



The scientific approach to safer and most advanced pigments in Tattooing

Challenges during the past years at ECTP Congress



- Use of old and outdated reports and data
- Use of myths and stories about tattoo pigments in 2019 (Mercury in reds and MRI complications, leprosy etc.)
- No proper communication between artists-manufacturer and challengers of the tattoo industry
- The industry being seen as uneducated and rebellious against regulations
- Not enough scientific data directly relating to tattoos in Human skin instead of animal data
- The belief by authorities that the industry does not want to conform or be regulated
- Not proper documented research documents about safety and use by pigment manufacturers
- Misunderstanding about proper concentration, placement and importance of wound healing
- Regulators make erroneous conclusion without using scientific data specific to tattooing

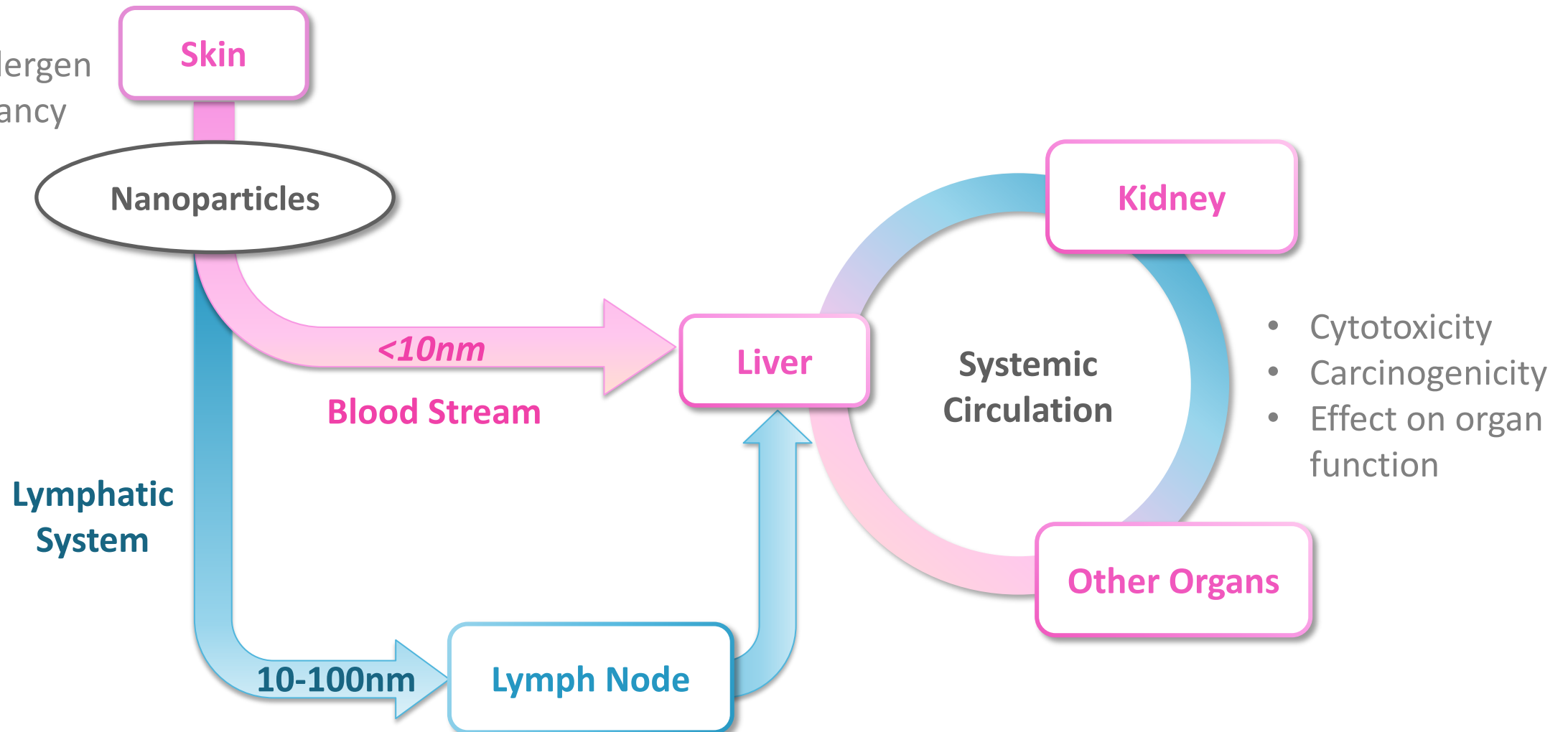
INTENZE products always at the forefront of innovation and change



