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Regenerating the future of medicine

Autologous 3D Engineered Tissues

(TASE:MTLF)

Corporate Presentation

February 2023

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Company Vision

Curing the Incurable

Innovative regenerative medicine company,

helping millions of patients worldwide

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Matricelf Introduction

- Regenerative Medicine company
- Developing 3D engineered tissue implants
- Spin-out company from Tel Aviv University (Dvir Lab, Nanotechnology Center: more than 10 years of academic research & USD ~12M in research grants)
- Established April 2019

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Proprietary Technologies

Autologous 3D implants:

- Integration of autologous matrix and cells
  - Matrix - Thermo-responsive autologous hydrogel
  - Cells - In-gel differentiation of autologous induced Pluripotent Stem Cells (iPSC)
- Engineered tissues for numerous medical indications

3D bioprinting of tissues and organs:

- Proprietary medium for 3D printing of biomaterials
- Enables biocompatible structuring of volumetric tissues and organs

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Spinal Cord Injury (SCI)

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SCI Program Highlights

Unmet need	• No available treatment for SCI - irreversible loss of motor/sensory/autonomic functions • Most potential therapies are synthetic/allogeneic which may lead to immune rejection
Our solution	• **100% autologous tissue engineered product** • **Personalized treatment, reduced potential immune response**
Market and opportunity	• Approximately 17,000 new SCI cases per year in the US • ~300,000 SCI patients in the US today • Huge economic impact on society and healthcare systems
Regulation	• Classification: Advanced Therapy Medicinal Product (ATMP) • Pre-IND meeting with FDA, March 2021
Status and timelines	• Current status – R&D, preclinical studies, feasibility trials in mice - completed • First in Human (FIH) clinical trial – 2025, Israel

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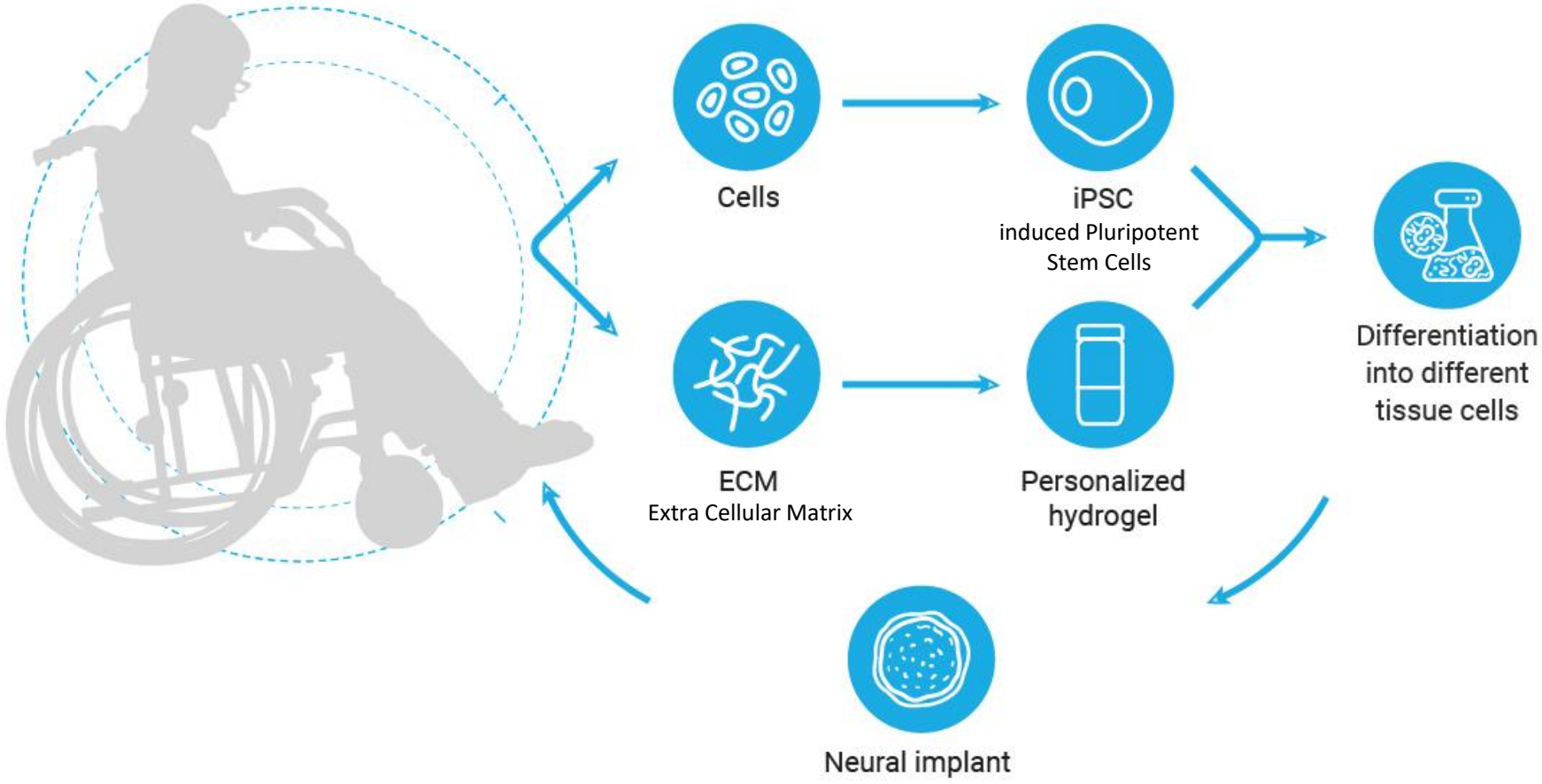
Matricelf Platform Genetares Autologous Functioning 3D Neural Implants for SCI



