NATIONAL CANCER INSTITUTE
Technology Transfer Center

Surgical Tool for Sub-retinal Tissue Implantation

Summary

Researchers at the National Eye Institute (NEI) developed a surgical tool to place tissue into position in the retina. The NEI seeks co-development or licensing to commercialize a prototype already in pre-manufacturing. Alternative uses will be considered.

NIH Reference Number

E-192-2014

Product Type

- Devices

Keywords

- intra-ocular, surgical tool, tissue placement retina, sub-retinal, eye, National Eye Institute, NEI, Maminishkis

Collaboration Opportunity

This invention is available for licensing.

Contact

- Edward Fenn
  NCI TTC

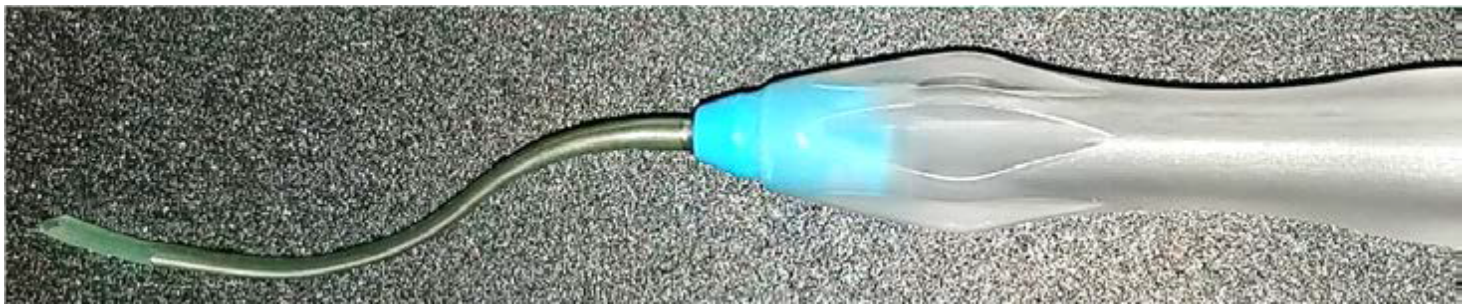
  tedd.fenn@nih.gov (link sends e-mail)

Description of Technology

The accurate placement of transplanted tissue at a precise position in the retina is difficult but critical for a successful implementation of an ocular surgical intervention.

Researchers at the National Eye Institute (NEI) developed a surgical tool (see image below) designed to place tissue patches, such as sheets of tissue, onto the retina in a precise and controlled fashion. The tissue for transplantation remains enshrouded in an internal channel until it is accurately delivered to the site of transplant by fluid pressure from a hydrostatic pump. The curved design of the tool matches the curvature of the human eye, and the ease of operation minimizes surgical damage to the eye during placement of the tissue. The secure and precise operation of the tool and delivery of the tissue to the transplantation site maximizes the therapeutic effectiveness. The researchers demonstrated that this tool can be used, with or without modification, to deliver small implantable devices into the retina.

This tool is manufactured as a disposable prototype. It is available for licensing and the NEI is open to discussion on potential additional uses of the tool. For example, it is currently being used for autologous iPSC tissue transplant, and can be licensed for this field of use.



Potential Commercial Applications

- Ocular tissue transplantation;
- Delivery of small devices or extended release drug pellets into sub-retinal space

Competitive Advantages

- Precision of operation for surgeon (no extra moving parts)
- Tool consists of separate disposable parts
- Ease of operation, controlled delivery
- Minimized damage to the eye and transplanted tissue
- Only tool available that can deliver tissue into the sub-retinal space

Inventor(s)

Arvydas Maminishkis (NEI)

Development Stage

- Pre-clinical (in vivo)

Patent Status

- **Foreign Filed:** Published - Patent Application WO 2016/007852
- **U.S. Provisional:** U.S. Provisional Patent Application Number USPTO 62/023,289

Related Technologies

- E-293-2016 - Tissue Clamp for Repeated Opening and Closure of Incisions/Wounds

Therapeutic Area

- Eye and Ear, Nose & Throat

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