they do not relate strictly to historical or current facts. You can find many (but not all) of these statements by looking for words such as “seeks,” “believes,” “hopes,” “expects,” “anticipates,” “estimates,” “projects,” “intends,” “plans,” “would,” “should,” “could,” “may,” “will” or other similar expressions. In particular, these include statements relating to future actions; Jay Pharma’s prospective products, applications and customers; and information about future performance or results of prospective products. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from Jay Pharma’s historical experience and its present expectations or projections. Factors that could cause actual results to differ from those discussed in the forward-looking statements include, but are not limited to, whether:

- the results of research conducted on animals will be reflected in human trials;
- Jay Pharma can ultimately develop products for use by humans;
- products developed by Jay Pharma will receive approval by appropriate governing agencies for marketing;
- demand can be created for the products Jay Pharma develops;
- Jay Pharma’s products will be adversely affected by competitive or alternative products, technologies and pricing;
- Jay Pharma will have the ability, assuming it receives approval to market its products, to manufacture or have manufactured any products it develops;
- Jay Pharma will be able to protect its intellectual property;
- Jay Pharma will be successful at managing the risks involved in the foregoing.

The forward-looking statements are based upon management’s beliefs and assumptions and are made as of the date of this presentation. Jay Pharma undertakes no obligation to update or revise any forward-looking statements included in this presentation. You should not place undue reliance on these forward-looking statements.
Jay Pharma is an evidence-based pharmaceutical company, dedicated to developing innovative cannabinoid-based products and combination therapies to improve the quality of life for those living with serious and chronic conditions, initially focusing on oncology care.
Industry Growth Driven by a Confluence of Factors

**LEGISLATIVE CHANGE**
- Canada and 11 U.S. states legalize adult use cannabis
- World Health Organization published a report stating CBD does not appear to have abuse potential or cause harm
- President Trump signs the Farm Bill, removing hemp from the list of controlled substances

**INTEREST BY BIG PHARMA**
- GW Pharma’s Epidiolex is the first FDA-approved cannabis-derived drug
- Novartis partnered with Tilray to commercialize non-smokable medical cannabis offerings, co-brand products, and to develop new products

**CAPITAL INFLOWS FOLLOW DEMAND**
- Constellation’s Brands invests $3.8B in Canopy Growth
- Altria invests $1.8B in Cronos
The Industry Needs More Data

In a 2017 report, the National Academy of Sciences noted that cannabis has both therapeutic value and public health risks, and that there is a systemic lack of research needed to properly evaluate cannabinoid-based therapies.

REPORT RECOMMENDATIONS

— Improve Research Quality: Develop standards and benchmarks to guide research
— Address Research Gaps: Evaluate the short- and long-term health effects
— Improve Surveillance Capacity: Ensure sufficient data are available
— Address Research Barriers: Fully characterize the impact of regulatory barriers to research and propose strategies for supporting a comprehensive research agenda
Jay Pharma Stands Out in a Crowded Sector

**FOCUS**

— Targeting oncology indications to alleviate the side effects associated with cancer treatment; together with combination therapies to enhance the current standard of care

**EVIDENCE-BASED MEDICINE**

— Leveraging our license with Tikun Olam, creating access to 20,000 patient records using cannabinoid therapies
— Building a robust study plan at leading academic institutions

**INTELLECTUAL PROPERTY**

— Leverage our current license with Avidekel, a strain of cannabis with well studied genetics
— Expand our growing portfolio

**SCIENTIFIC ADVISORY BOARD**

— Leveraging and expanding our partnerships with leading academic oncology centers, together with our collaboration with world-class physicians
Leadership

Dave Johnson, CEO and Chairman Elect (Learn More) Former CEO of Convatec, oversaw the $4.1B spin out of Convatec from Bristol Myers Squibb; former CEO of Alliqua Biomedical, a developer of wound care technologies

Avani Kanubaddi, President, Palliative Care (Learn More) Entrepreneur and business leader with a passion for health; founder of Welmedix, a specialty dermatology company; held sales and marketing positions at ConvaTec and Pfizer

Robert Wilkins, Vice President, Clinical Research (Learn More) Founder of QPS Consulting, which provides market assessment, clinical and regulatory planning, and other services to the healthcare and life sciences industry