Skin Tattoos: Through the Skin and Beyond, Impact on Human Health

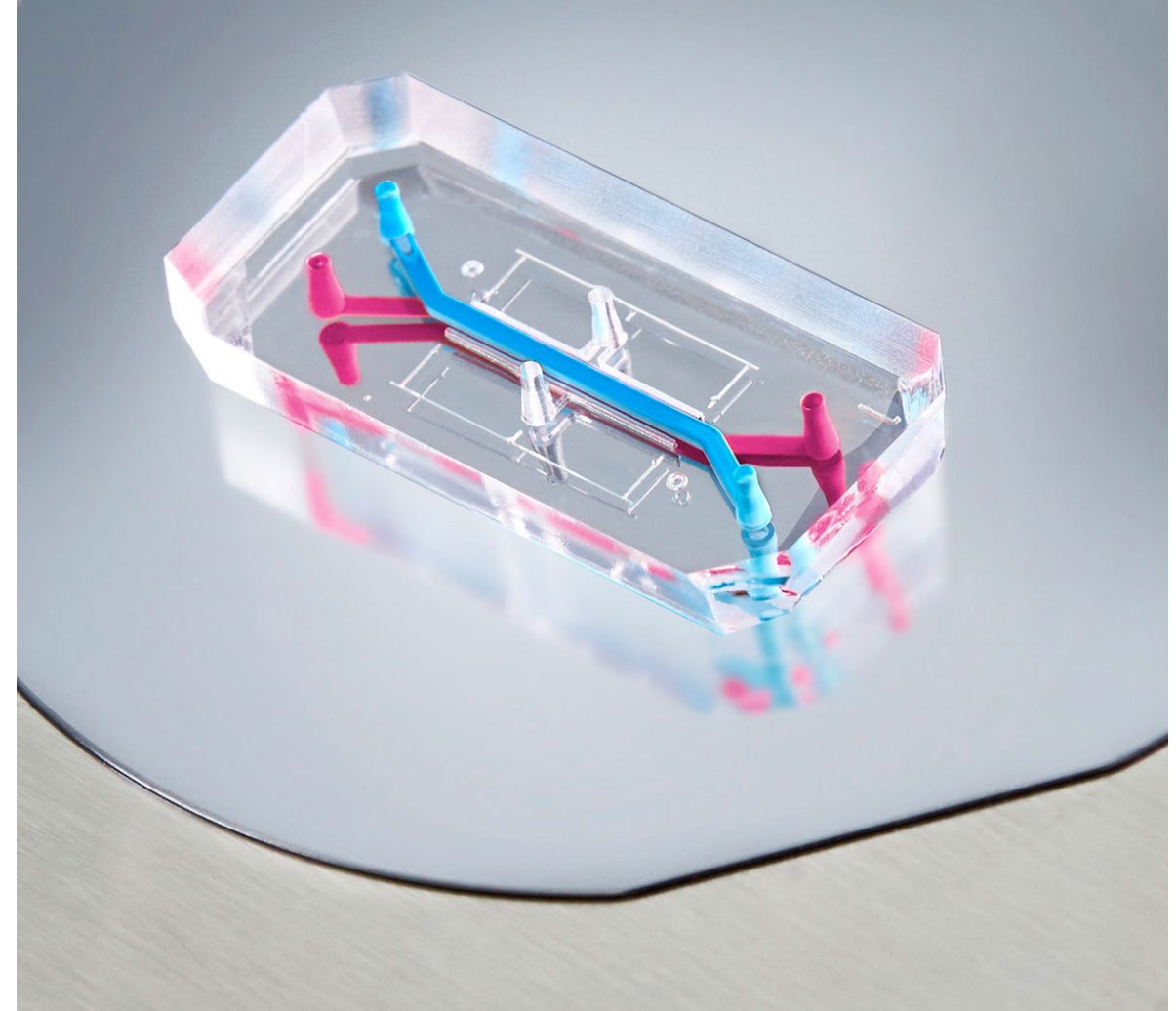
Tattoo Safety – Bioavailability and Systemic Exposure

- Cytotoxicity
- Phototoxicity
- Sensitization/allergen
- Corrosivity/irritancy
- Carcinogenicity



Strategy

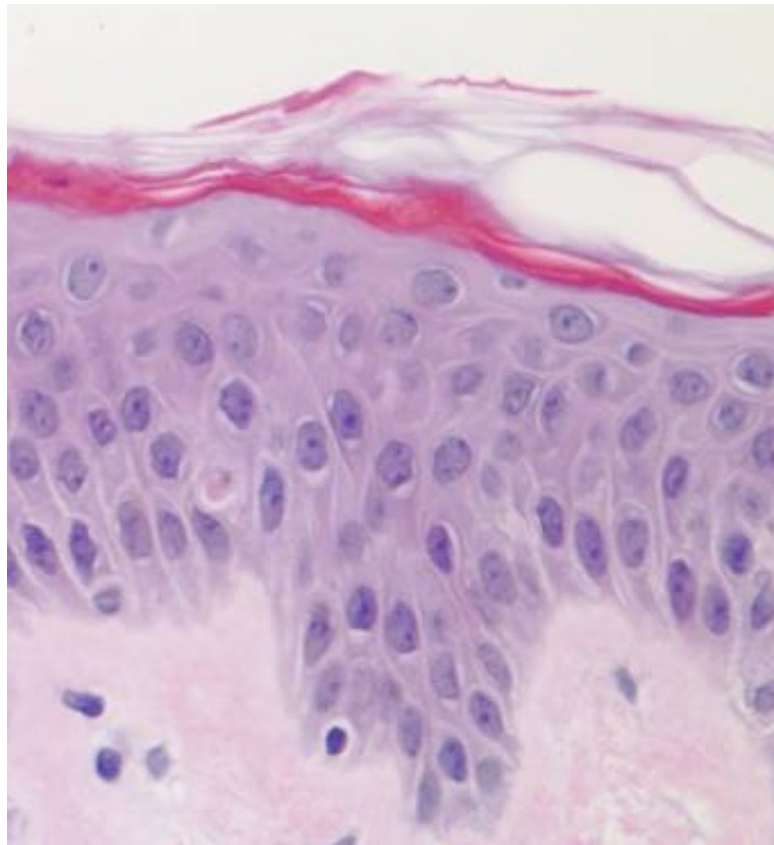
- To use Emulate's skin-chip to establish a better understanding of the cell biology associated with tattoo pigments
- To use Emulate's skin-chip as a model for assessing skin and systemic safety of tattoo pigments without the use of animal models
- To work with regulatory agencies to develop the data sets needed to establish safe parameters for tattoo pigments and their application
- For Intenze to use Emulate's technology to drive "science centric" product development



