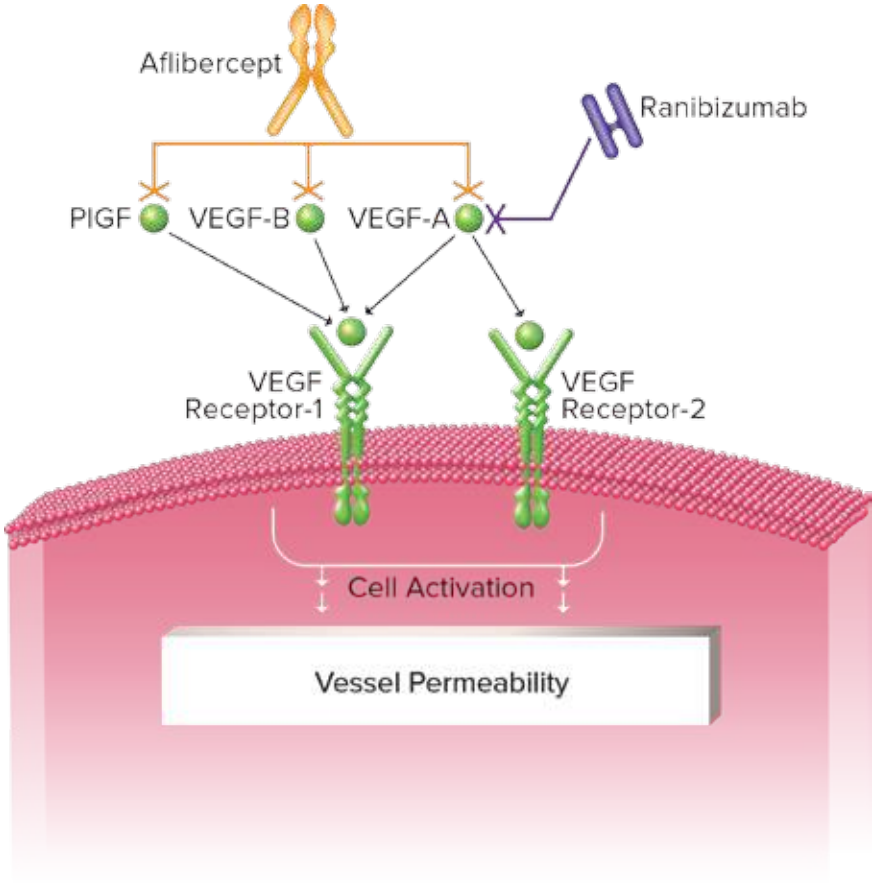
MODULE 9.4
Lucentis (Ranibizumab)

Ranibizumab (Lucentis; Genentech, Inc; South San Francisco, CA) is an affinity-enhanced vascular endothelial growth factor (VEGF)-blocking antibody fragment developed from bevacizumab (Avastin; Genentech, Inc; South San Francisco, CA). The FAB fragment of ranibizumab allows for monovalent binding to VEGF, with higher affinity for the target than the parent compound has.[1]

Ranibizumab was initially approved in 2006 by the FDA for the treatment of neovascular age-related macular degeneration (AMD).[2] More recently, indications for macular edema following retinal vein occlusion and diabetic macular edema (DME) have been approved. Ranibizumab (0.3 mg) is recommended for monthly intravitreal injections. The most common adverse reactions to the agent are conjunctival hemorrhage, eye pain, vitreous floaters, and increased intraocular pressure.

Among the 4 anti-VEGF agents (ranibizumab, bevacizumab, pegaptanib, and aflibercept), ranibizumab is the one with the most published studies (eg, DRCRnet, RISE, RIDE, RESTORE, READ-2, RESOLVE).[3-11] Vision gains of ≥3 lines were experienced by a higher proportion of patients treated with ranibizumab than those treated with laser. The studies also suggest that ranibizumab injections were more effective when used as monotherapy or in combination with laser therapy in treating DME, compared with use of laser therapy alone.[11] You will learn more about these studies in detail in Module 10 that intravitreal administration of ranibizumab is better than laser therapy both for preserving and improving vision in patients with DME.



PIGF: Placental growth factor
VEGF-A: Vascular endothelial growth factor A
VEGF-B: Vascular endothelial growth factor B
VEGF Receptor-1: Vascular endothelial growth factor receptor (kinase-impaired)
VEGF Receptor-2: Vascular endothelial growth factor receptor (highly active kinase)

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