Sarah Dakar, Vice President, Product Development (Learn More) Background managing and launching cannabinoid and traditional skincare products with responsibilities including brand and product development, and marketing
Dave Johnson, Chairman (Learn More) Former CEO of Convatec, oversaw the $4.1B spin out of Convatec from Bristol Myers Squibb; former CEO of Alliqua Biomedical, a developer of wound care technologies

Jim Woolsey, Director (Learn More) Director of Central Intelligence from July 2002 to March 2008; Vice President of Booz Allen Hamilton; venture partner at Vantage Point Venture Partners

George Kegler, Director (Learn More) Chief Finance Officer with experience in the medical device and pharmaceutical industries; former CFO of Mallinckrodt Pharmaceuticals; former Chief Financial Officer at Convatec
Academic and Industry Partners

Our academic and industry partners have the potential to accelerate product development, market entry, data collection, analysis, and advancement of clinical trials

GLOBAL PARTNERSHIPS AND COLLABORATORS

- Tikun Olam Ltd. brings proprietary products and data, clinical research experience, and access to resources in Israel
- St. George’s University of London brings research capabilities and relevant domain expertise in cancer and cannabinoids
- Memorial Sloan Kettering Cancer Center brings world class thought leadership in cancer and cancer treatment
- The Soroka Medical Cancer Center brings clinical research capabilities and extensive patient access
Our Scientific Advisory Board includes a world-class team of oncology experts, with backgrounds in cannabinoid research, new drug development, clinical practice, and clinical research, to advance the clinical program of novel cannabinoid medicines as an adjunct to standard cancer care.

Jerry Zeldis, M.D., Ph.D., Former Chief Medical Officer, Celgene
New Drug Development
Member of Board of Directors

James Perry, M.D., Neuro-Oncologist, Sunnybrook; Professor, U of Toronto
Clinical Research

Angus Dalgleish, M.D., Professor, St. George’s, University of London
Oncology Research

Tali Siegal, M.D., Professor, Neuro-Oncology, Hebrew University
Oncology Research

Wai Liu, Ph.D., Research Fellow, St. George’s, University of London
Cannabinoid-Cancer Research

Zvi Vogel, Ph.D., Professor, Neurobiology, Weizmann Institute
Oncology Research, Patent Contributor
Tikun Olam is a leading supplier of medical cannabis in Israel, and one of the leading, research-focused medical cannabis companies globally.

**TIKUN OLAM HIGHLIGHTS**

- Proprietary cannabis strains include:
  - Avidekel (CBD-rich strain)
  - Midnight (~1:1 ratio of CBD to THC)
  - Erez (THC-dominant)

- Employs evidence-based medicine
  - Products have been studied in numerous medical trials
  - Patient databases include 20,000+ persons treated across a variety of conditions

Tikun Olam partners in the U.S., Canada (MedReleaf), and Australia (MediFarm) have developed leadership positions in local markets.
Avidekel: Flagship CBD Strain

Marketed by Tikun Olam in Israel, and by MedReleaf in Canada, Avidekel has been widely used and studied in a medical cannabis setting and has been observed to be safe and well tolerated.*

ACCESS TO PATIENT DATA

We plan to use data collected from patients who are using or have used Avidekel to guide future surveillance studies and/or clinical development.

*These claims have not been evaluated by the FDA
SynThresis: Synthetic CBD Blend

Created by Jay Pharma, SynThresis is a proprietary blend of pure CBD isolate combined with Arnica and Aloe to create a powerful treatment for various skin ailments related to serious chronic conditions, including skin reactions to cancer drug therapy.

PROPRIETARY COMBINATION

We plan to develop high quality, highly purified and reproducible API to use in all of our products for testing and eventual commercial development.
We have filed several patents covering the use of CBD with current cancer treatments, both broadly, as well as for specific cancer types

**IP RELATED TO CBD COMBINATION THERAPIES IN CANCER**

**Combination Therapy (WO2017072773):** Combinations of compositions comprising cannabidiol (CBD) and second therapeutic pharmaceutical cancer agents (ChEH/AEBS inhibitors, naphthoquinone or derivatives) for the treatment of cancer

**Combination Therapy (18191203.1):** The invention relates to regimen of drug administration and drug combinations for use in the treatment of cancer and/or an immune disorder

**Combination Therapy (18165731.3):** The invention relates to regimen of drug administration and drug combinations for use in the treatment of breast cancer, including triple-negative breast cancer

**Avidekel (US 2014/0259228 and 2016/0073566):** The disclosure relates to a new and distinct variety of the Cannabis plant named ‘Avidekel’, characterized by a high amount of CBD
Despite widespread demand, the market lacks cannabinoid products that address the unique needs of cancer patients and oncologists...

