Market Update: Biosimilars

Elias Mavrofrides, M.D.
Florida Retina Institute
Orlando, FL



Disclosures

Regeneron - Consultant
RCA/Cencora – Member Practice

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What is a Biosimilar?

- Understand the difference between a biologic medication and a traditional drug

Biologic Medication vs. Traditional Drug

◆ Biologic Medication	◆ Traditional Drug
 Large, complex molecules, often proteins	 Usually smaller, simpler molecules
 Produced using living cells	 Typically made by chemical synthesis
 Small variations between batches	 Consistent active ingredient
 Often require careful handling and injection	 Many can be taken orally or applied topically
 Generally complex and costly to produce	 Generally simpler to manufacture

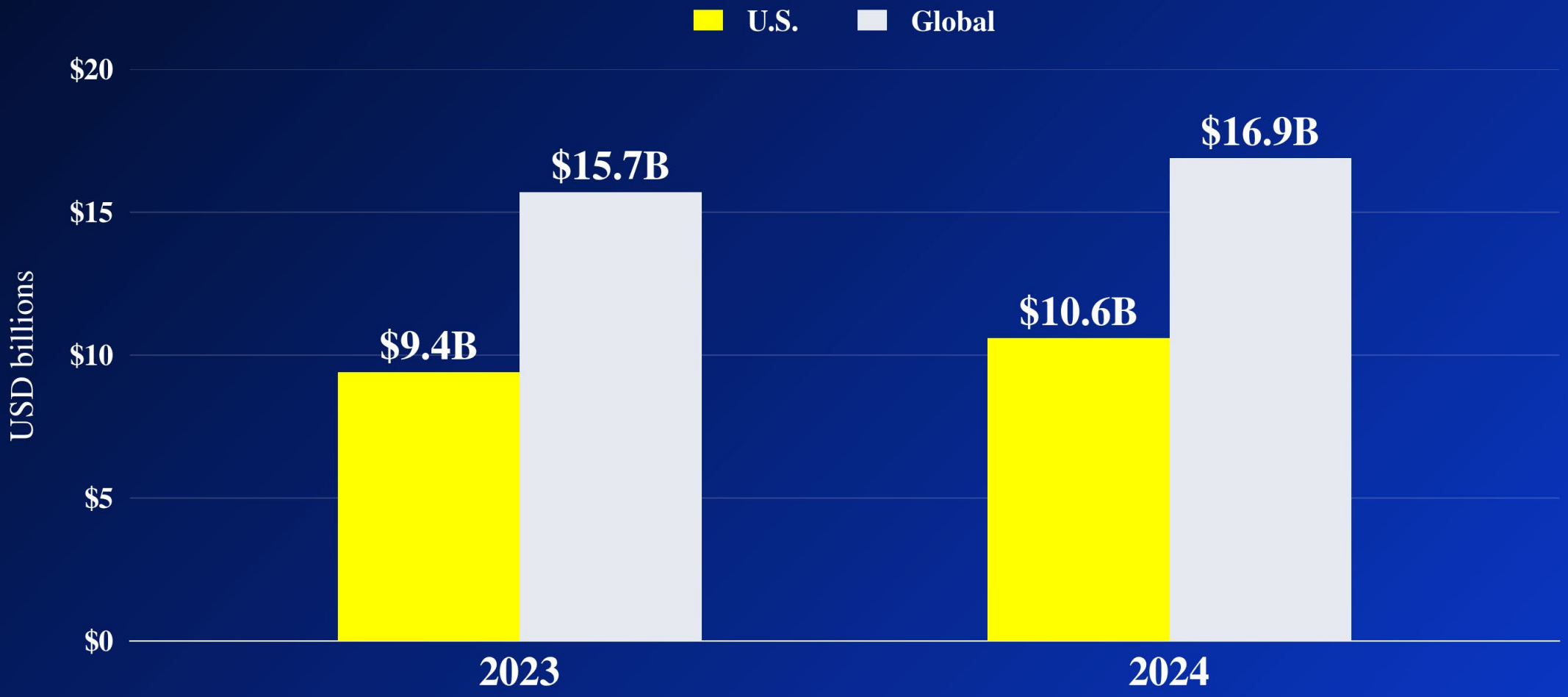
Biologic Medications in Retina

- Anti-VEGF agents used for exudative (wet) AMD, diabetic retinopathy, and retinovascular disease

