



nTRACK

Multimodal nanoparticles for structural & functional tracking
of stem cell therapy on muscle regeneration



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n-TRACK responds to the need of tools to evaluate and predict the safety and success of cell-based treatments in earlier stages.

The current lack of methods providing real-time tracking of transplanted cells and knowledge on their early biodistribution and viability, is one of the major weakness of the available cell-based treatments.

Multimodal nps for structural & functional tracking of stem cell therapy on muscle regeneration

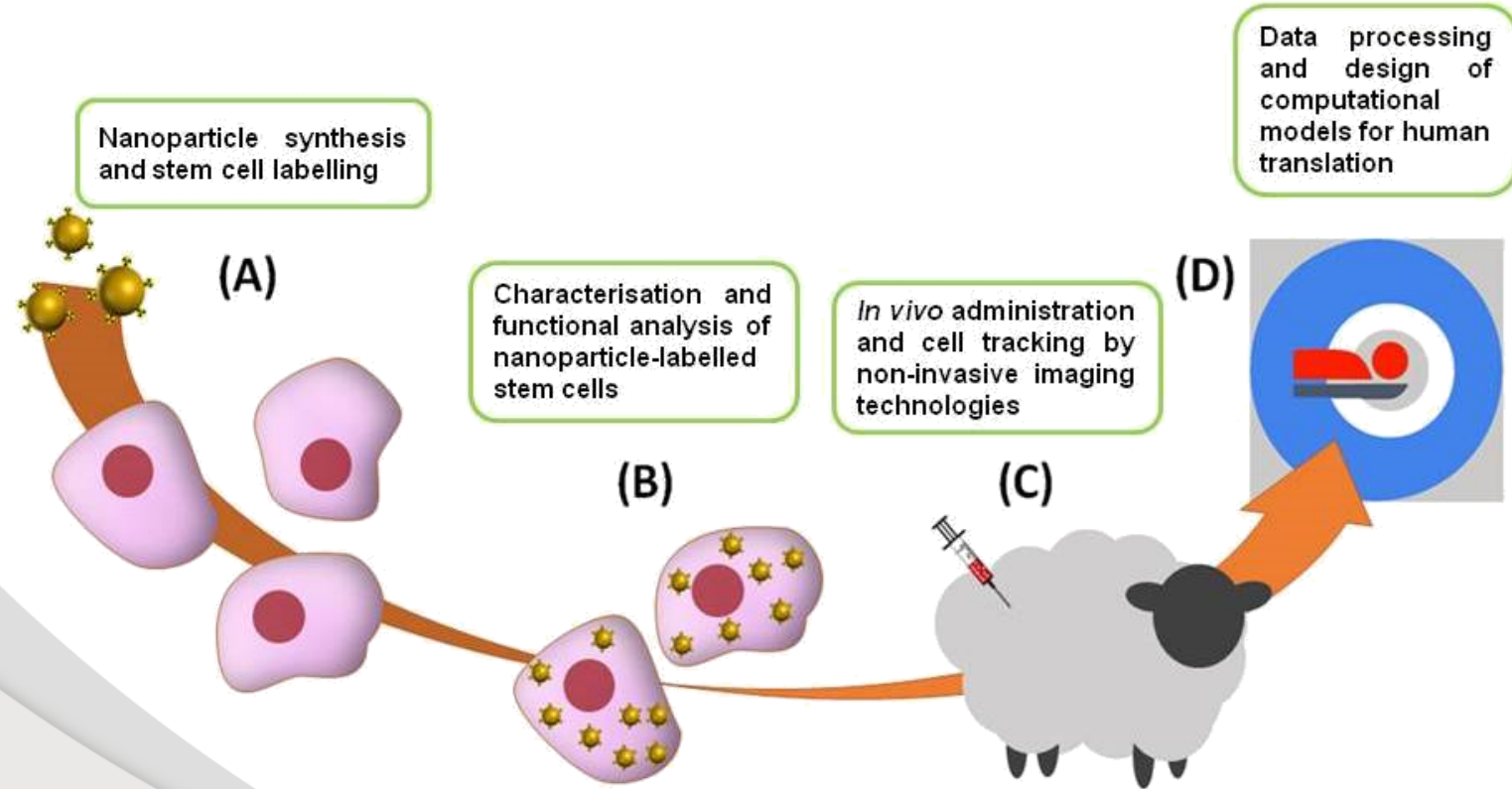


Non-invasive monitoring of the entire body, longitudinal and quantitative discrimination of living stem cells in humans.