Most cancer patients have a strong interest in learning about cannabinoids during treatment. 74% want information from cancer care providers.

80% of oncologists discuss medical cannabinoids with patients and nearly one-half recommended them clinically.


Survey of 237 Oncologists (Braun IM, J Clin Oncol, 2018)
Palliative care is about quality of life, not end of life. For many patients, the concept of palliative care often carries with it a negative connotation, conjuring ideas and fears of the end of life; however, the purpose of palliative care is to improve the patient experience and reduce suffering in all areas of life, including physical, emotional, psychological, and spiritual well-being.

PALLIATIVE CARE OPPORTUNITY

- Incorporating palliative care into cancer management has the potential to not only improve quality of life, but may also prolong survival (Temei, NEJM, 2010; Ferrell, J Clin Oncol, 2017).

- The physical ailments experienced by cancer patients vary widely based on the individual, the type and stage of cancer, and the choice of therapy.

- Three of the most common and perhaps most debilitating complaints addressed by palliative care are chronic pain, chemotherapy-induced nausea and vomiting, and severe body wasting (Reeve, JNCI, 2014).

- Although efforts have been made to ameliorate these symptoms, many patients do not achieve adequate relief; the need for new therapeutics to improve these debilitating symptoms has gained increasing attention in recent years.
### Data on Cannabis in a Palliative Care Setting

#### CONCOMITANT MEDICATIONS AT INTAKE VERSUS AT SIX MONTHS

<table>
<thead>
<tr>
<th>Medication family</th>
<th>Intake</th>
<th>Change at Six-Month Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Stopped Taking This Medication</td>
</tr>
<tr>
<td>Opioids, n (%)</td>
<td>344</td>
<td>124 (36.0)</td>
</tr>
<tr>
<td>Other analgesics and antipyretics, n (%)</td>
<td>177</td>
<td>56 (31.6)</td>
</tr>
<tr>
<td>Anxiolytics, n (%)</td>
<td>155</td>
<td>37 (23.8)</td>
</tr>
<tr>
<td>Hypnotics and sedatives, n (%)</td>
<td>114</td>
<td>29 (25.4)</td>
</tr>
<tr>
<td>Corticosteroids for systemic use, plain, n (%)</td>
<td>85</td>
<td>27 (31.7)</td>
</tr>
<tr>
<td>Antiemetics and antinauseants, n (%)</td>
<td>49</td>
<td>33 (67.3)</td>
</tr>
<tr>
<td>Laxatives, n (%)</td>
<td>38</td>
<td>12 (31.5)</td>
</tr>
</tbody>
</table>

Schleidera, European Journal of Internal Medicine, 2018
Clinical Plan*

**PALLIATIVE CARE**

- **Radiodermatitis**
  - Animal Testing: Q1 2020
  - Healthy Volunteer Study: Q1 2020
  - Signed Study Agreement: Q2 2020
  - First Patient Enrolled: Q3 2020
  - Preliminary Results: Q4 2020

- **Neuropathy**
  - Animal Testing: Q1 2020
  - Healthy Volunteer Study: Q2 2020
  - Signed Study Agreement: Q3 2020
  - First Patient Enrolled: Q4 2020
  - Preliminary Results: Q1 2021

**COMBINATION TX**

- **Glioblastoma multiforme**
  - Signed Study Agreement: Q2 2020
  - PK Testing: Q2 2020
  - First Patient Enrolled: Q3 2020
  - Ongoing Patient Enrollment: Q3 2020 – Q3 2022
  - Preliminary Results: Q4 2022

*Estimated timing subject to modification.
Our development programs seek to advance novel combinations of cannabidiol (CBD) with chemotherapeutic agents and immunotherapies

**POTENTIAL ADVANTAGES**

— Preclinical data suggests combination therapies may improve the activity of certain chemotherapies or dendritic cell-based cancer immunotherapies
  
  — Initial evidence suggests that CBD may enable more potent or longer-lasting therapeutic effects