Skin-Chip

Recreating Native Human Skin

Human Skin



Stratum Corneum

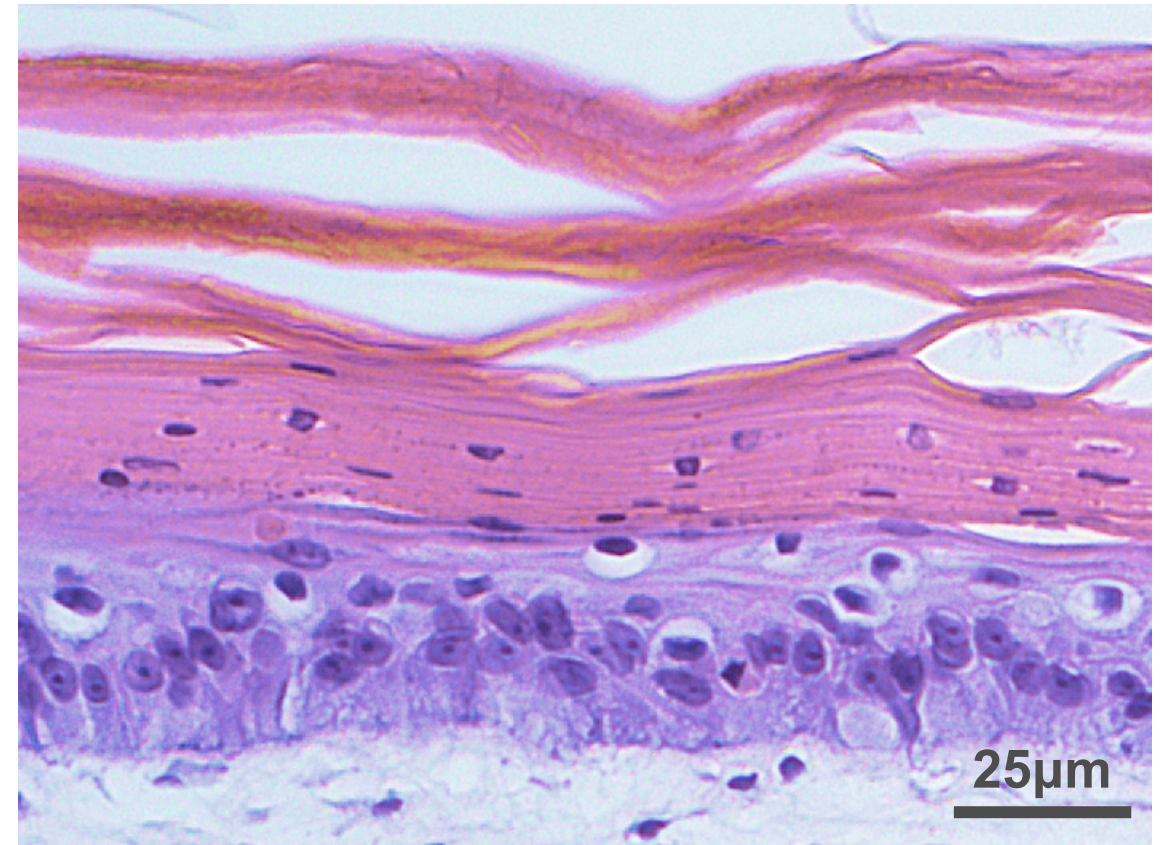
Stratum
Granulosum

Stratum Spinosum

Stratum Basal

Dermis

Skin-Chip

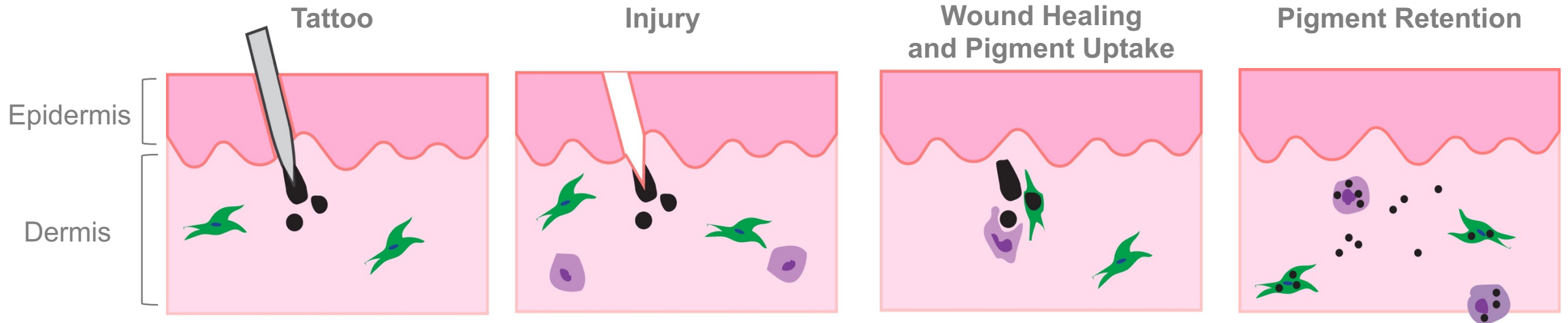


25µm

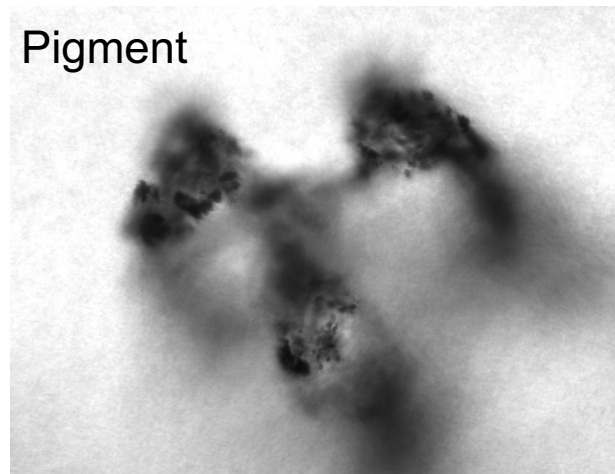
- Emulate's skin-chip recreates and continuously reproduces major features and cellular functions of the human skin
- Emulate is refining its model to provide greater depth into the biology of the skin including effects of immune cells, adipose tissue, mechanical forces, and eventually microbiome.
- To-date Emulate's skin-chip model offers an animal alternative that has been shown to be effective in understanding mechanistic biology and safety, as well as, the potential to gauge systemic safety concerns.