- Systemic medications for ocular inflammation

Retinal Anti-VEGF Medication Market

U.S. and global market-size estimates, 2023–2024



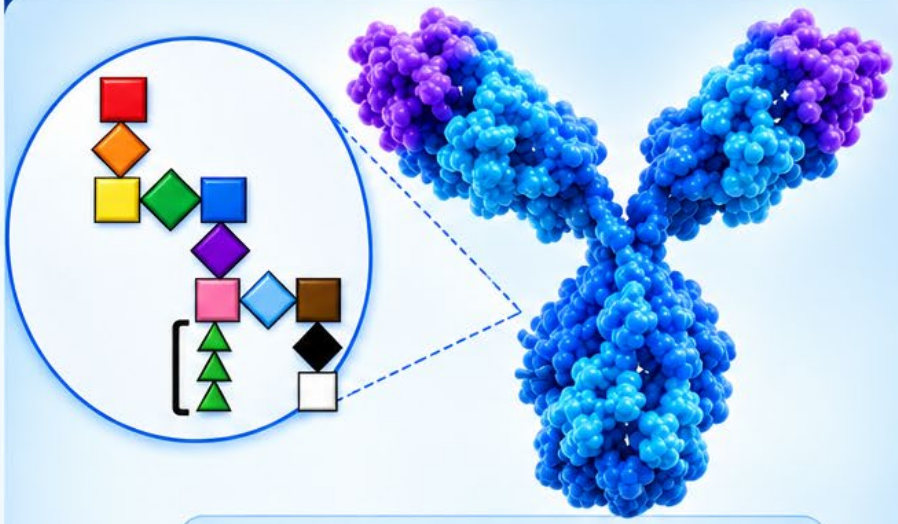
Global values include the U.S. market

Source: Global Market Insights, Ophthalmic Anti-VEGF Therapeutics Market (December 2025).
Market estimates; not audited insurer or patient spending. Estimates vary by methodology.

Biosimilar Medications

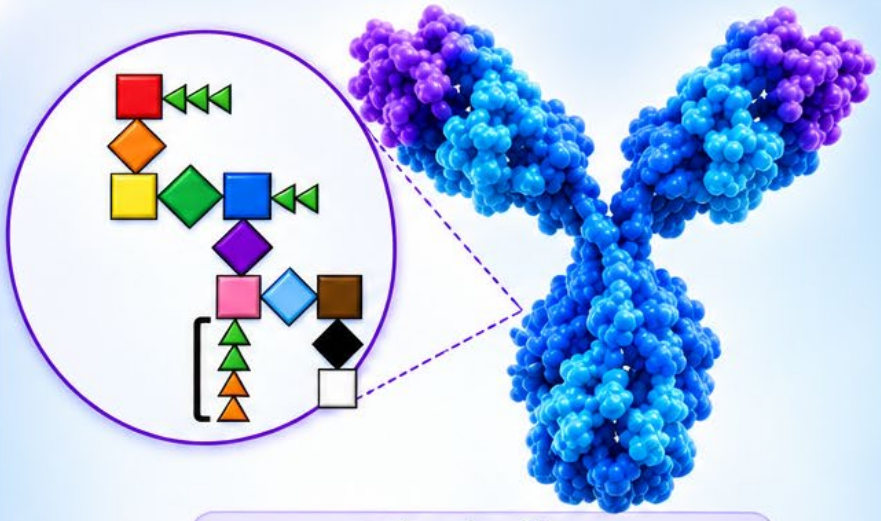
- Biologic medication that is highly similar to an already FDA approved biologic (Reference Product)
- There must be “no clinically meaningful difference in safety, purity, or potency”
- Biologics cannot be generated exactly the same each time, so there is naturally some variation even in the reference product → Biosimilar

Biologic Reference Product



Biologic Reference Product

Biosimilar



Biosimilar
(Bracket denotes mild variation)

Generic Example



Acetaminophen = **Tylenol®**

Identical chemical structure and bioequivalent

Why Biosimilars?