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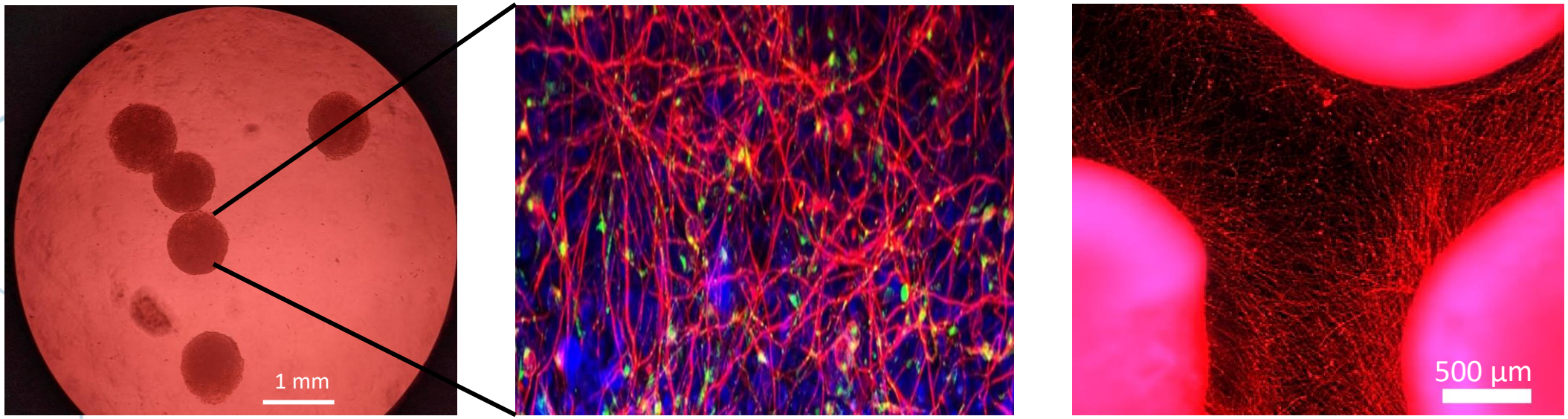
Functional Neural Implant

- ✓ Incorporation of iPSCs within extracellular matrix followed by controlled differentiation
- ✓ New synapses and neurons generate a neural network
- ✓ Matured 3D tissue formed