A large graphic with the word "SAFETY" in blue, outlined letters. A blue circle is partially around the "S". Below "SAFETY" is the text "IS OUR CORE VALUE" in blue, outlined letters.

Skin Tattoo using Pigments and Fluorescent Beads



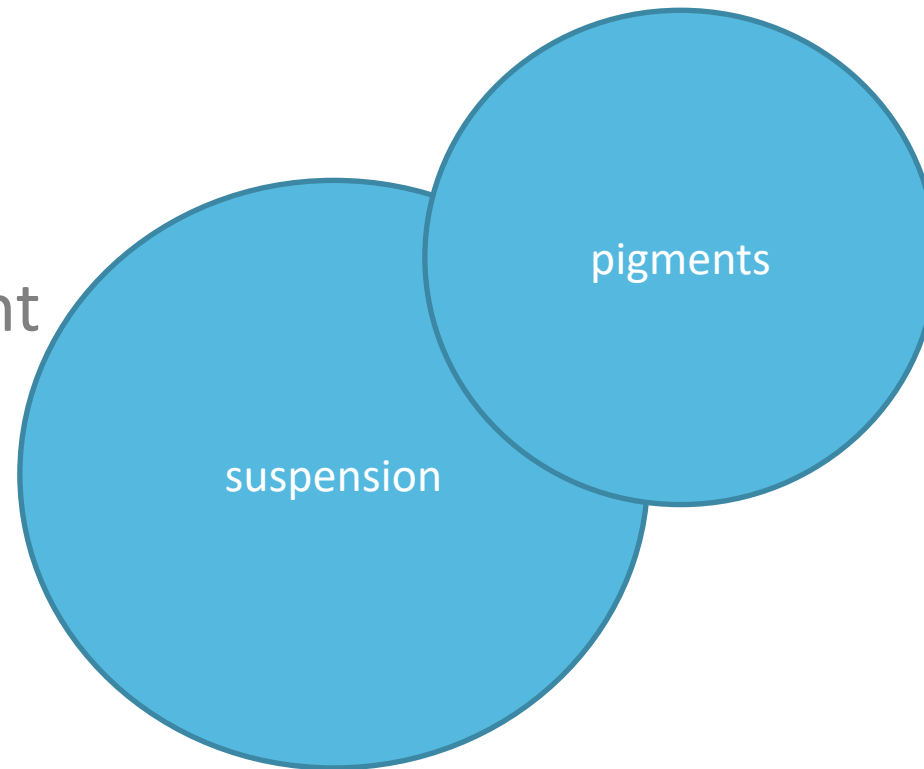
Tattoo on Skin-Chip / Top View



Wound healing cascade and pigment retention in Skin-Chip assessed using Tattoo pigments and Fluorescent beads (size effect)

- We plan to use the skin-chip to assess optimal particle size for the our pigments in order to create pigments that provide better safety profiles and longer lasting performance.

