



LUMINATE

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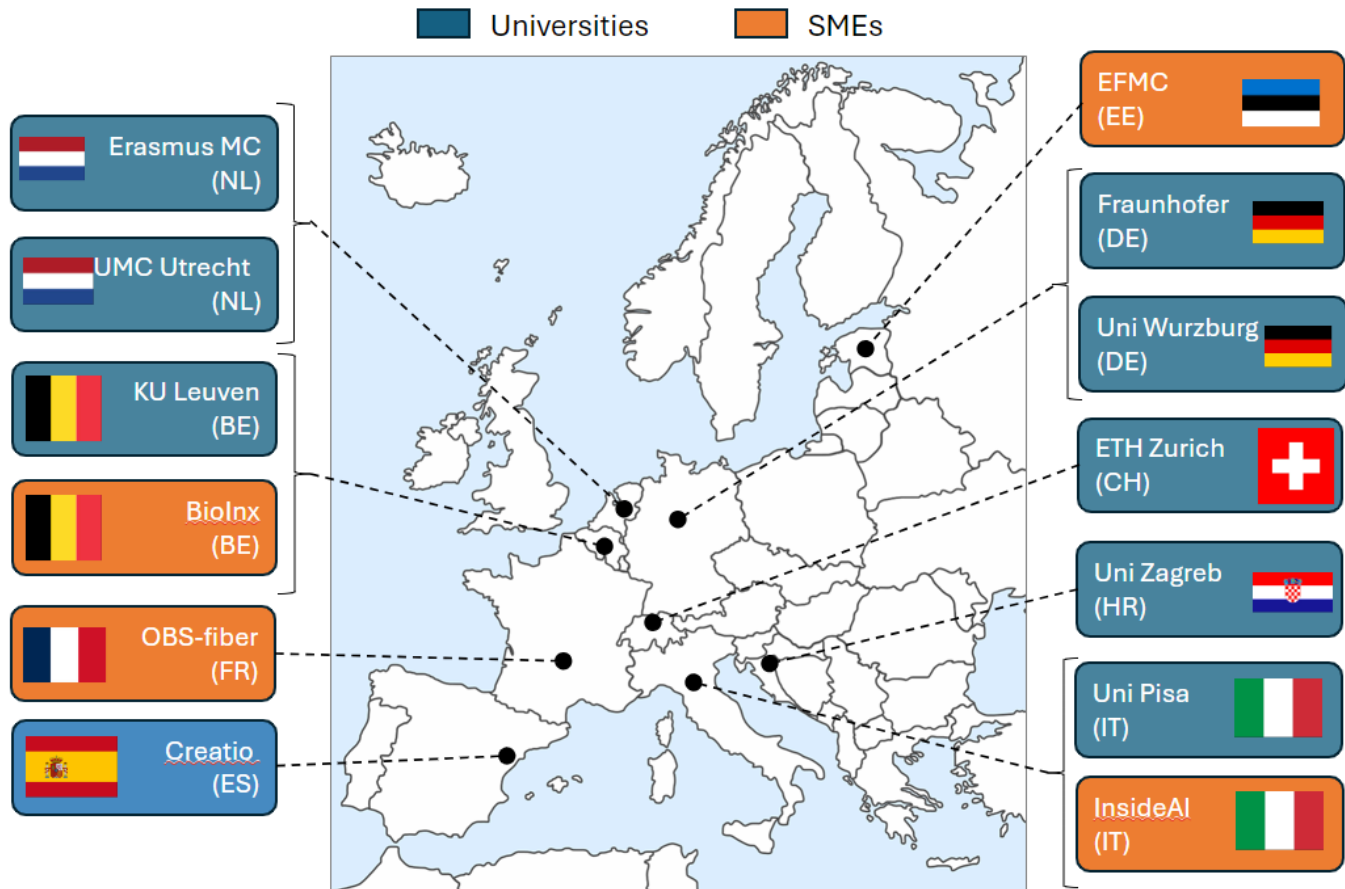
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Osnovne informacije