- Cost savings and access to care
  - Reference products are expensive
  - Repeated injections are necessary
  - Compliance is often impacted by out-of-pocket cost
  - Undertreatment has significant impact on outcomes

ALL BIOSIMILARS COMBINED



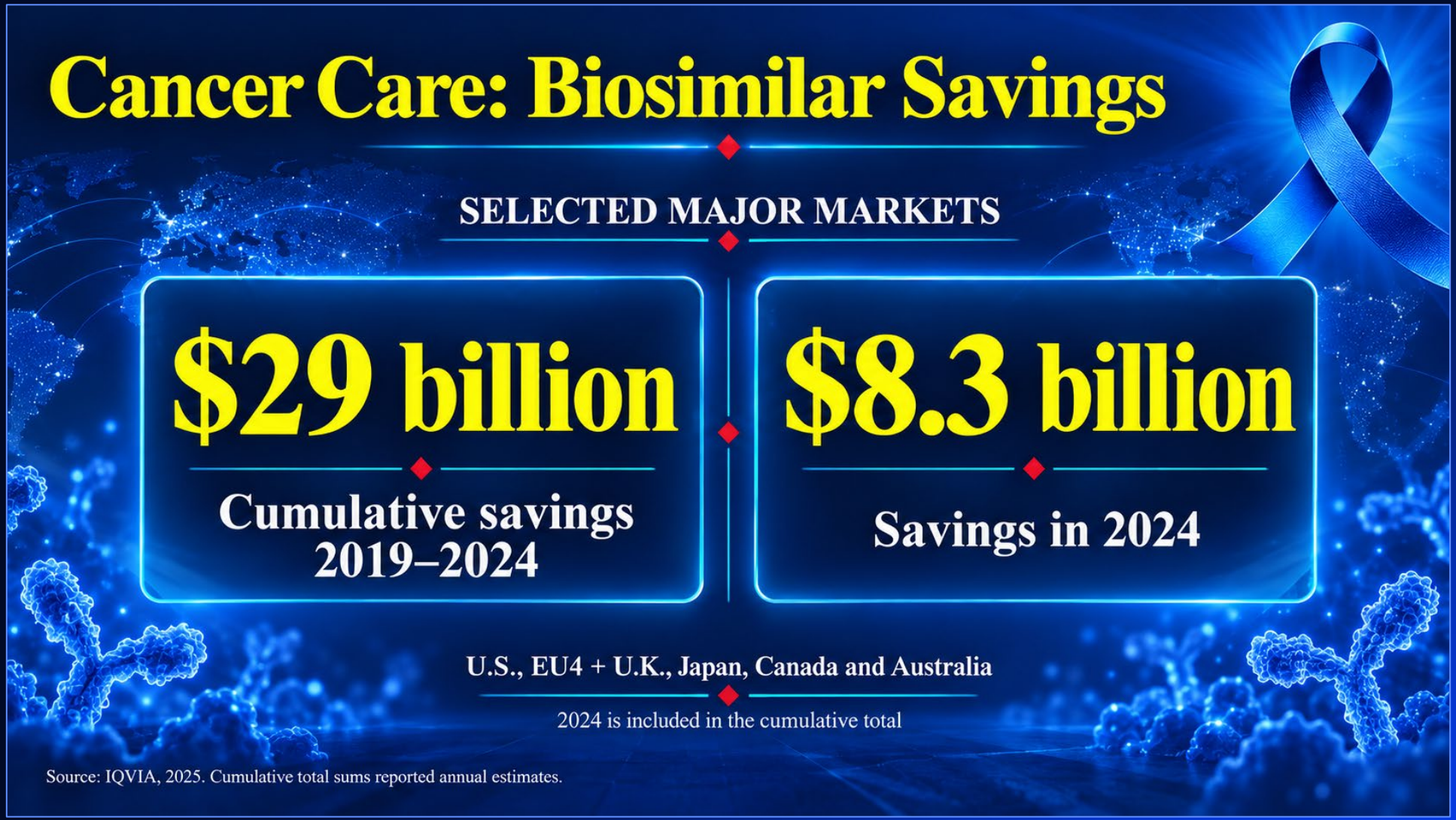
$81.6 billion

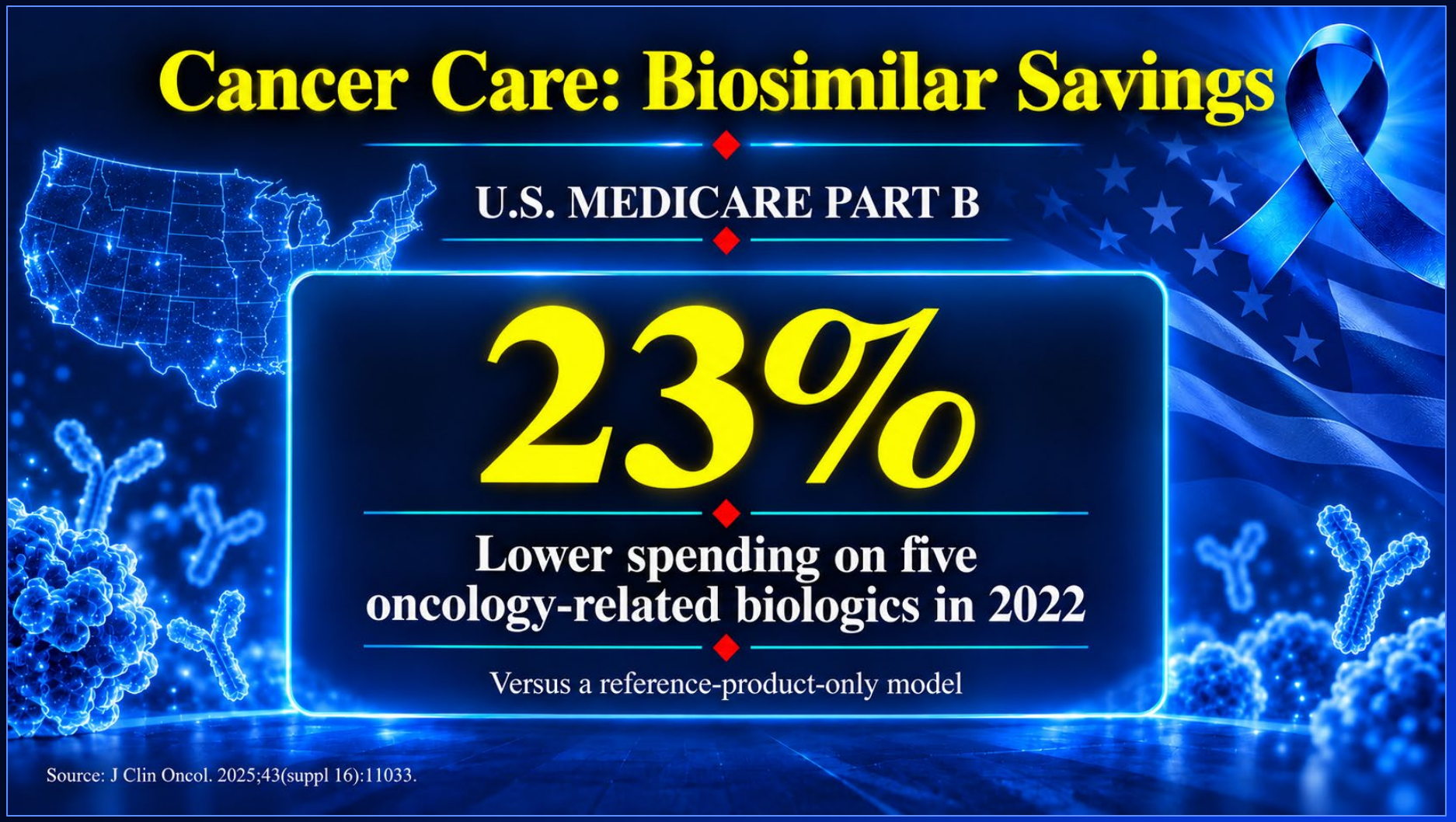
U.S. cumulative savings, 2015–2025

- Including $25.4 billion in 2025 alone

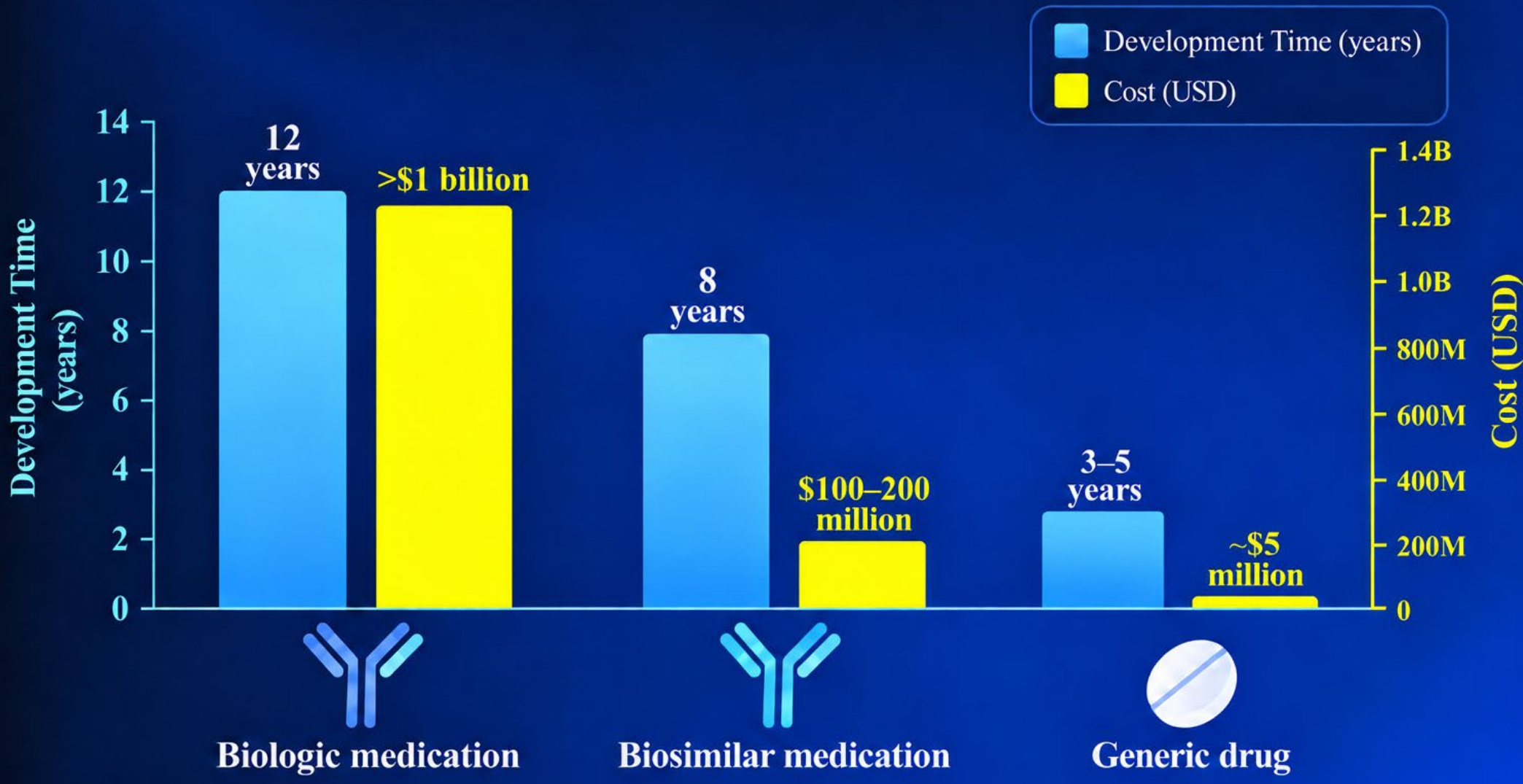


Source: AAM / Biosimilars Council, 2026 savings report


