

February 17, 2022



# University Rotary

Chris Rivera, President, CEO & Chairman EMulate Therapeutics, Inc.

# Today's Agenda

- WA State Life Science Overview
  - Life Science Washington – LSW.org
  - Biotechnology Industry Organization – BIO.org
  - AdvaMed.org
  
- About EMulate Therapeutics

# WA State Life Science Overview

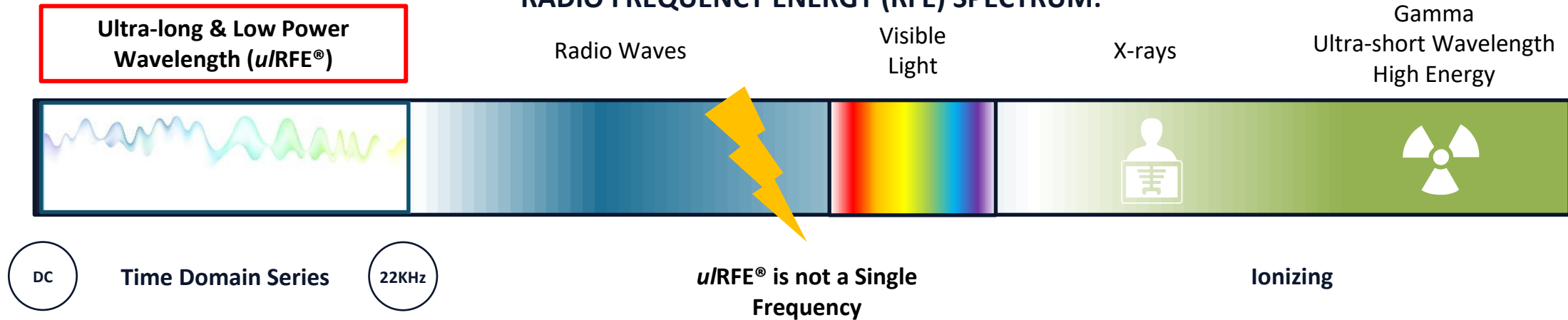
# A Little About EMulate

# Radio Frequency Energy (RFE)

RELIABLE TECHNOLOGY IN HUMAN HEALTH FOR DECADES

## Creating Digital Therapeutics

### RADIO FREQUENCY ENERGY (RFE) SPECTRUM:



Measures & records something that has *never been recorded before*

Regulates metabolic pathways in *ways never before possible*

# Recording the “Song” (WAV File) of a Molecule

SIGNAL ACQUISITION – THE SECRET SAUCE

## SQUID Description

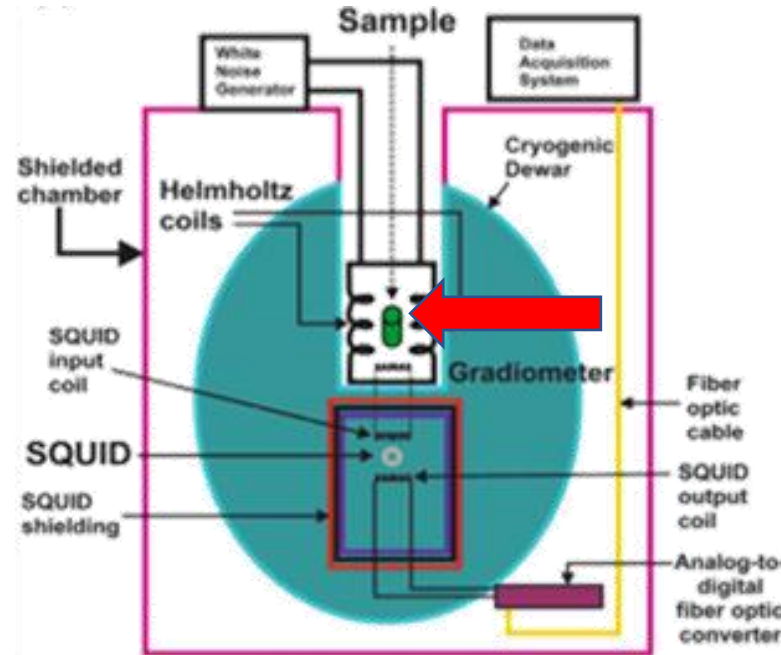
Proprietary platform utilizes Superconducting Quantum Interference Device (SQUID) technology:

- Developed by U.S. military
- Measures the electrostatic potential of molecules
- Most sensitive magnetometer (listening device) technology

EMulate’s proprietary platform “records” the electrostatic surface potential of:

- Solvated molecules of proven drugs & chemicals (non-covalent mechanism of action)
- siRNA molecules (to downregulate protein targets)
- Endogenous compounds like hormones

## Digital Signature of Molecule Recorded



## Signal Analysis & Digitization

Recording Process:

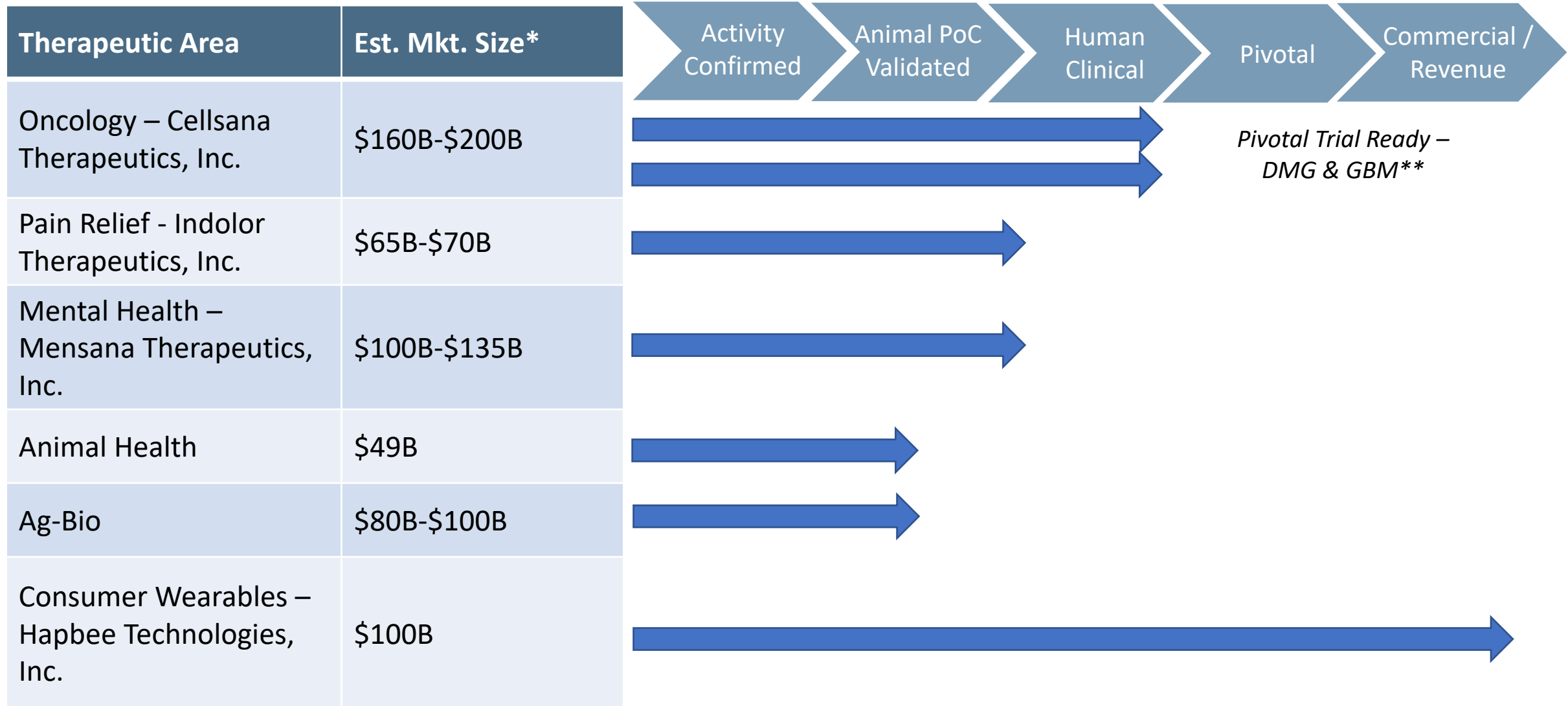
- MIDS (acquisition system) “super-cooled” to 3’ Kelvin with liquid helium
- Sample molecule of interest solvated in solution
- Multiple “dilutions” measured during recording session as a time domain series
- “signals” with most digital activity identified
- Top 2-5 signals identified and converted as a WAV file
- Those signals move into pre-clinical studies