Lior Wertheim, Adv. Sci. 2022

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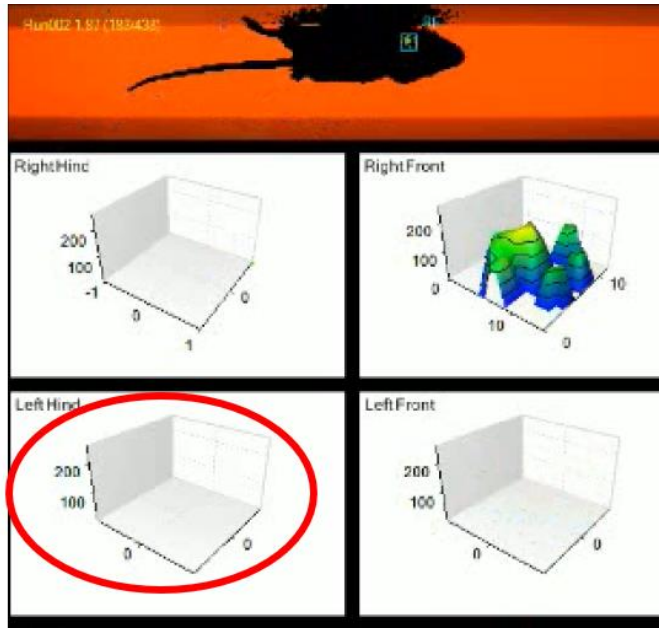
Neural Implants Restore Function

- Follow up: 2 months post spinal hemisection in mice
- “Cat walk” – four limbs motor function and gait analysis
- Control group – hemiparesis (circled in red)
- **Mice treated with neural implants regained their walking abilities**

Control



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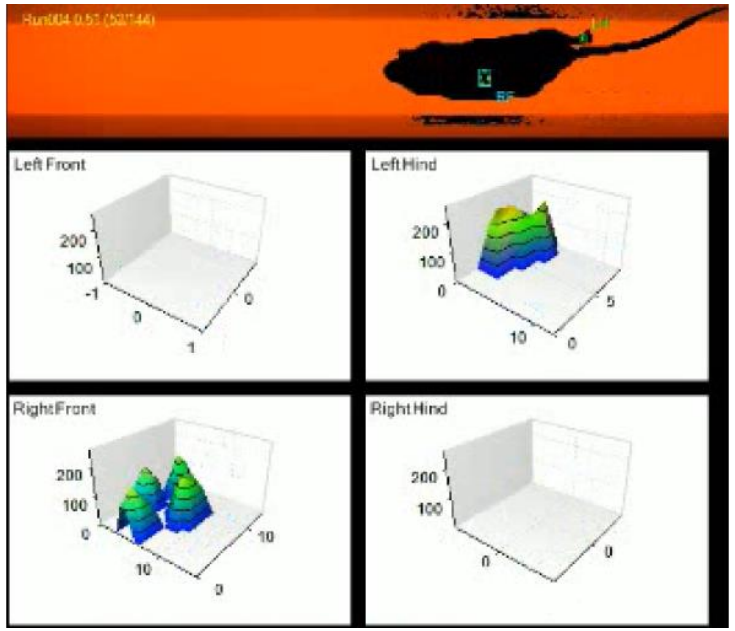

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Competitive Therapeutic Landscape

Analysis of alternative technologies							
	matricelf	MAYO CLINIC	LINEAGE CELL THERAPEUTICS AMEX: LCTX	INVIVO THERAPEUTICS NSDQ:NVIV	中國科學院 CHINESE ACADEMY OF SCIENCES	慶應義塾大学 Keio University	UC San Diego STEM CELL PROGRAM
Autologous cells	✓	✓	✗	✗	✗	✗	✗
Pluripotent cells	✓	✗	✓	✗	✗	✓	✓
Autologous scaffold	✓	✗	✗	✗	✗	✗	✗
3D structure	✓	✗	✗	✓	✓	✗	✓

Matricelf develops a one-of-a-kind technology that produces functioning, completely autologous, 3D neural implants