- Particle Size
- Formulation combination
- Optimizing pigment amount
- Creating perfect stability



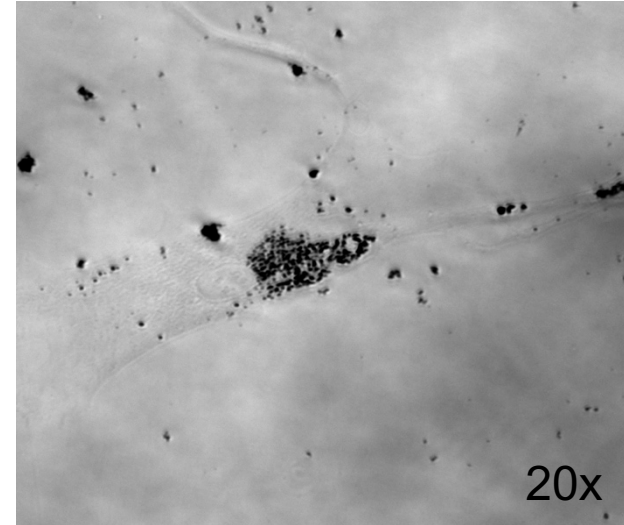
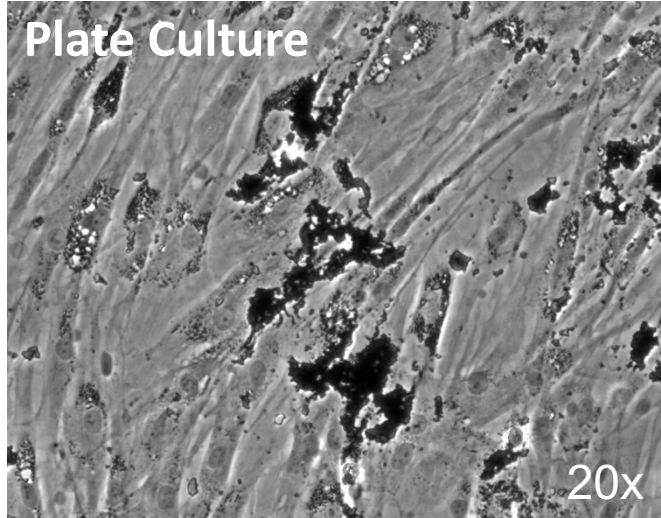
Highly improved Public Health and Safety and better stable product for the artist

Tattoo Permanence: Pigment Uptake by Dermal Fibroblasts

Fibroblasts contribute to tattoo permanence by engulfing foreign particles

2D Plate Culture

Carbon Black

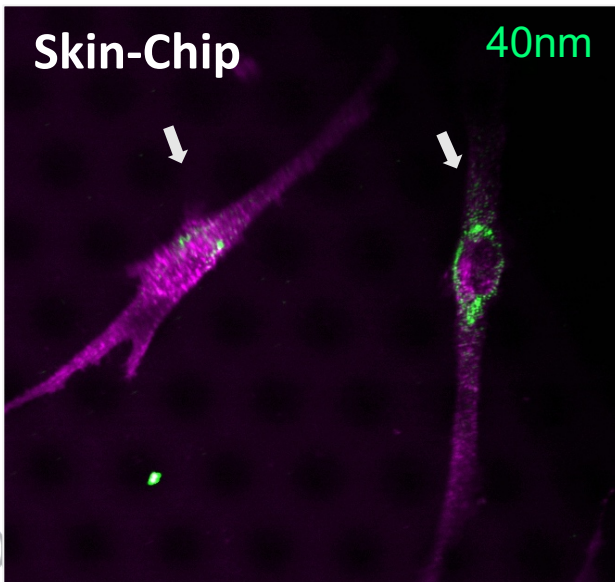


Fibroblast actively uptake
and retain tattoo pigments
and fluorescent particles
of *all* size ranges