— Preclinical data suggests combination therapies may enable lower dosing of chemotherapeutic agents resulting in:
  
  — A reduction in treatment-induced side effects
  
  — Treatment in patients with weakened immune systems
In a preclinical study, CBD was found to reduce neoplastic cell counts by interfering with the growth of malignant cells; the reduction in cell number was not associated with a loss of cell viability (Scott, Anticancer Res, 2013)

CBD EFFECTS THE GROWTH OF MALIGNANT CELLS

Acute Lymphoblastic Leukemia Cell Line (CEM)

Acute Promyelocytic Leukemia Cell Line (HL60)
Glioblastoma Multiforme (GBM)

Glioblastoma multiforme (GBM) is among the most common and aggressive malignant primary brain tumors; with a poor prognosis and relatively few effective interventions, new therapies are desperately needed to improve outcomes and survival.

**PRECLINICAL DATA SUPPORTING THE CONTINUED INVESTIGATION OF CBD**

- GBM tumors express CB2 receptors, through which cannabidiol (CBD) and other cannabinoids are thought to exert their anti-cancer effects (Ellert-Mikłaszewska, Adv Exp Med Biol, 2013).

- 92% of patients with solid tumors experienced positive clinical response (Kenyon, 2018):
  - Reduction in circulating tumor cells and reduction in tumor size.

- CBD was able to reduce the growth and survival of GBM cell lines (Marcu, Mol Cancer Ther, 2010):
  - Disrupting the normal functioning of the cell (cell cycle arrest).
  - The induction of programmed cell death (apoptosis).

- Cannabinoids have been shown to promote cancer cell death (Dumitru, Front Mol Neurosci, 2018):
  - The overproduction of a lipid subset, called ceramides; accumulation of ceramides in GBM cells may prevent the cell from functioning normally.
  - The generation of unstable oxygen molecules (reactive oxygen species) can damage nearby molecules and trigger cell death.
A Phase 1/2 study in Israel of oral Synthetic CBD extract in combination with Clomiphene or Synthetic CBD extract alone given concurrently with dose-dense Temolozomide to patients with recurrent or progressive glioblastoma

- **Study Design:** A Phase 1/2 open label, two arm, randomized, prospective study
  - An initial DLT clearing cohort (6 patients) will be investigated in order to rule-out any toxicity related to the combination
  - If successful, recruitment will continue, and the next 40 patients will be randomization into two arms:
    - **Arm 1:** Synthetic CBD extract + Clomiphene + Temolozomide
    - **Arm 2:** Synthetic CBD extract + Temolozomide
- **Primary Endpoints:** Progression free survival; progression of disease will be determined from Response Assessment in Neuro-Oncology (RANO) tumor assessment (based on MRI scans); safety parameters will include serious adverse events, and other adverse events as reported by the patients and caregivers
- **Sample Size:** 6 patients in the first phase of the study; 40 patients in the second phase with 20 patients in each arm

**KEY STUDY MILESTONES**

- Clinical study protocol has been completed
- Dr. Tali Siegal has been selected as primary investigator
- Preclinical studies have been completed; additional animal studies are underway
- Hospital Internal Review Board (IRB) approval has been received
- Ministry of Health, center for cannabis (Yakar) has given preliminary approval
- Waiting for final Ministry of Health approval
Radiodermatitis (RD) is a skin reaction that occurs as a side-effect of radiotherapy during cancer treatment or sometimes after interventional radiology.

**RADIODERMATITIS OPPORTUNITY**

- Ionizing radiation inevitably damages healthy skin tissue despite the development of high-precision radiotherapy
  - Acute skin reactions develop a few hours to weeks after the first exposure to radiation
  - Chronic RD can develop months, years or even decades after radiation
- RD is a frequent and significant side effects among patients with:
  - Breast Cancer
  - Head and Neck Cancer
- Both acute and chronic RD can substantially affect a patient’s quality of life and cosmetic outcome; solutions to prevent and treat RD are needed
Moving Forward...

EXPANDING THE MODEL

Evidence-Based Products >> OTC

Expand Indications
Palliative Care Indications
Radiodermatitis > Dermatitis

Combination Therapy Phase 1 Approvals

Phase 2
Partner Jay Parma
Phase 3
Partner

Cannabinoid Therapies

Targeting Anxiety
Cannabinoids > Psychedelics
Psilocybin

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