Cancer Care: Biosimilar Savings
SELECTED MAJOR MARKETS
$29 billion
Cumulative savings 2019–2024
$8.3 billion
Savings in 2024
U.S., EU4 + U.K., Japan, Canada and Australia
2024 is included in the cumulative total
Source: IQVIA, 2025. Cumulative total sums reported annual estimates.


Cancer Care: Biosimilar Savings
U.S. MEDICARE PART B
23%
Lower spending on five oncology-related biologics in 2022
Versus a reference-product-only model
Source: J Clin Oncol. 2025;43(suppl 16):11033.

Biosimilar Savings



Hariprasad SM, Gale RP, Weng CY, Ebbers HC, Rezk MF, Tadayoni R. An Introduction to Biosimilars for the Treatment of Retinal Diseases: A Narrative Review. Ophthalmol Ther. 2022 Jun;11(3):959-982. doi: 10.1007/s40123-022-00488-w. Epub 2022 Mar 12.

How are Biosimilars Manufactured?

- Developing a biosimilar is a complicated process

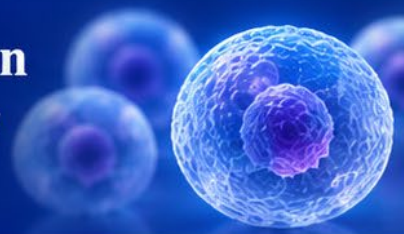


- Requires reverse engineering because information from the reference product is limited