Timeline & Costs:

- From concept – molecule identification to validated pre-clinical safety and efficacy readout;
  - ~6-12 months
  - ~\$250k - \$500k

SQUID Technology Applicable To Most Non-Covalent Molecules

# Application of Platform Technology in Multiple Large Markets



\*Market size sources in appendix

\*\*DMG pivotal trial funded with committed capital; GBM trial requires external funding and/or partnership of ~\$50M

EMulate - Not for Distribution without permission

# Cellsana Therapeutics, Inc.

Oncology Subsidiary – in process of incorporation



# Companion Animals – Oncology Results

Treatment Day



Coil Sizing



Securing Coil



Day 14



Day 21



Week 8 – Cancer-Free



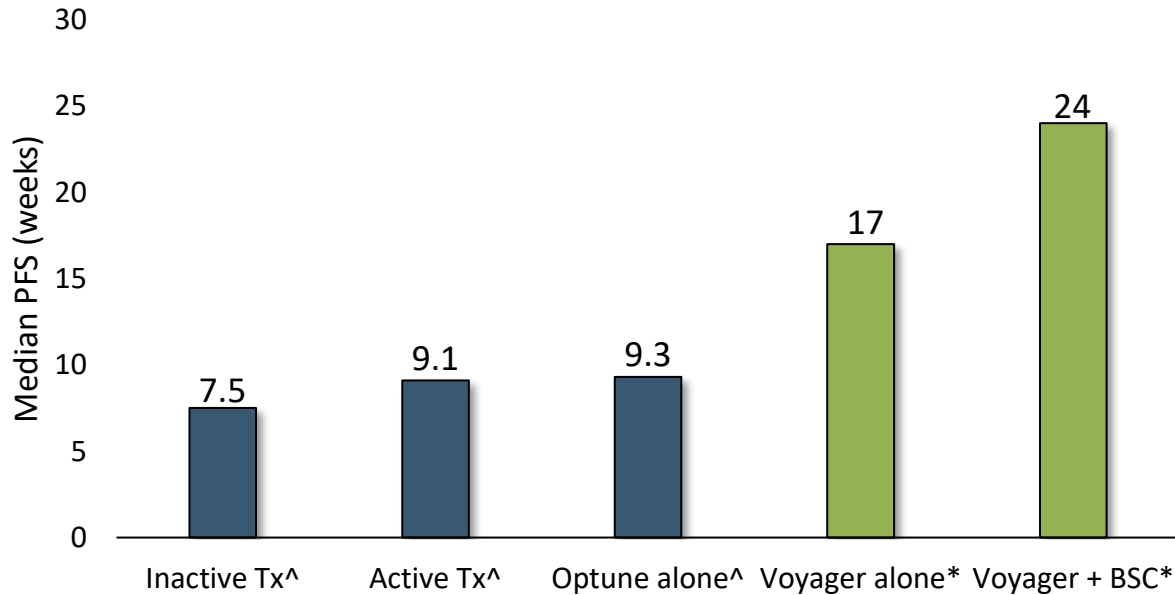
## Canine Open Label Trial Results

- >300 pets treated with naturally occurring malignancies
- PRs or CRs observed in pets with > 20 different solid tumor types
- Response seen as early as 14 days – monotherapy
- No clinically important or significant toxicities (Grade 3 or 4) were observed