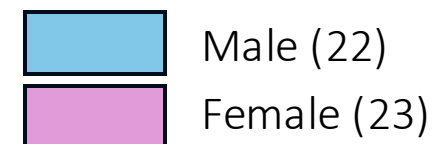
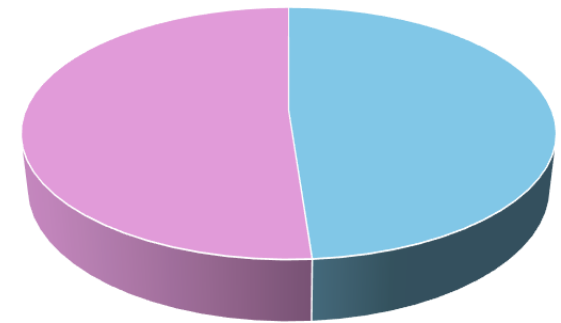
- **Naslov projekta:** Lighting the way towards in situ osteochondral regeneration through microextrusion and filamented light bioprinting (LUMINATE)
- **Ugovorni broj:** 101191804
- **Poziv:** HORIZON-HLTH-2024-TOOL-11
- **Početak:** 01/01/2025, **kraj:** 31/12/2028
- **EU sredstva:** €7,459,148.75

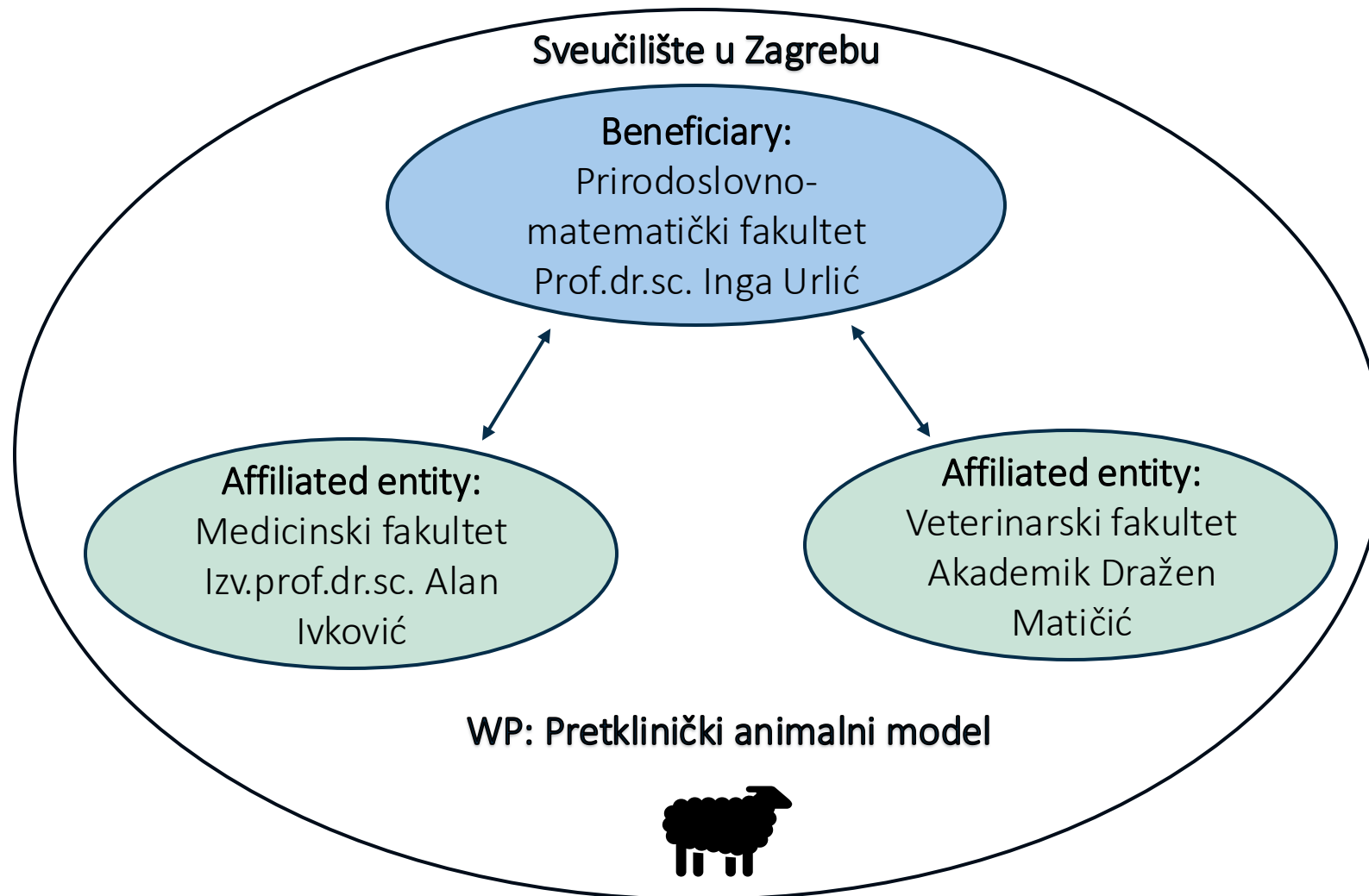
Konzorcij projekta



Key figures:

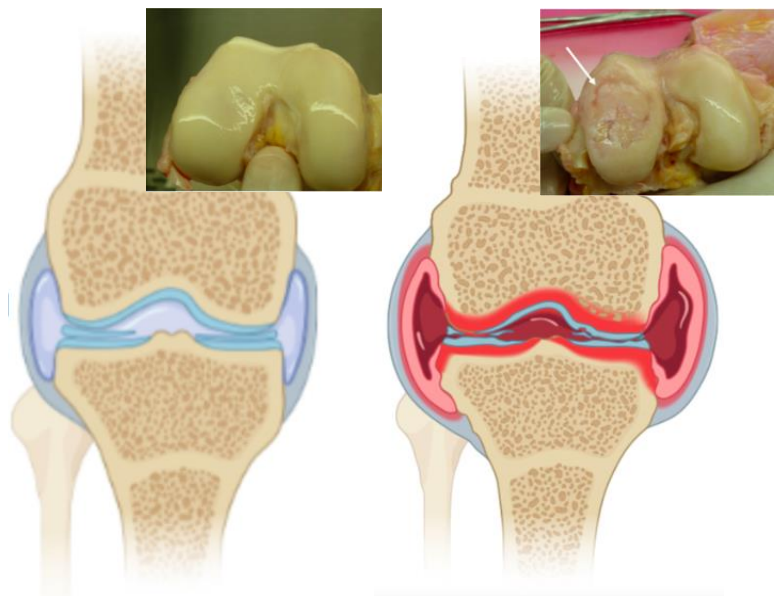
- 15 partners from all over EU
- Gender balance among researchers and WP leaders



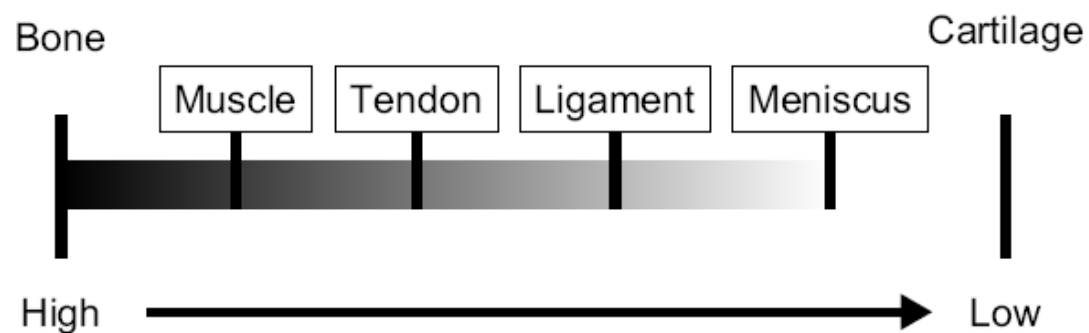


Akutne osteohondralne ozljede

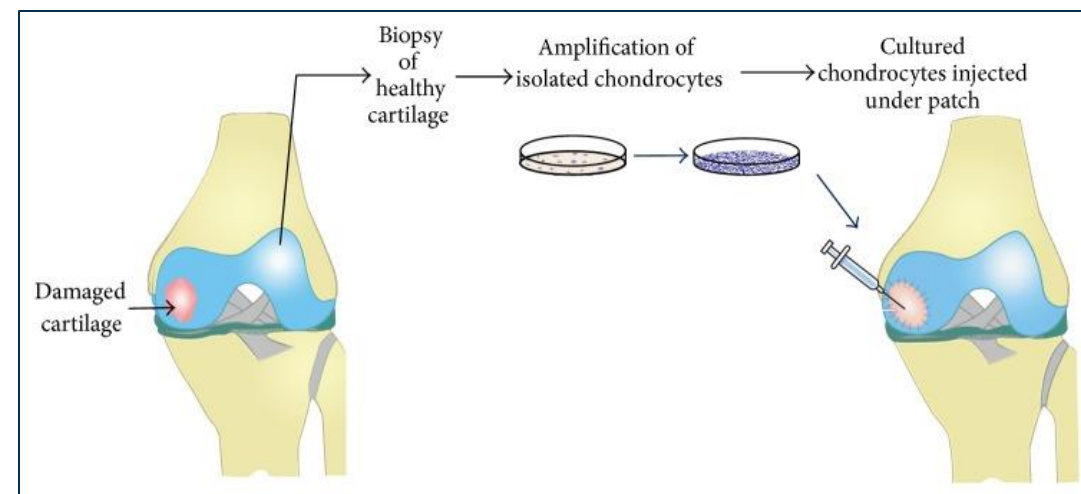
- Traumatske ozljede osteohondralnih tkiva uzrokuju bol, funkcionalno oštećenje te povećan rizik od razvoja posttraumatskog osteoartritis i pridruženih komorbiditeta.