- Reference product's amino acid sequence may be known

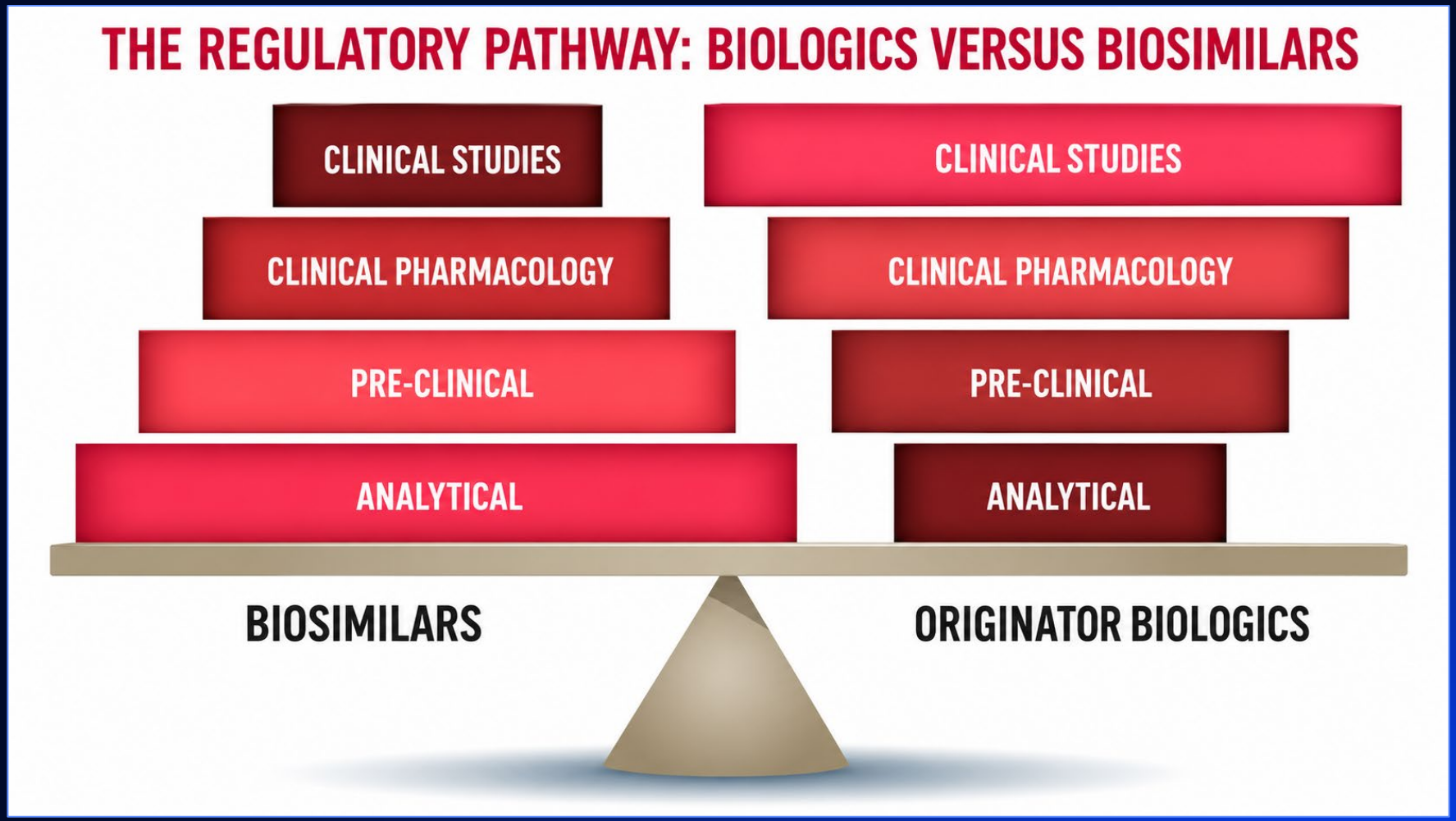


- Some information on cell lines may be available



How are Biosimilars Approved?

- **FDA approval through an abbreviated pathway**
  - The Biologics Price Competition and Innovation Act of 2009
- **Goal is to confirm the biosimilarity of the new product to the reference product**
- **Trials to confirm similar efficacy and safety to the reference product**



https://retinatoday.com/articles/2022-may-june/the-biosimilar-market-what-you-need-to-know

Indication Extrapolation

- Once a biosimilar has completed a clinical trial and received FDA approval for one indication, the biosimilar may receive approval for other indications of the reference product

- Clinical trials for all indications of the reference product may not be required

Lucentis: Pivotal Clinical Trials

WET AMD

FDA approval: 2006

Trial	Length	Patients
MARINA	24 months	716
ANCHOR	24 months	423

RVO

FDA approval: 2010

Trial	Length	Patients
BRAVO (Branch-RVO)	12 months	397
CRUISE (Central-RVO)	12 months	392

