



Synergies to fuel Researchers' Careers
Luxembourg, 10 – 11 December 2015



10 December 2015 – Parallel Session

Inter-sectoral mobility & employability:

The SME challenge: How to harmonize MSCA training with product development objectives?

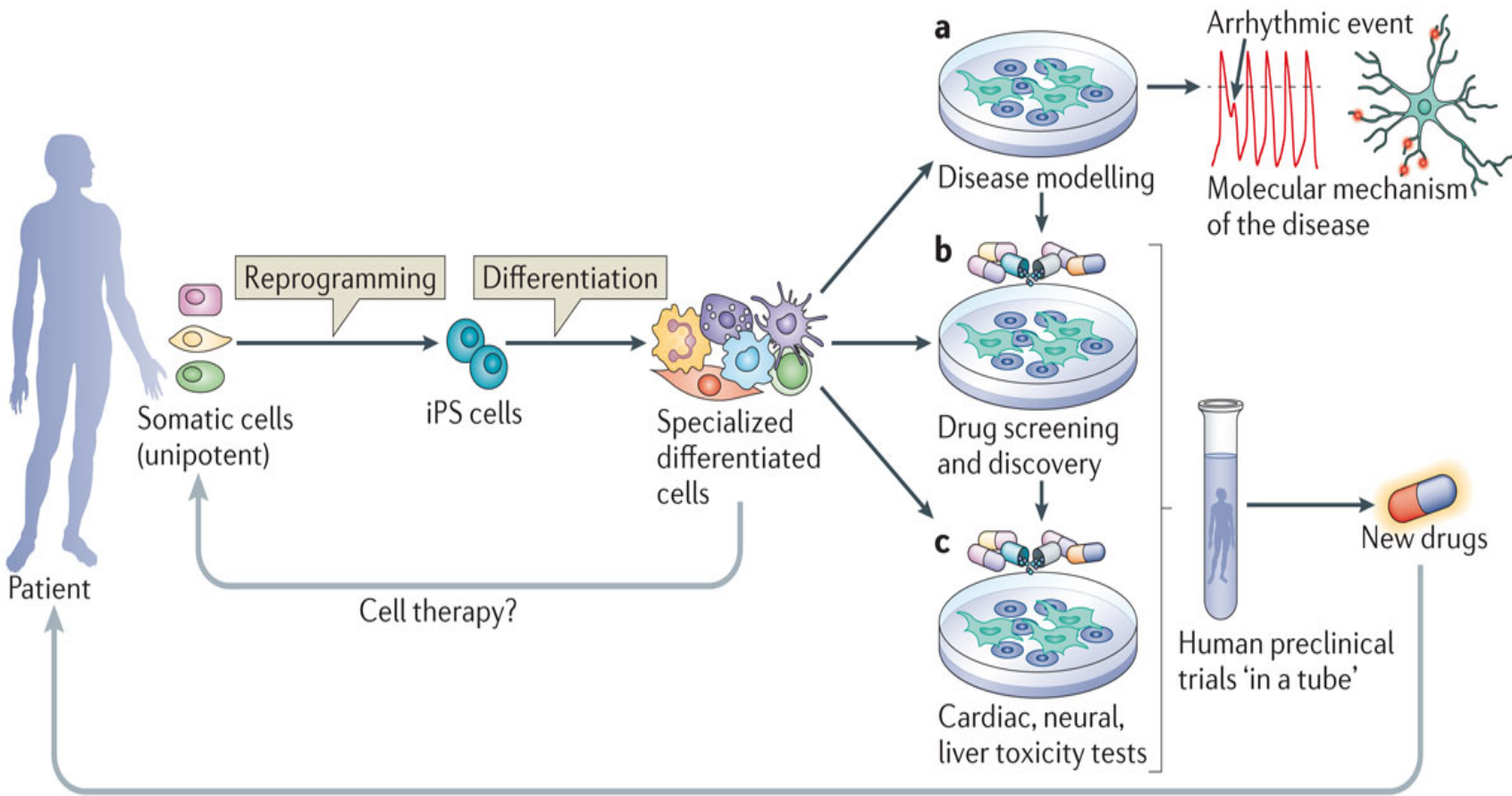
Prof. Dr. András Dinnyés
Founder and General Director
Biotalentum Ltd, Hungary