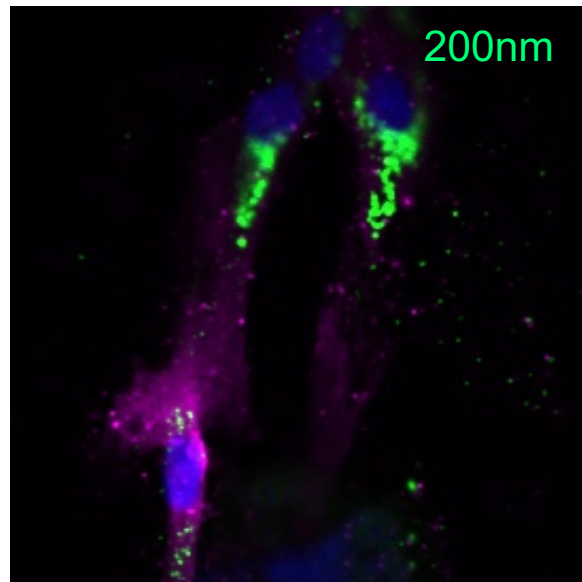
3D

Skin-Chip

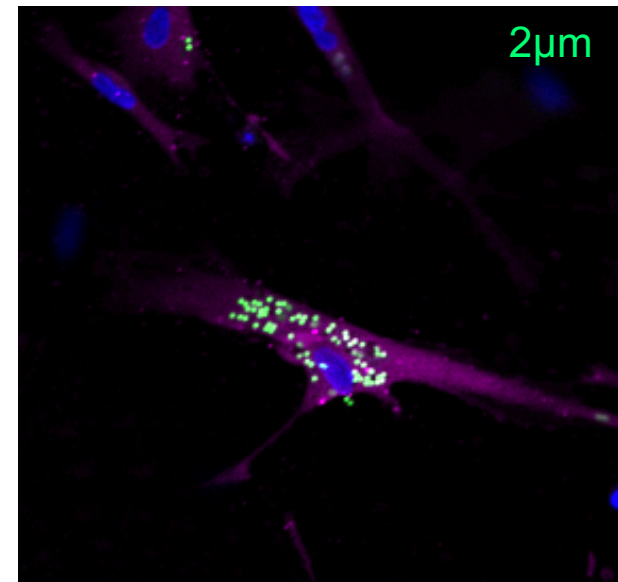
40nm



200nm

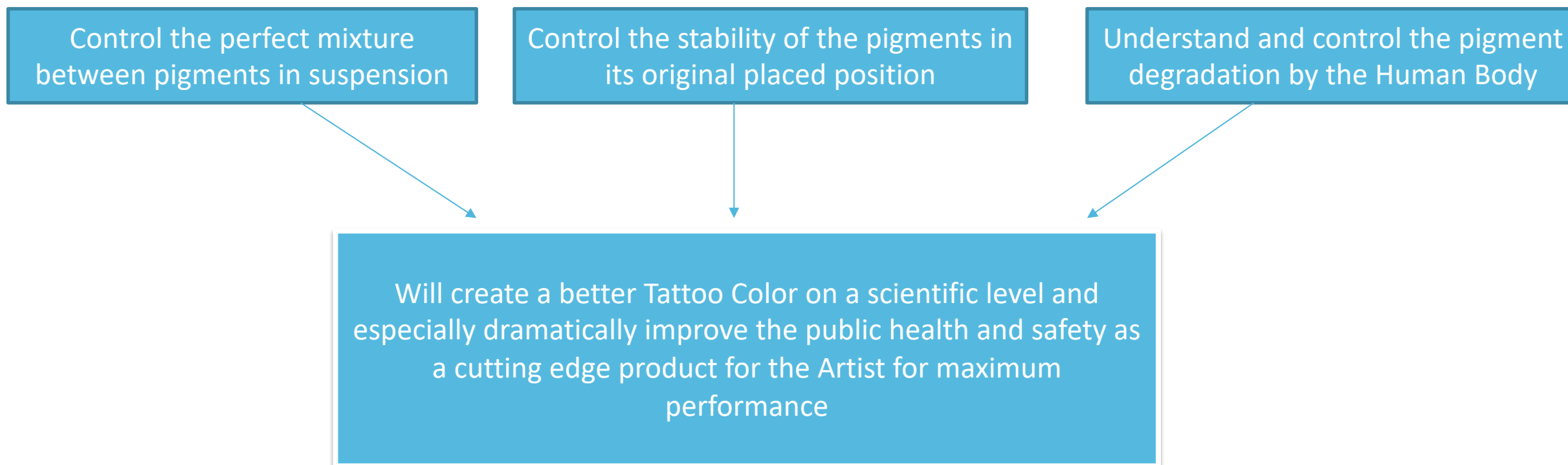


2μm



Fluorescent
Beads

- We plan to use the skin-chip to assess interactions with skin cells and immune cells in order to optimize residence and longevity in the skin while minimizing systemic exposure and safety concerns.



Strategy

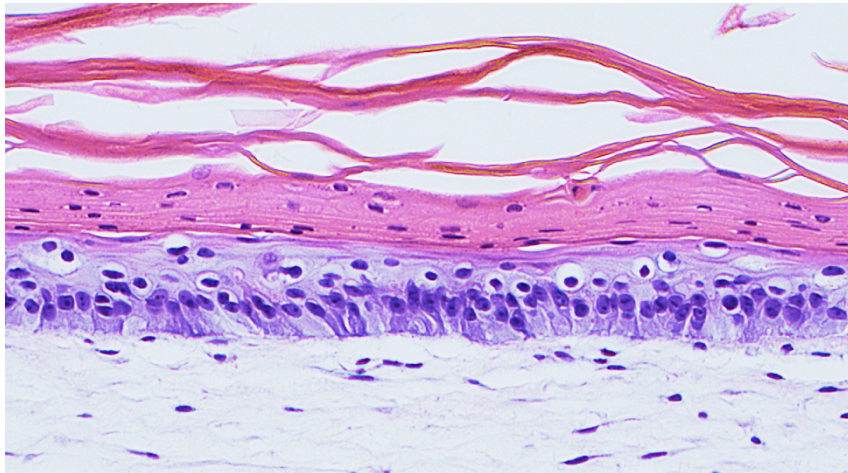
- We plan to use the skin-chip to assess how to best minimize wound trauma and scarring at the tattoo sight, as well as, develop ink formulations that speed healing and minimize safety concerns.