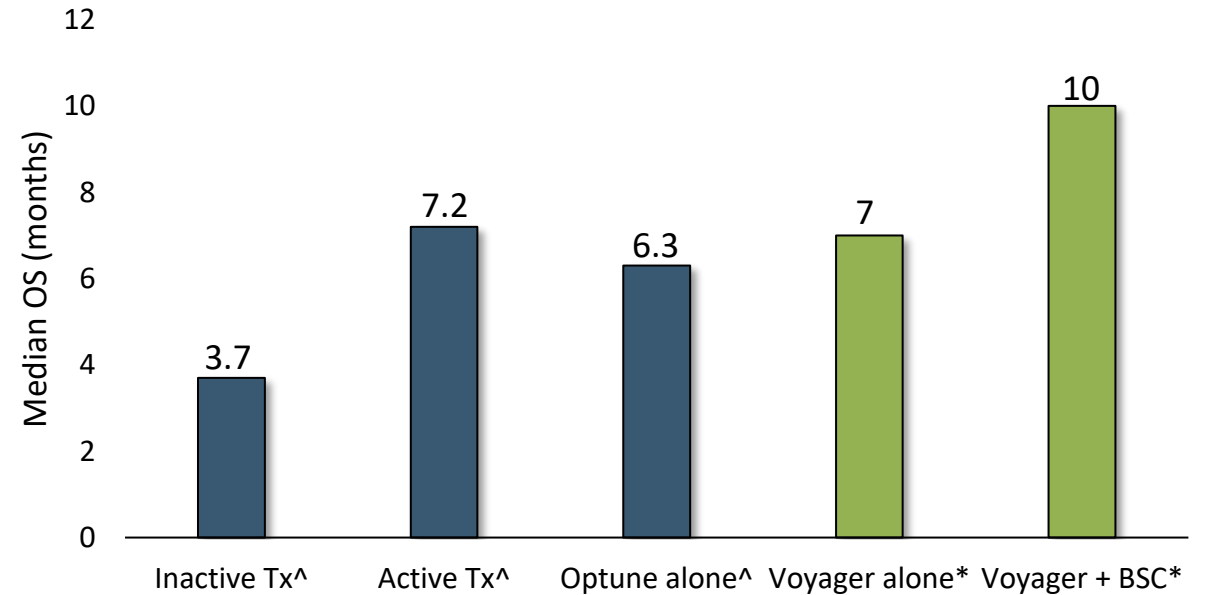
***u*/RFE® Produces CR's & PR's in over 20 different tumor types**

# Voyager's Clinical Effect in Recurrent GBM

Voyager Improves Median Progression Free Survival (PFS)



Voyager Improves Median Overall Survival (OS)



<sup>^</sup>Historical data; <sup>\*</sup>Study still ongoing, BSC: best standard of care

## Clinical Trial Results

- OS improved by ~40% (3 months) in patients treated with Voyager + BSC – “clinically meaningful” vs historical performance of Active Tx<sup>\*</sup>
- Potentially first improvement in recurrent GBM survival in decades
- Inactive Tx<sup>\*\*</sup>: historical clinical trials determined no efficacy; Active Tx<sup>\*</sup>: historical clinical trials demonstrated efficacy
- Studies designed to observe at least a 25% response rate (suggests active therapy) in patients with 1<sup>st</sup> or 2<sup>nd</sup> recurrence
- Early newly diagnosed GBM (nGBM) data “encouraging” – appears to mirror Optune nGBM pivotal experience