The spectrum of regeneration potential of musculoskeletal tissues



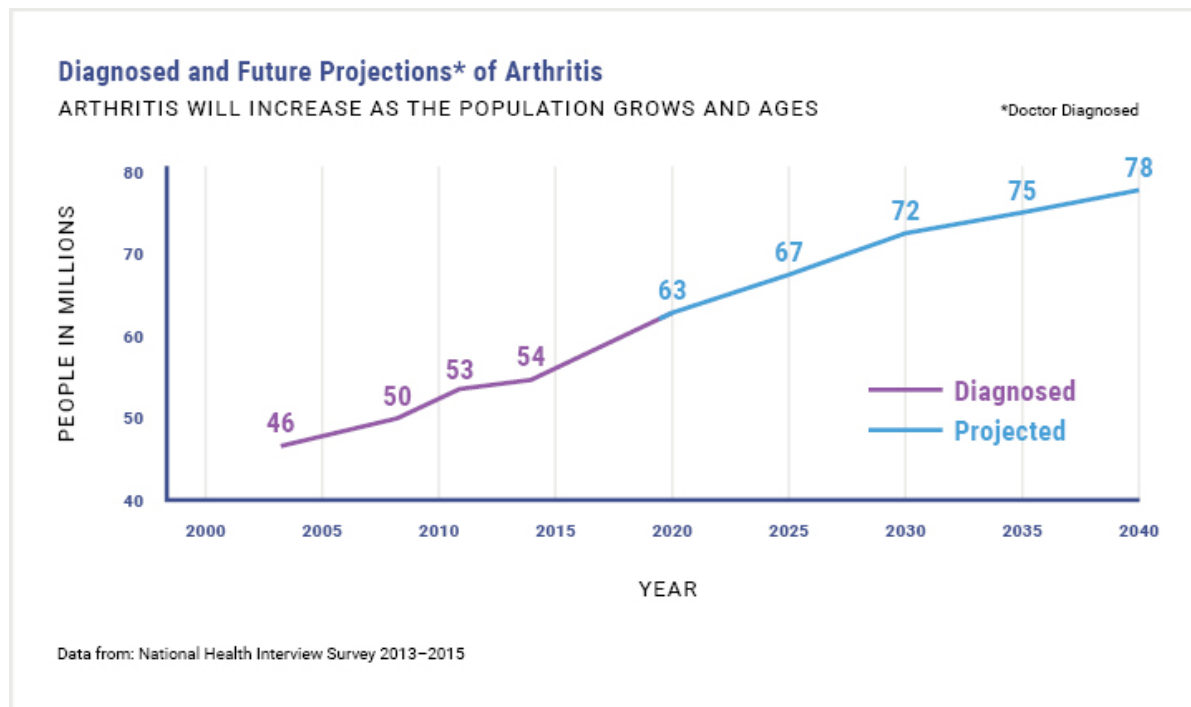
- Palijativne (gubitak težine, fizikalna terapija, sistemski analgetici)
- Neregenerativne (hondralno brijanje, debridman, lavaža zgloba)
- Regenerativne/reparativne (mikrofrakture, artroplastika koljena, MFAT, PRP)
- Transplantacijske (osteohondralna transplantacija, mozaikplastika i MACI/ACI implantacija hondrocita) →