DME

FDA approval: 2012

Trial	Length	Patients
RIDE	36 months	382
RISE	36 months	377

MYOPIC CNV

FDA approval: 2017

Trial	Length	Patients
RADIANCE	12 months	277

Interchangeability Designation

- Optional
- Allows pharmacist to substitute medication without prescriber approval
- Additional requirements - switching trial may be conducted
- Does NOT necessarily mean it's safer or better than biosimilar without this designation

Biosimilars Approvals

- **First biosimilar approved in the US**
  - March 6, 2015
  - Zarxio (filgrastim-sndz) is biosimilar to Neupogen (filgrastim)

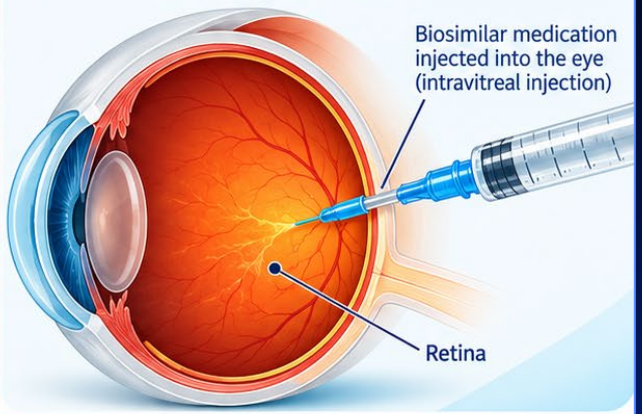
- **First retinal biosimilar approved in the US**
  - September 17, 2021
  - Byooviz (ranibizumab-nuna) is biosimilar to Lucentis (ranibizumab)

Retinal Biosimilars

Similar. Effective. More Access.

Retinal biosimilars are highly similar versions of existing biologic treatments used for retinal diseases, offering the same clinical benefits with greater accessibility and potential cost savings.

How Retinal Biosimilars Work

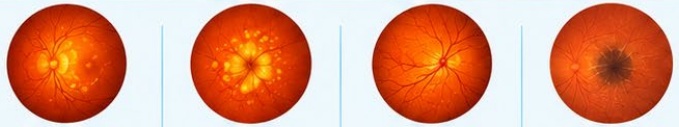




Biosimilar vs. Original Biologic

Retinal Biosimilar	Original Biologic
Highly similar in structure, quality and function	Reference product (brand-name biologic)
Same clinical benefits and safety profile	Proven effectiveness and safety
Often lower cost	Higher cost
Increases treatment access and availability	May be less accessible due to higher cost

Common Retinal Diseases Treated



- Age-related macular degeneration (AMD)
- Diabetic macular edema (DME)
- Retinal vein occlusion (RVO)
- Other retinal disorders

The Promise of Retinal Biosimilars

- Lower healthcare costs
- Increased patient access
- Same proven safety and efficacy
- Better long-term outcomes

More options. More patients. Healthier vision.