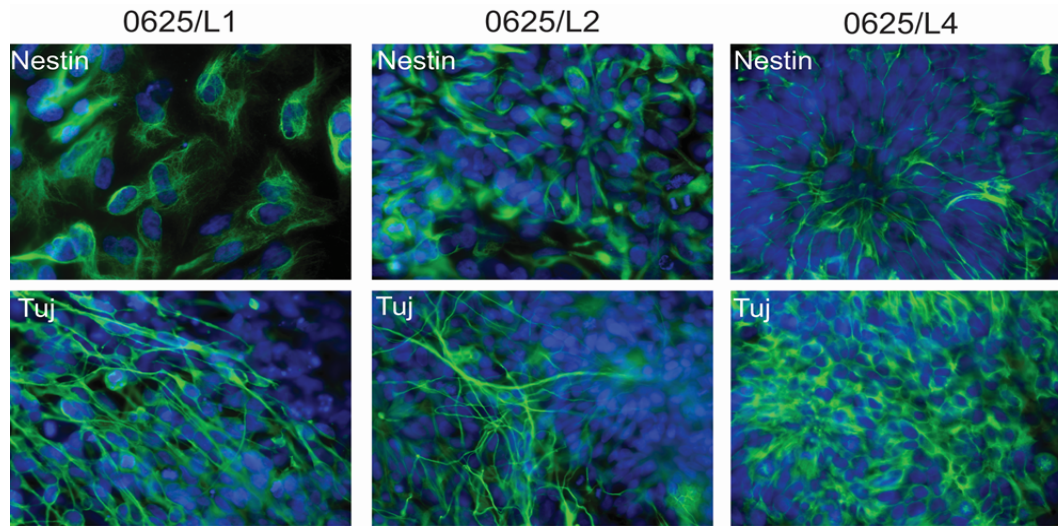


Talentum **Bio** years in biotechnology

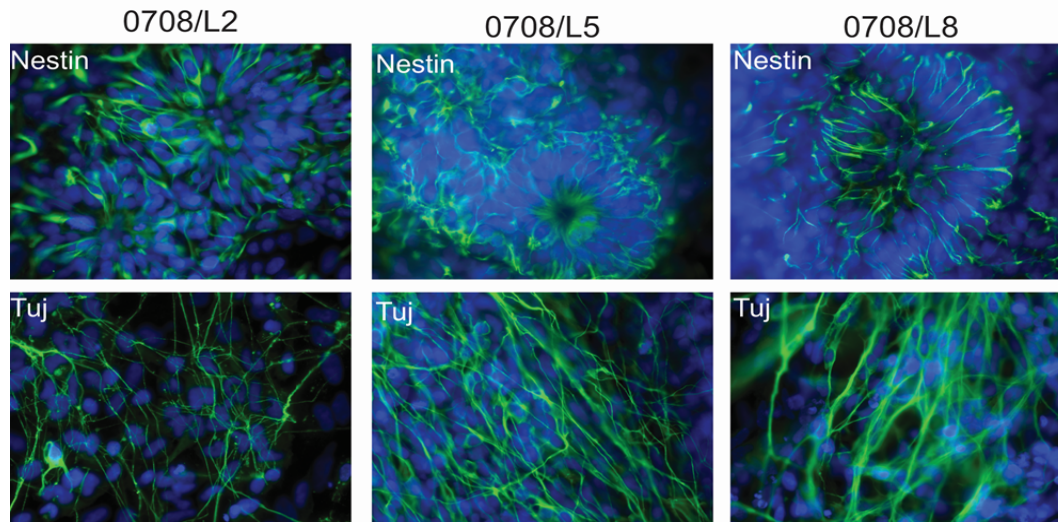
**10 years of progress from
animal models of genetic reprogramming by
nuclear transfer to human iPS cell differentiation,
and beyond..**

Induced Pluripotent Stem Cells - iPSCs

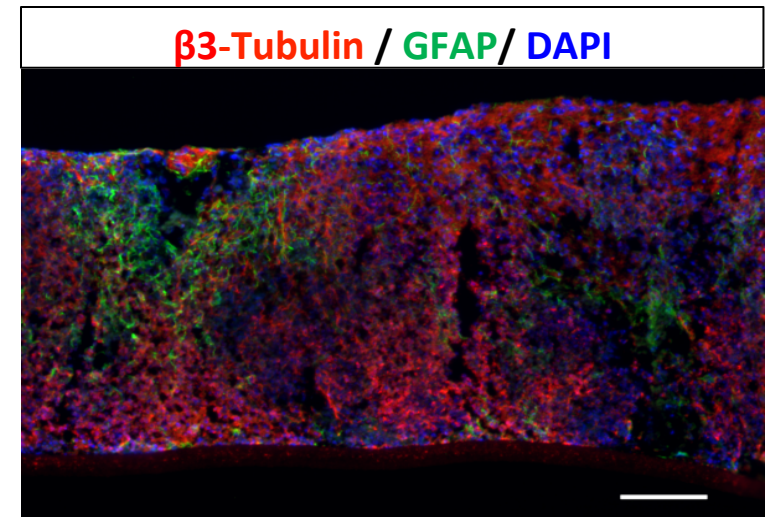




First Hungarian patient –
specific human iPSC
derived neurons (2013)



3D “mini-brain” ENT



WHO WE ARE AND WHAT WE DO

BioTalentum is a leading technology provider in the field of development of **new animal and cellular models, stem cell systems for research, drug testing and toxicology assays.** We provide novel solutions to academia & pharmaceutical/chemical/biotechnology industry.