# Diffuse Midline Glioma (DMG)

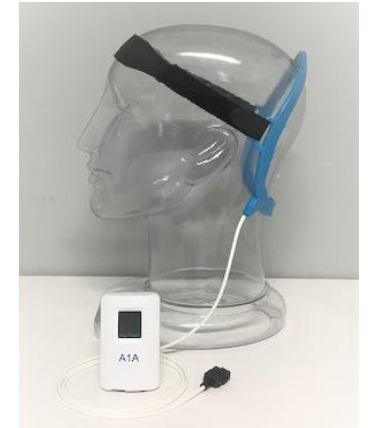
\$100M+ ANNUAL REVENUE OPPORTUNITY

- Diffuse midline glioma, a WHO grade IV tumor, is an aggressive and lethal brain tumor in young children, adolescents and young adults
- In discussions with Pediatric Neuro-oncology Consortium (PNOC) to conduct clinical trial for regulatory approval
  - 30 - 35 patient trial
  - 3+ month improvement in OS primary endpoint (~9-12 months follow-up on trial)
  - Anticipate initiation of DMG pivotal trial in H2 2022 with interim data expected in H2 2023
- Safety profile is benign in both children and adults treated (~150 human patients)
- Strong commitment from the FDA (based on multiple HDE [Humanitarian Device Exemption] meetings and communications)



## Diffuse Midline Glioma Opportunity\*

- 1,821 incidence
- Median survival – 6 – 12 months
- Usually diagnosed in children < 18 y/o
- No effective treatments available



\*Sources: "CBTRUS Statistical Report: Primary brain and other central nervous system tumors diagnosed in the United States in 2010–2014" published in *Neuro-Oncology*, Vol 19 (suppl\_5): p v1–v88. 6 Nov 2017; Cohen KJ, Heideman RH, Zhou T, Holmes EJ, Lavey RS, Bouffet E, Pollack IF. Temozolomide in the treatment of children with newly diagnosed diffuse intrinsic pontine gliomas: a report from the Children's Oncology Group. *Neuro-Oncol* 13(4):410–416, 2011; Dunkel LJ, Garvin JH, Goldman S, Ettinger LJ, Kaplan AM, Cairo M, et al. High dose chemotherapy with autologous bone marrow rescue for children with diffuse pontine brain stem tumors. *J Neuro-Oncol* 37: 67–73, 1998.

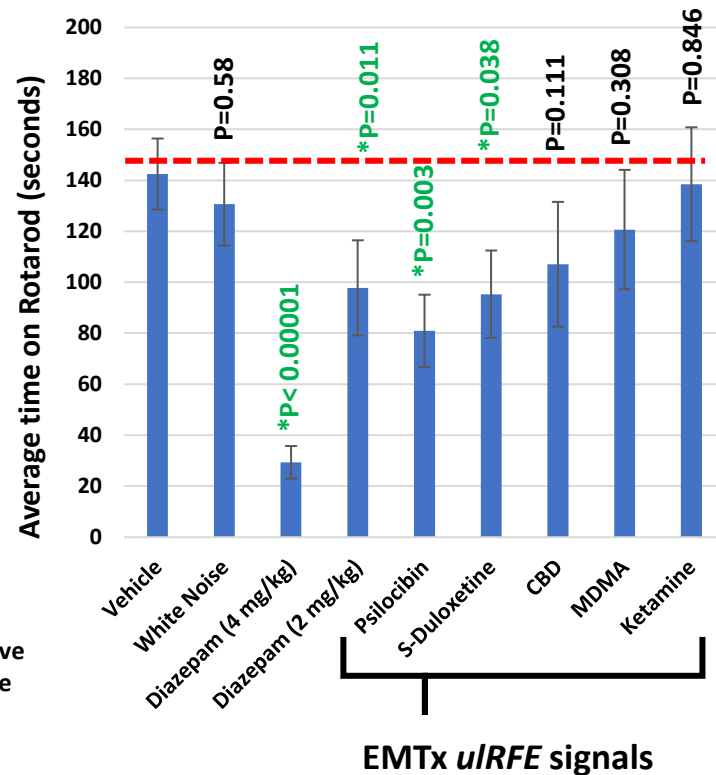
# Mensana Therapeutics, Inc.

