Newer Antiglaucoma Medications

Name of drug	Class of drug	Mechanism of action	Dosage	Mean IOP lowering effect in phase II/III trials	Adverse effects
Rhopressa™ (Netarsudil ophthalmic solution 0.02%) [AR 13324; Aerie Pharmaceuticals, North Carolina, USA]	Rho kinase inhibitor and norepinephrine transporter (NET) inhibitor	Improved outflow through the trabecular meshwork and the uveoscleral pathway, decreasing episcleral venous pressure, and decreasing aqueous production	OD (Bedtime)	5.5 mm Hg	Conjunctival hyperemia, conjunctival hemorrhage, and cornea verticillata.
Roclatan™ (Fixed-dose combinations of netasurdil with latanoprost 0.005%)	Rho kinase inhibitor and norepinephrine transporter (NET) inhibitor plus prostaglandin analogue	Improved outflow through conventional and uveoscleral pathway	OD (Bedtime)	Average reduction in IOP of 1.8mmHg greater than those receiving latanoprost, and 2.7mmHg greater than those receiving Rhopressa.	Conjunctival hyperemia, Instillation site pain, cornea verticillata.
Glanatec™ (Ripasudil 0.4%; K-115, Kowa Ltd, Nagoya, Japan)	Rho-associated coiled-coil-forming protein kinase (ROCK) inhibitor	Selective inhibition of the actin cytoskeleton contractile tone of smooth muscle in the trabecular meshwork; resulting in increased aqueous outflow directly through the conventional pathway.	BD	2.7-3.7 mm	Conjunctival hyperemia
Trabodenoson (INO 8875) (Inotek Pharmaceuticals, USA)	Adenosine A1 receptor agonist	Alters ECM turnover by TM cells and increases conventional outflow facility	500mcg	4.1mm Hg	Conjunctival hyperemia
CF-101 (Can-Fite Biopharma)	Adenosine receptor A3 agonist.	Stimulate secretion of (MMPs) in the endothelial cells lining the trabecular meshwork causing cell volume shrinkage and extracellular matrix remodeling, which ultimately facilitates conventional aqueous outflow.	1 mg BD oral	1.1. (12 weeks)	Constipation Headache Palpitations
DE-117 (Santen Pharmaceutical, Japan)	EP2 agonists Prostanoid receptor agonist	Relaxation of endothelial cells in the Schlemm's canal→ Facilitating uveoscleral outflow. Increase conventional outflow by decreasing cell contractility and collagen deposition	OD	Phase III ongoing 7.1 ± 1.8 mmHg	Conjuntival hyperemia ocular hyperaemia, photophobia

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Taprenepag isopropyl (PF-04217329)	EP2 agonist	Facilitates uveoscleral outflow by decreasing cell contractility and collagen deposition	BD	Phase II; 30-50 % decrease in mm hg	Conjunctival hyperemia dose-related iritis Increased corneal thickness
ONO-9054; 0.003% (Ono Pharmaceuticals, Japan)	EP3 agonist and FP receptor agonist	Facilitates uveoscleral outflow	OD (Evening) 30mcg/ml	7.3 mm Hg 28-31% IOP reduction	Hyperemia Dry eye
Bamosiran (SYL040012) (Sylentis, Spain)	Small-interfering RNA	Specific gene silencing and causes beta-2 adrenergic receptor blockade→ Decreasing aqueous production	OD 600 µg/eye/day	Phase IIb 20% reduction of IOP in individuals with a higher baseline IOP	Darkening of the iris color, lash growth, periocular pigmentation, and hyperemia
Vyzulta™ (Latanoprostene Bunod, 0.024%)	Prostaglandin F2-alpha analog and nitric oxide	Enhances uveoscleral outflow by upregulating MMP's and remodeling of the ciliary muscle's ECM Linked to an NO-donating moiety enhances conventional outflow by inducing cytoskeletal relaxation via the soluble guanylyl cyclase-cyclic guanosine monophosphate (sGC-cGMP) signaling pathway	OD	7.5 -9 mm Hg (22 % IOP reduction)	Conjunctival hyperemia (5.9%), Eye irritation (4.6%); Eye pain (3.5%).
Mikeluna™ (OPC-1085EL; Otsuka Pharmaceutical Co., Ltd.)	Carteolol hydrochloride 2%, and the prostaglandin analog, latanoprost 0.005%	Reduce aqueous production and increase uveoscleral outflow	OD (Morning dose)	Phase III (3.5 mm Hg)	Conjunctival hyperemia, Blepharal pigmentation, and punctate keratitis

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