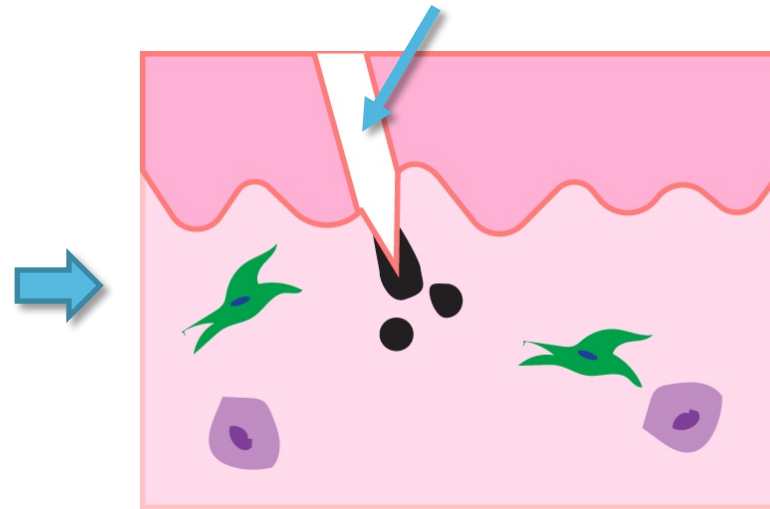
Skin-Chip: Recapitulating Human Skin Function – Wound Healing

The Skin-Chip demonstrates for the first time wound healing capabilities in an *in vitro* human skin model, recreates physiological response to tattoo injury through a cascade of immune response, cell activation and migration, and ECM remodeling