Nedostaci transplantacijskih tretmana

- Tretmani temeljeni na graftovima bez stanica ili staničnim terapijama, skupa su i ograničene dostupnosti
- Rizik od revizije ovih implantata neprihvatljivo je visok kod mladih aktivnih pacijenata
- Nužno je razvijanje boljih strategija liječenja akutnih osteohondralnih ozljeda





Predloženi koncept liječenja oštećenja hrskavice u jednom koraku

Stanice

Biomaterijal

Dostava

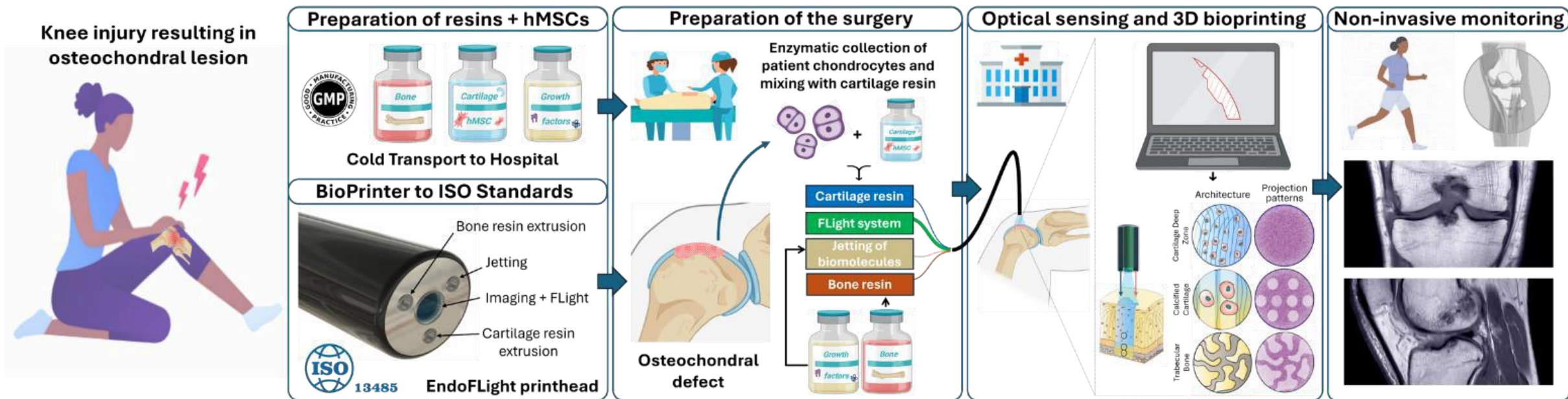
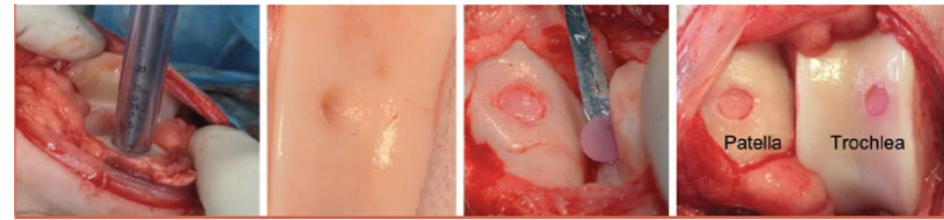
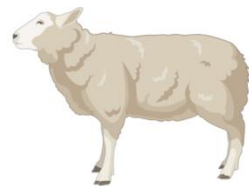
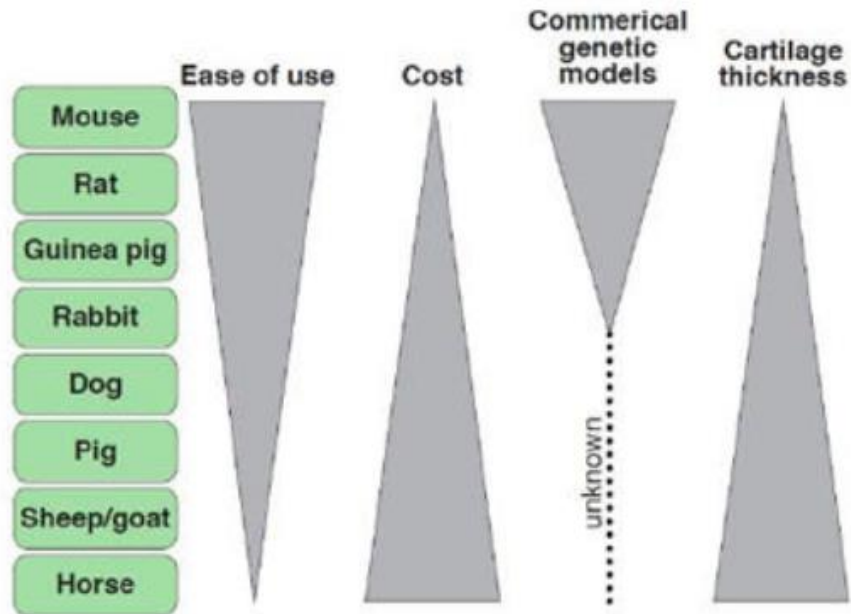
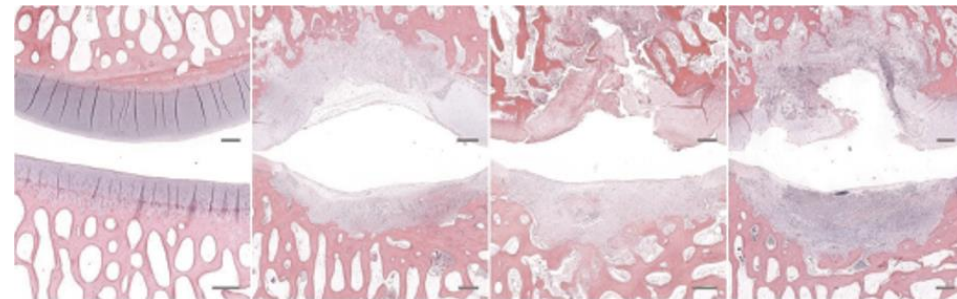


