

# Bioartificial Lymph Nodes

Reference No: B74182

## CHALLENGE

Secondary lymphedema is a common complication after lymph node removal. For most patients the disease is a lifelong condition involving psychological and physical disabilities.<sup>1</sup> With the exception of symptomatic therapies like compression bandages or massages, very few hospitals offer lymph node transplantation as a causal treatment. The surgery is a serious intervention performed under full anaesthesia. Currently, a generally accepted etiologic surgical standard therapy for the treatment of lymphedema does not exist.<sup>2</sup>

## INNOVATION

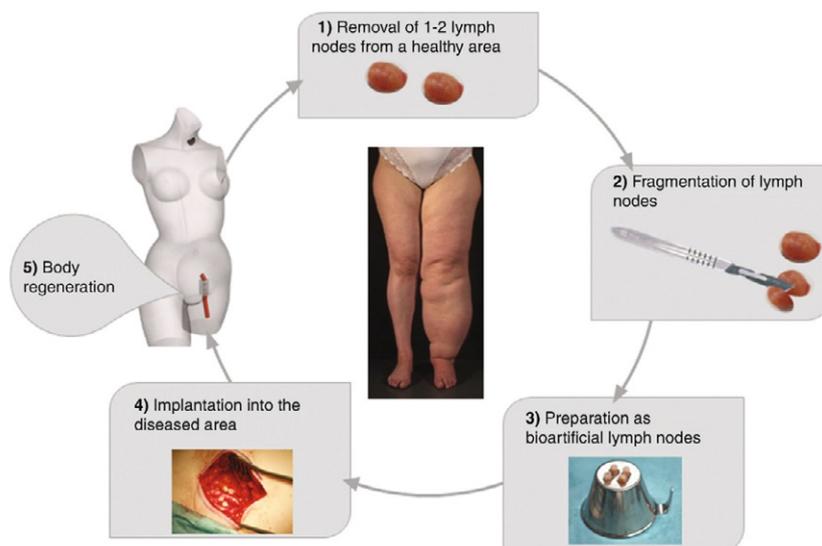
The innovation comprises a scaffold for lymph node fragment transplantation. The scaffold is made of a biodegradable polymer and can be manufactured by using a melting electrospinning process. The surgery involves the following steps: First a healthy lymph node is removed from the patients's body. Subsequently, the tissue is fragmented and the fragments are fixed in the scaffolds using fibrin glue. Finally, the filled scaffolds are transplanted into the affected area.

## COMMERCIAL OPPORTUNITIES

The invention represents an alternative to complicated lymph node transplantations. With the inventive bioartificial lymph node technology surgery is performed under local anesthesia taking only one hour instead of six to eight hours. Therefore, the strain on the patients and the costs for this causal treatment can be significantly reduced.

## DEVELOPMENT STATUS

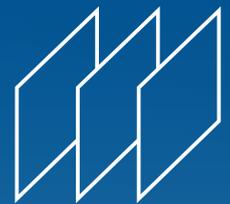
Animal testing performed successfully. Next steps: clinical studies



Novel implantation technique with bioartificial lymph nodes (scaffolds made of biodegradable polymer like polycaprolactone filled with lymph node fragments)<sup>3</sup>

## REFERENCES:

- 1 „Improved Regeneration of Autologous T<sub>R</sub>ansplanted Lymph Node Fragments by VEGF-C-Treatment“, T. Sommer et al. in The Anatomical Record 295: 786-791 (2012).
- 2 EP 3 237 026 European Patent „Implant for Lymph Node Formation/Regeneration“
- 3 [https://link.springer.com/chapter/10.1007/978-3-030-19958-6\\_25](https://link.springer.com/chapter/10.1007/978-3-030-19958-6_25)



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