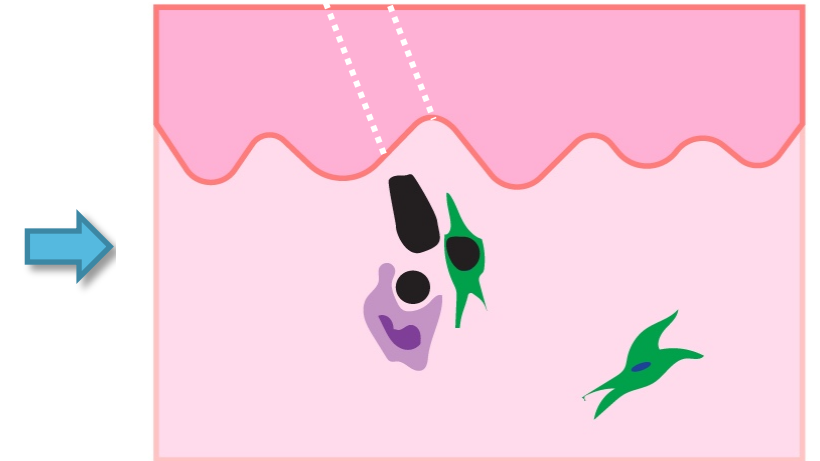
Healthy Skin-Chip



Tattoo Injury

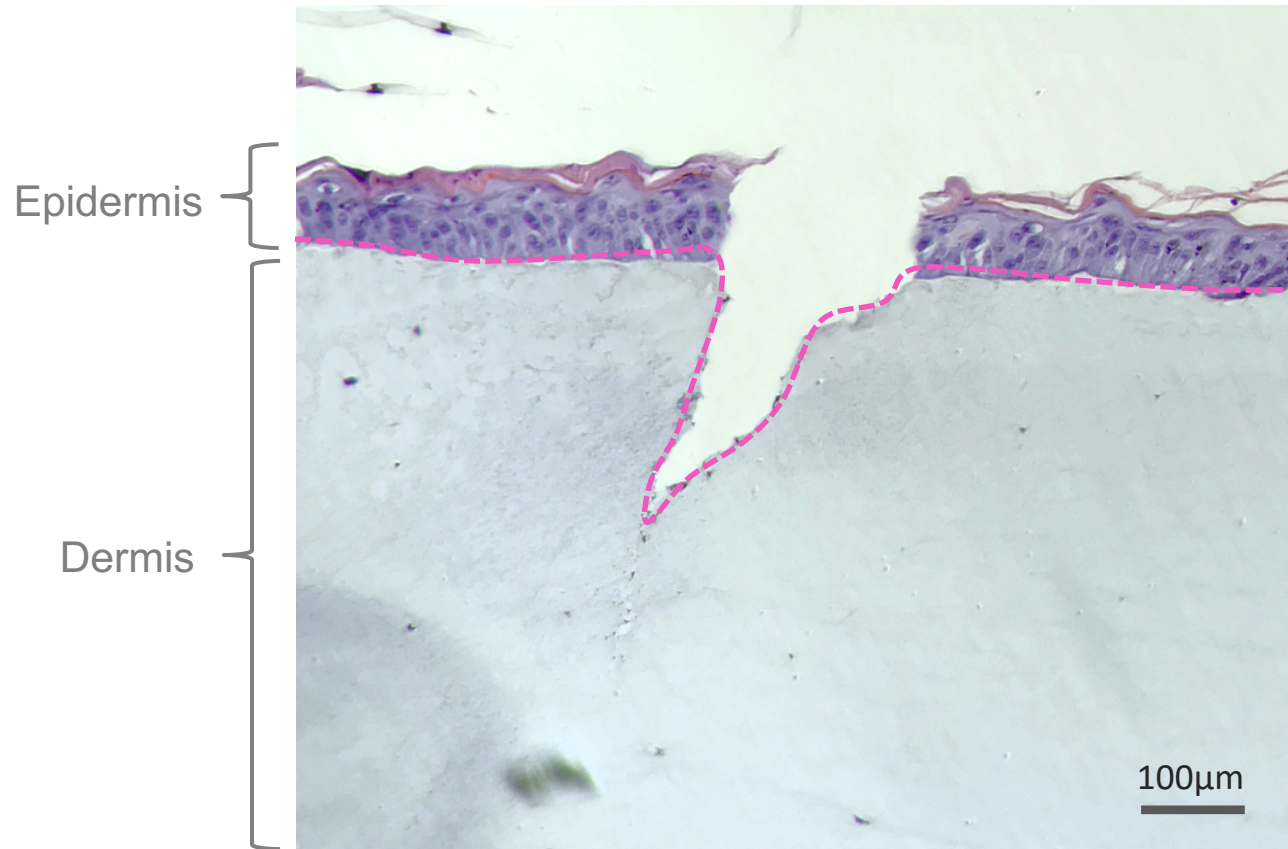


Wound Closure

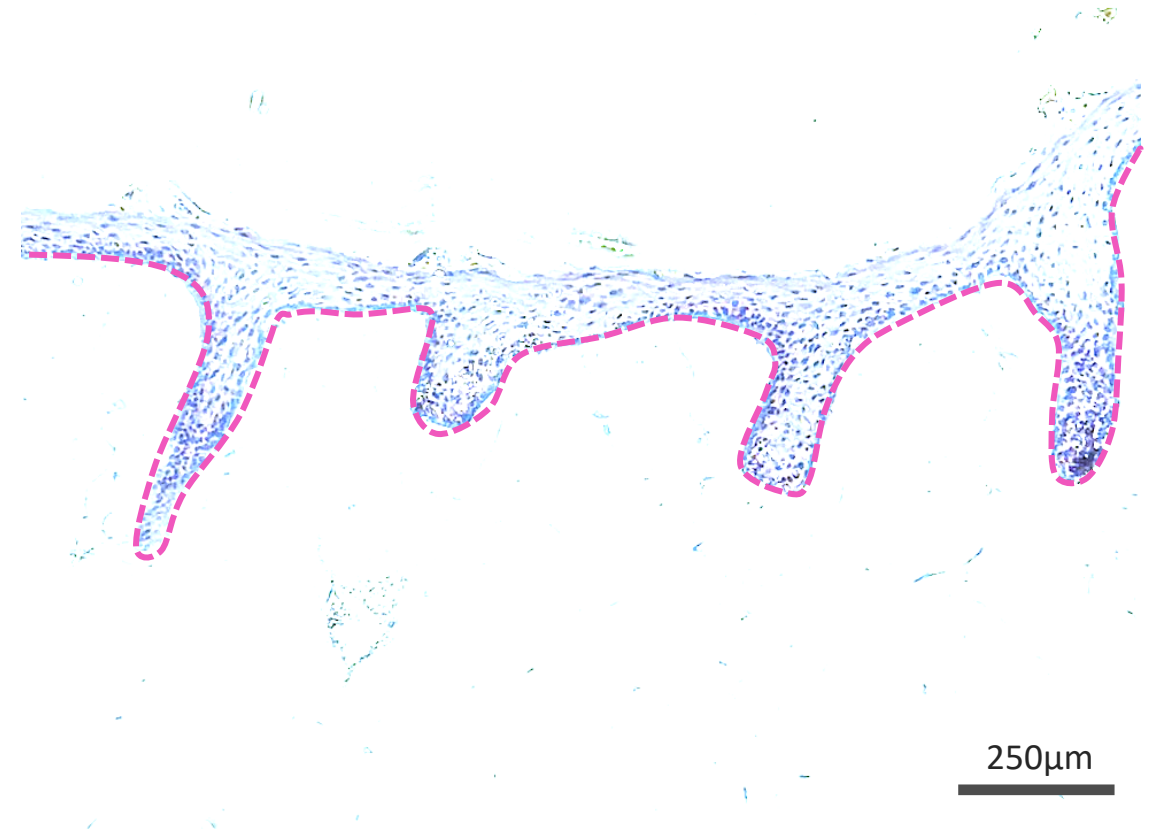


Skin-Chip Shows Wound Healing Following Puncture Wounds

Day 0 – Tattoo Injury



4 Days Post-Tattoo
Wound Closure



Skin-Chip is able to heal through epidermal and dermal remodeling of wound site

Intenze manufacturing has been with March 22nd 2019 officially been certified to operate under ISO 9001:2015
And ISO/TR 22971:2005 guidelines as the first of its kind in Tattoo ink manufacturing

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