

NERVE GUIDE CONDUIT FOR PERIPHERAL NERVE REGENERATION

KEYWORDS: OPTICAL PERIPHERAL NERVE REGENERATION; REGENERATIVE MEDICINE; POLYMER; DEXTRAN; NERVE GUIDE.

STATE OF THE ART

The injury of the peripheral nerves are a quite common, especially in the young male population due to accidental traumatic events. The degree of injury may vary, being the most severe cases associated with permanent disability.

We developed a novel polymeric nerve guide tube based on biocompatible and biodegradable polymers for regenerative medicine, namely peripheral nerve regeneration. This guide tube promotes the regeneration of the nerve, while it is reabsorbed (with adjustable rate) by the organism without inducing adverse reactions that could lead to its rejection and subsequent removal with recourse to a second surgery. This tube results from the combination of two biocompatible and biodegradable polymeric materials (dextran e poly(g)-caprolactone) for peripheral nerve regeneration that are approved by the Food and Drug Administration (FDA).

ADVANTAGES

- Photopolymerizable characteristic;
- Tailored rate of degradation;
- Biocompatibility;
- Non-acidic degradation material;
- Transparency of the tube facilitates suturing;
- Adequate biomechanical properties;
- Suture resistant structure;
- Simple and low cost production technology;
- Properties and size of tubes adaptable to the needs.



STAGE OF DEVELOPMENT

TRL 3



IPR LEGAL STATUS

Protected in several countries



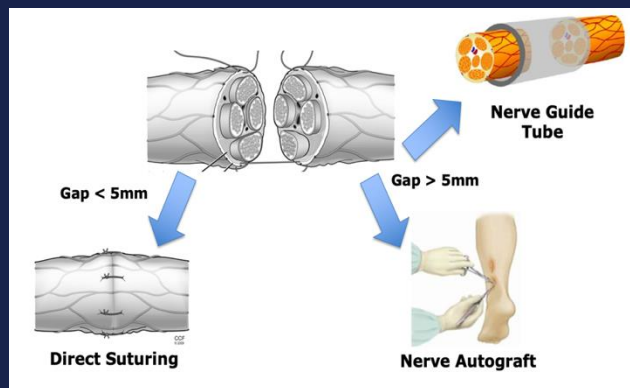
OWNERSHIP

The rights to the technology are held by the University of Coimbra and University of Porto.



COLLABORATION SOUGHT

Licensing for further developments or R&D partnership.



APPLICATIONS

- Peripheral Nerve Regeneration;
- Polymeric tube;
- Biomedical application (e.g: dental membrane for drug release).