Figure 1.1. Overview of the LUMINATE approach.

Pretklinički animalni model

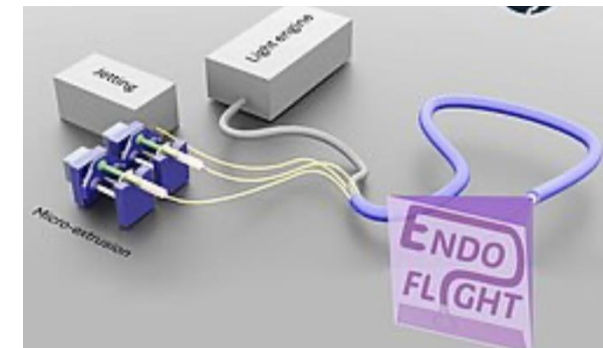
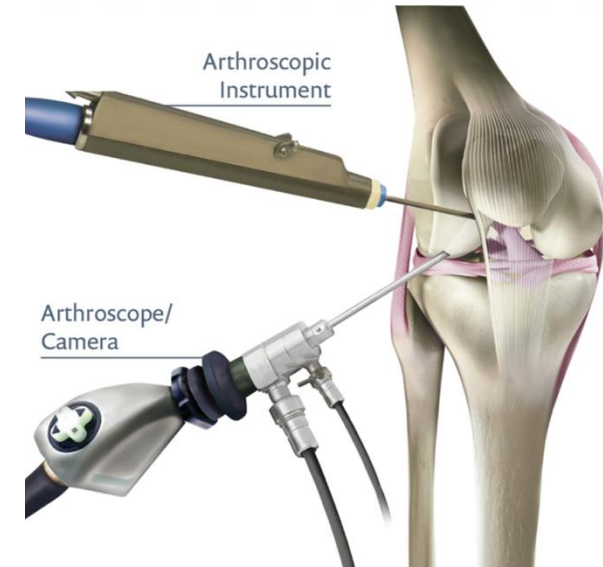


Treatment



Analysis

- LUMINATE predlaže jednokratni regenerativni pristup za liječenje velikih osteohondralnih lezija
- LUMINATE razvija naprednu *in situ bioprinting* jedinicu nazvanu EndoFLIGHT, koja kombinira tri alata (mikro-ekstruziju, filamentirano svjetlo i jetting) za ispis fotoosjetljivih polimera sa stanicama izravno na mjesto ozljede
- Cijela će se procedura opsežno testirati na relevantnom pretkliničkom animalnom modelu
- Razvoj postupka prati analiza tržišta, osnivanje spin-off tvrtke i analiza regulatornih aspekata svih komponenti bioprinting sustava.





Zahvale

Koordinatori projekta:



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