Mental Health Subsidiary

# Positive Psychedelic Pre-Clinical Results

Conducted at Porsolt SA in Le Genest-Saint-Isle, France, - an independent Contract Research Organization (CRO) specializing in preclinical anxiety and depression models

	Vehicle	White Noise	Diazepam (4 mg/kg)	Diazepam (2 mg/kg)	Psilocibin	S-Duloxetine	CBD	MDMA	Ketamine
% Mice Falling Off Before 180 sec	32%	35%	100%	90%	80%	65%	55%	50%	30%



Diazepam: Positive control substance

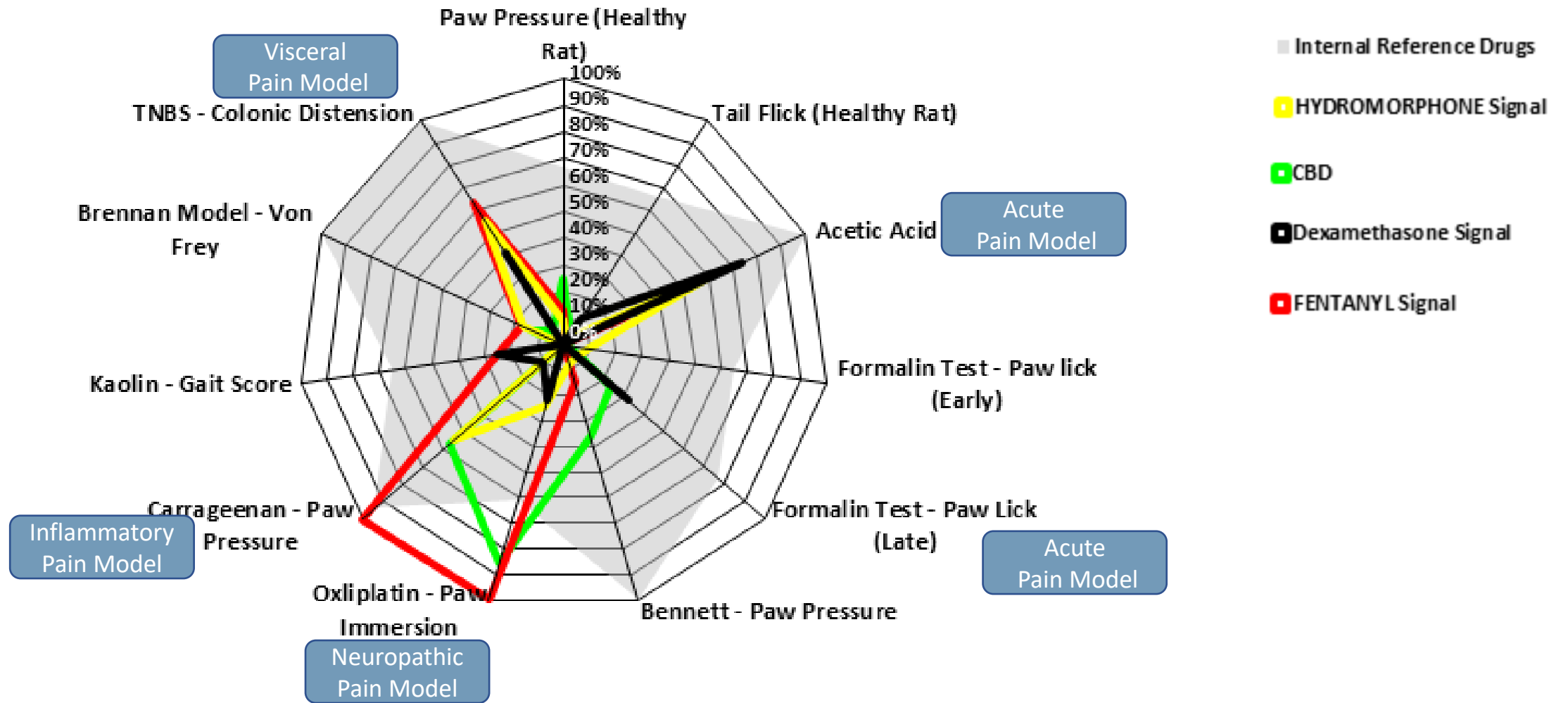
- Psychedelic signals induce measurable motor effects in this model
- Signals are equivalent or greater to 2 mg/kg diazepam
- White Noise had no measurable effect