Safe, scalable and highly sensitive multimodal cell nano-imaging agent ready for testing in humans.





What type of nanoparticles

<p><i>nTRACK</i> nanoparticle</p>	<p><i>Magnetic core - MRI image enabling.</i> <i>Gold shell - CT image enabling.</i> <i>Glucose coating - high cellular uptake efficiency;</i></p>	 <p><i>nTRACK nanoparticle</i></p>
<p>Radiolabelled nTRACK nanoparticle</p>	<p>  Magnetic Core  Gold Coating  Glucose  Radioactive molecule + radio-nucleotide - PET image enabling; </p>	 <p><i>Radiolabelled nTRACK nanoparticle</i></p>



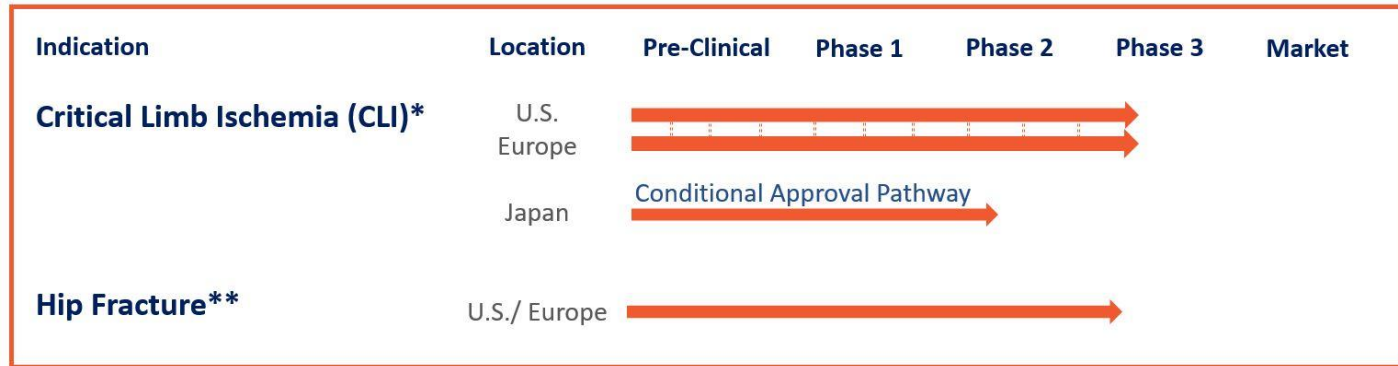
Bar-Ilan University



GMP NP scale-up
(non radioactive)

PLX-PAD

PLacental eXpanded (PLX) cells are placenta-derived, mesenchymal-like adherent stromal cells. PLX-PAD are in clinical phase III



Imaging technologies for cell tracking

Small animal models
(mice/rat)



Large animal model
(Sheep)



CT PET MRI SPECT

- Regulatory strategy roadmap
- Consultations with the EMA
- Compilation of regulatory draft documentation to support FiH
- Disseminating regulatory lessons learnt to relevant authorities and other stakeholders with the aim of reducing regulatory barriers for this technology



National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport



- Intracellular fate and exocytosis of nTRACK nanoparticles
- In vivo toxicity/toxicokinetic studies in rodents
- GLP compliant preclinical safety regulatory studies
- Safety assessment of the nTRACK NP production, cell labelling processes and end-of-life

RTO	ES	LEITAT Technological Center
RTO	GR	National Center for Scientific Research "Demokritos"
RTO	ES	Vall d'Hebron Institut de Recerca
RTO	NL	Dutch National Institute for Public Health and the Environment
SME	IL	Pluristem Therapeutics Inc
SME	DE	MyBiotech
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SME	ES	Asphalion SL
SME	UK	Cambridge Nanomaterials Technology Ltd.
University	IL	Bar-Ilan University
University	DE	Johannes Gutenberg University Mainz





A large version of the n-TRACK logo, centered on the slide. It consists of a stylized 'n' made of orange dots, a small dot, and the word 'TRACK' in grey, with the 'K' in orange.

**MULTIMODAL NANOPARTICLES FOR STRUCTURAL &
FUNCTIONAL TRACKING OF STEM CELL THERAPY ON
MUSCLE REGENERATION**