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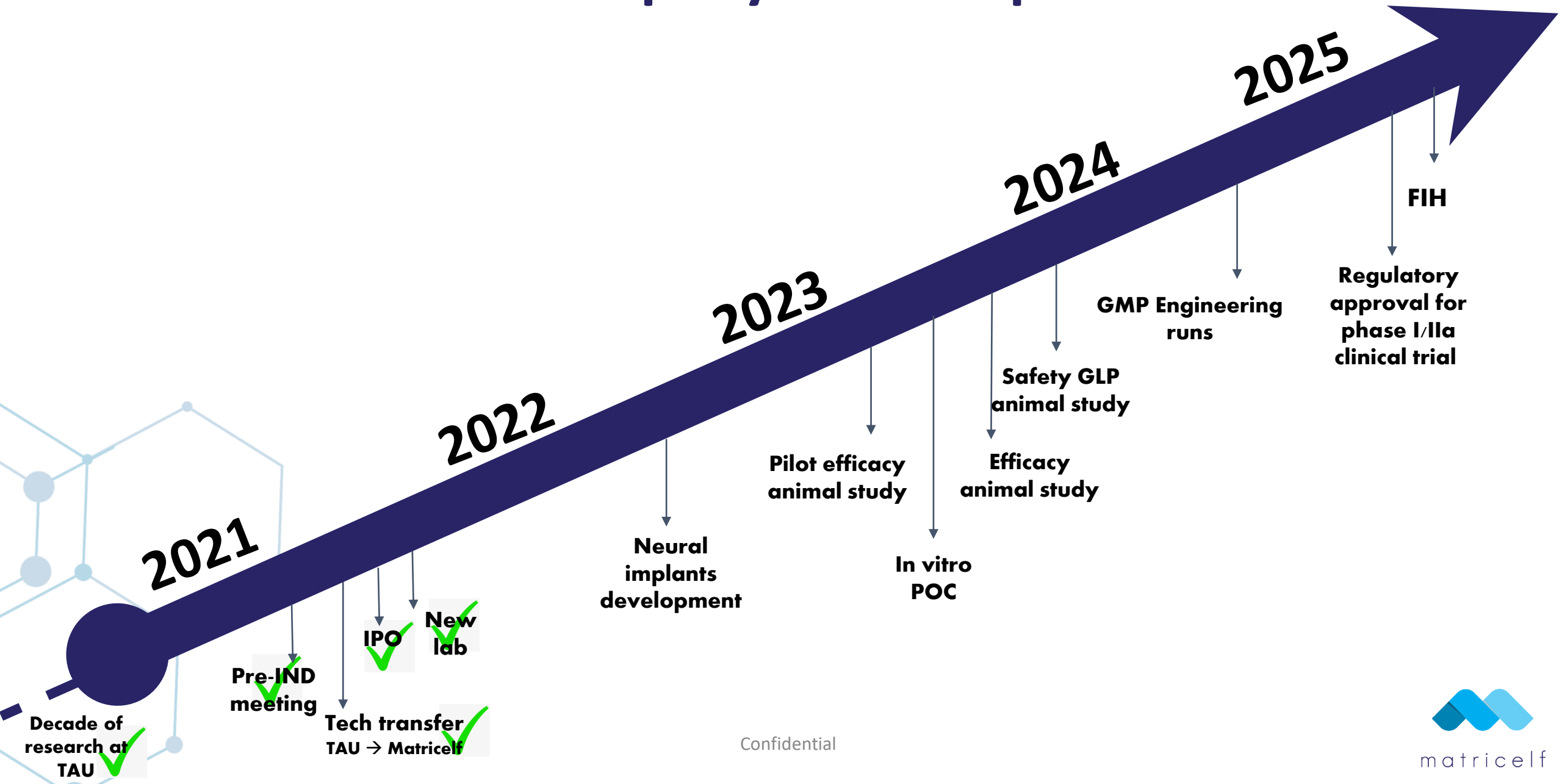
Company Roadmap



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Key Achievements: 2022

- ✓ Development of human hydrogel
- ✓ Development of human iPSC lines
- ✓ Development of human neural implant
- ✓ Usability study in pigs in collaboration with Johns Hopkins Medical school
- ✓ Three granted patents, two new patents application submitted
- ✓ Completed technology transfer of 3D bioprinting support medium from Tel Aviv University to Matricelf
- ✓ MTA with a multinational technology corporation - 3D bioprinting support medium to explore future cooperation
- ✓ PIPE on TASE for ~ USD 6M

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Projected Milestones: 2023

- Completion of pilot efficacy study
- Completion of pilot safety study
- Completion of formulation development
- Initiation of POC efficacy study
- Pipeline broadening – New indication

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The Team

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Summary

Unique advantages	• Autologous treatment • 3D engineered tissue implants (cells and matrix) • Cell/iPSC differentiation within a 3D structure • Support medium enabling 3D bioprinting
Main programs	• Spinal Cord Injury (SCI) • 3D bioprinting
IP status	• 3 granted patents, 7 pending applications, extensive knowhow
Market opportunity	• Address unmet medical need in a multibillion-dollar market
Financial position	• NIS ~33 million in cash and cash equivalents as of December 31st, 2022
Market capitalization	• NIS ~75 million as of December 31st, 2022

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Watch our corporate video at:

https://youtu.be/XUGfveypuAs

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Thank you

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