

[Open Peer Review on Qeios](#)

Aganirsen

National Cancer Institute

Source

National Cancer Institute. *Aganirsen*. NCI Thesaurus. Code C148131.

A 25-mer antisense oligonucleotide (ASO) that targets the mRNA transcript for insulin receptor substrate (IRS-1), a protein required for the formation and growth of new blood vessels, that can be used to reduce corneal angiogenesis and neovascularization. Upon ocular administration, aganirsen binds to IRS-1 mRNA and blocks the synthesis of IRS-1. By blocking the expression of IRS-1 in pro-angiogenic conditions, such as those seen in corneal grafts and other inflammatory-based ocular diseases, aganirsen blocks the corneal neovascularization pathway, inhibits vascular endothelial growth factor (VEGF) production, which is a key component of neovascularization, and prevents the production of various pro-inflammatory cytokines, which together decrease the risk of corneal neovascularization. Additionally, upon corneal transplantation, neovascularization induces an immune response that can lead to immunological corneal graft rejection; therefore, by inhibiting neovascularization this agent can decrease the risk of corneal graft rejection. IRS-1, overexpressed in endothelial cells during corneal neovascularization, plays a key role in the regulation of angiogenesis.