Statistical Analysis (Student's T-Test):  $\alpha$  level set at P=0.05; error bars are standard error of the mean (s.e.m.)  
 Green values are statistically significant;  
 No correction for multiple comparisons

# Indolor Therapeutics, Inc.

Pain Management Subsidiary

# Positive Screening Data Confirms Strong Activity\*





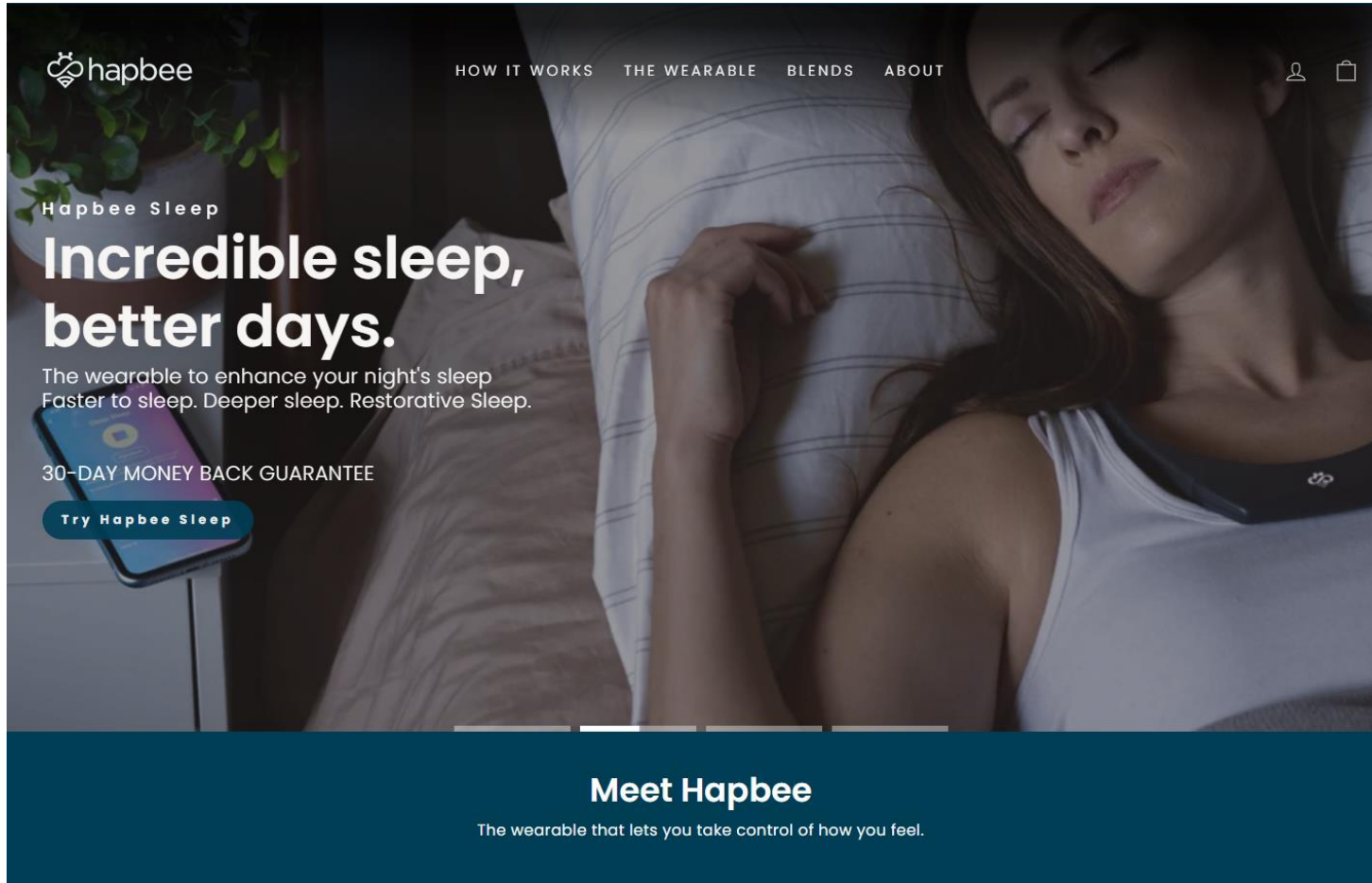
# Hapbee Technologies, Inc. (TSXV: HAPB)

