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GENE THERAPY FOR RETINOPATHY OF PREMATUREITY

THERAPEUTICS

Gene therapy that inhibits intravitreal angiogenesis by stopping growth of abnormal blood vessels in the eye to treat retinopathy of prematurity without harmful side effects.

TECHNOLOGY TYPE

Rare Diseases
Gene Therapy
Ophthalmology
Retinopathy of Prematurity
Intravitreal Angiogenesis
Endothelial Cells
STAT 3 Inhibitors

STAGE OF DEVELOPMENT

- Proof of concept established in ex vivo models.

- Additional studies and reimbursement strategy required.

IP PROTECTION

Nationalized PCT Issued in the United States and Pending in Europe

Methods and compositions for inhibiting retinopathy of prematurity
WO2015123561A2

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TECHNOLOGY SUMMARY

Retinopathy of prematurity (ROP) is a leading cause of childhood blindness worldwide. It is becoming more common as emerging countries develop technology to save preterm infants, but lack resources to provide optimal care. In the United States, 14 percent of childhood blindness is attributed to ROP, while in some developing nations estimates surpass 20 percent. Treatments of severe ROP include 1) laser ablation of peripheral avascular retina, which destroys developing retina; or 2) intravitreal anti-VEGF agents, which can lead to persistent avascular retina and even blindness.

The University of Utah is developing a gene therapy based novel approach by targeting STAT3 that, unlike anti-VEGF treatment, will not interfere with physiologic retinal vascular development. This approach would stop the growth of abnormal blood vessels in the eye, prevent retinal detachment, and preserve vision.

FEATURES AND BENEFITS

- Novel gene therapy approach involving new pathways that overcome the limitations of anti-VEGF treatment.
- Saves time and money for patients, doctors, and insurance providers by reducing need for further eye surgery.
- Targets intravitreal angiogenesis whether VEGF caused or independently activated, which helps prevent macular degeneration and other forms of retinopathy.

RECENT PUBLICATIONS

Hartnett, M.E. (2017). Advances in understanding and management of retinopathy of prematurity. *Survey of Ophthalmology*. 62(3):257- 276. doi: [10.1016/j.survophthal.2016.12.004](https://doi.org/10.1016/j.survophthal.2016.12.004)

INVENTOR PROFILE

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