Services

- 1. Stem cell laboratory services:** Full range of pluripotent stem cell based transgenesis, differentiation, marker analysis of cell lines or pre-implantational embryos; *in vitro* cell based assays and tests from knock-out or transgenic stem cell lines; cellular models
- 2. Animal facility services:** Full transgenic and knock-out mouse generation services with state-of-the-art cryopreservation technologies in SPF conditions
- 3. Molecular and cell biology services and Bioinformatics** (transgenic technologies, datamining, analyses, interpretation)
- 4. BIOTALENTUM CONSULTING:** Branch for training and advisory, grant project writing/management, dissemination

Resources

Human:

- 30 personnel (10 with Phd) at Gödöllő, Hungary

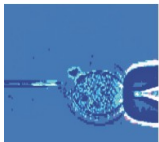
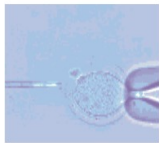
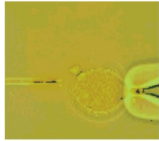
Infrastructure:

- 490 sqm lab and animal facility space at Gödöllő
- Rented facilities at Szeged and Debrecen, HU
- Fully equipped cell culture, molecular biology, embryology and micromanipulation laboratories & SPF mouse facilities

Intellectual property:

- Stem cell and transgenic cell line and animal production technology know-how
- Cryopreservation (vitrification) patent

Strategic aims



- Using **cell biology combined with omics** (genomics, epigenomics, proteomics) and bioinformatics technologies for identifying and validating clinically important therapeutic targets and biomarkers;
- **high-throughput screening** systems to test compound libraries for discovering **new drug leads**
- Developing **complex 3D *in vitro* test systems** to test complex interactions of cell types and lead molecules
- Develop **regenerative medicine** solutions (neural, cardiac & other diseases) – and discover and test small molecules interacting and stimulating the stem cell niche
- ***In vitro* toxicity screen development** using neuronal, cardiac, liver, and other cell types
- Developing **cancer stem cell lines** for drug discovery

Examples of current and previous MSCA projects

BioTalentum is very **active in European research**: research partner in 4 FP6 projects and in 17 FP7 projects; A. Dinnyes in 12 of these as the coordinator

FP7 MC IAPP projects

STEMCAM

ESC, iPSC, mouse, human, cardiac, neuronal

ANISTEM

ESC, iPSC, rabbit, pig, cardiac, neuronal

INDUSTEM

ES and iPSC cells, mouse, human, cardiac

PARTNERS

ES and iPSC cells, mouse, pig

STEMMAD *human iPSC, Alzheimer, neuronal 2D – 3D diff.*

FP7 other MC projects

EpihealthNet (MC ITN)

Mouse, rabbit, human IVF/ diabetes epigenetics

IDPbyNMR (MC ITN)

IDP and differentiation

InduVir (MC IRG)

InduHeart ((MC IRG)

RabpStem (MC ERG)

H2020 MSCA ETN projects

CaSR Biomedicine

NABBA

Academic World

- Main mission: **training**
- Training staff available (often by state funds)
- Doctoral programs and PhD supervisors are available in-house without major additional cost
- Publications are beneficial for the team, and the student
- Retention of trained and “finished” students is not a goal, and not typical to have positions

SME World

- Main mission: **innovation and product development , sales**
- Potential Training staff (post-docs) are expensive
- Doctoral programs at Universities are costly, and need special arrangements to have accepted supervisors from the SME
- **Publications might risk IPR**, need for a proper strategy to balance IPR protection and open access publications
- **Retention** of a well trained student for further carrier is important for SMES, and positions are offered. Brain drain is a major risk for the SME.

Then Why to participate in MSCA programs as an SME?

- Direct and priority access for basic discoveries, innovations
- Benefit of networking with opinion leaders, potential testers, costumers
- Benefit of transfer of knowledge (additional training, technology) via student training and post-doctoral secondments, which would be costly or not available for the SME
- Validation of the SME products in different labs (TRL4-5)
- Validation with equipment not available at the SME
- Publicity value of joint publications

MAIN RISKS:

- Financial losses when cost exceeds the funding, cash flow problems
- Loss of IPR, leakage of protected know-how
- Loss of trained staff, retention problems
- Loss of focus, “forced” academic topics not leading to products

ADVICE:

- Take part in MSCA only for topics which are clearly in accordance with the SME own product development, plan well to profit from the opportunities and be aware of additional costs

Support for MSCA activities via a separate branch

- Independent branch on EU project management and trainings

- (<http://www.biotalentumconsulting.eu/>).



- ✓ Training, dissemination and outreach activities:

- ✓ “My Science”- European Programme for Young Journalist, FP7, EURAC, Bolzano, IT
- ✓ ITN trainings on self-development, business development, ethics, networking
- ✓ Researcher’s Night, mentoring “Talent Agora”, and other talent Programs
- ✓ Meet the Scientist – MISZ

MSCA 2015 - LUXEMBOURG



Collaboration possibilities:

- **H2020 projects as provider of basic and preclinical models of human cells and knock-out mice (CRISPR)**
- **Project submission and management consulting**



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