Consumer Wearable Markets



# Hapbee Technologies, Inc.

EMULATE TECHNOLOGY, FOR CONSUMER USE



The screenshot shows the Hapbee website homepage. At the top left is the Hapbee logo. Navigation links include 'HOW IT WORKS', 'THE WEARABLE', 'BLENDS', and 'ABOUT'. A user profile icon and a shopping cart icon are in the top right. The main headline reads 'Hapbee Sleep Incredible sleep, better days.' Below this is the tagline 'The wearable to enhance your night's sleep. Faster to sleep. Deeper sleep. Restorative Sleep.' A '30-DAY MONEY BACK GUARANTEE' is highlighted, followed by a 'Try Hapbee Sleep' button. At the bottom, a dark blue banner says 'Meet Hapbee' and 'The wearable that lets you take control of how you feel.'

- Hapbee Technologies, Inc. - EMulate Therapeutics consumer wearable technology spin off - 2019
- Hapbee has licensed non-regulated, consumer-focused *u*/RFE recordings
- Public listing on the TSXV, HAPB.V – 10/20
- Hired consumer technology veteran CEO, 6/21 to lead strategy and growth
- Sales have been steady and continue to grow with the introduction of a new CEO and Management Team

# 2022 Targeted Milestones

- **Complete public offering on NASDAQ (EMTX) - including successful capital raise**
- **Cellsana Therapeutics, Inc.**
  - Complete incorporation of EMulate Oncology subsidiary
  - Initiate DMG pivotal trial
  - Submit GBM & DMG manuscripts for publication(s)
  - Complete pre-clinical studies validating enhanced signals & additional solid tumor models
  - Complete partnership with strategic and/or investor to initiate GBM pivotal study
  - Initiate/complete partnership in “other” solid tumor indications
- **Mensana Therapeutics, Inc**
  - Announce initial partnership
  - Formalize SAB
  - Initiate Phase I human study
- **Indolor Therapeutics, Inc**
  - Announce initial partnership
  - Formalize SAB
  - Initiate Phase I human study
- **Animal Health**
  - Incorporate EMulate Animal Health (name TBD) subsidiary
  - Announce initial partnership
- **u/RFE Technology**
  - Develop, test and validate – Next Gen delivery product(s)
  - Signal optimization – utilize AI to continue to objectively improve u/RFE signals

Thank You - Appendix