Anti-VEGF Hierarchy

Faricimab
Vabysmo

Aflibercept 8 mg
Eylea HD

Aflibercept 2 mg
Eylea

Ranibizumab
Lucentis

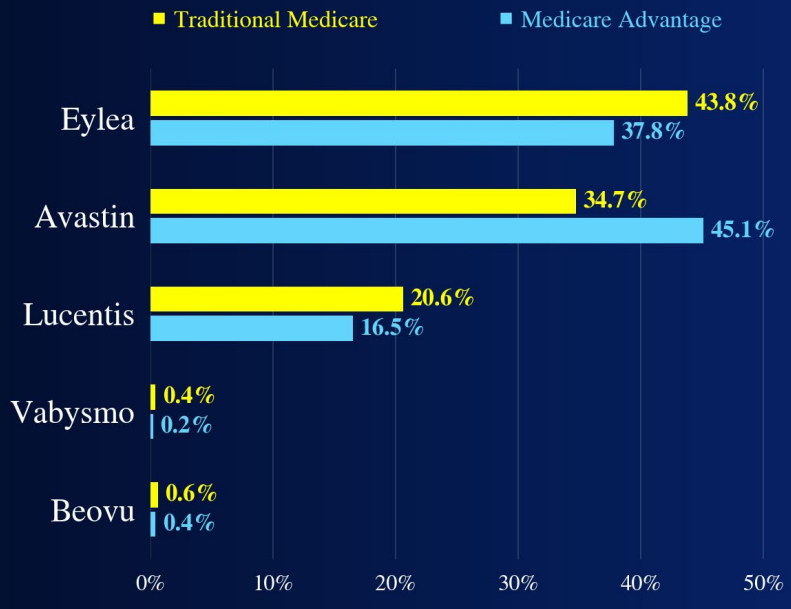
Bevacizumab
Avastin

Presenter's opinion

Anti-VEGF Injection Share

2017–2022 combined

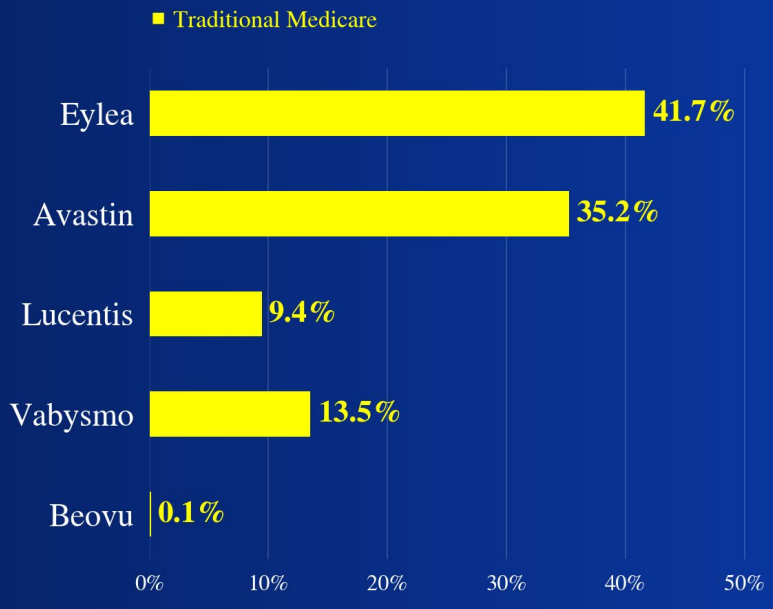
IRIS Registry



12.94M injections • Both Medicare groups

2023

Medicare claims



4.11M injections • Five studied agents

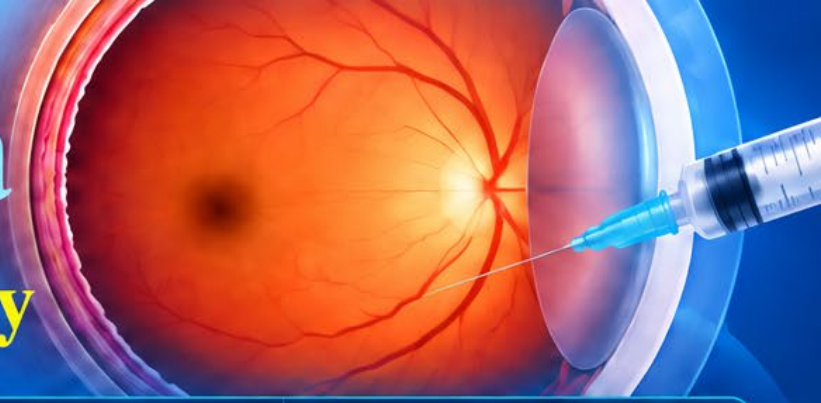
Different datasets and populations. This comparison does not establish a change over time.

IRIS: Chan et al. Ophthalmology. 2026;133:1363–1369. Medicare claims: Abu Al-Burak et al. Ophthalmology Retina. 2026;10:753–763.

2023 shares calculated from five reported agent counts. Biosimilars and Eylea HD not separately reported. Percentages may not total 100% due to rounding.

Biosimilars in Retina

U.S. Approvals: Ranibizumab Family



Product	Company	Proper name	FDA approval
Byooviz	Samsung Bioepis and Harrow	ranibizumab-nuna	September 2021
Cimerli	Bioeq with Sandoz	ranibizumab-eqrn	August 2022
Nufymco	Bioeq with Zydus	ranibizumab-leyk	December 2025
Ranluspec	Lupin Limited	ranibizumab-hkdz	June 2026

Reference product: Lucentis

FDA approval list reviewed October 11, 2026.

Byooviz: Ranibizumab-nuna

Biosimilar to Lucentis (ranibizumab)

Samsung Bioepis; Initially Biogen, now Harrow



https://www.byooviz.com/index.html

Byooviz vs. Lucentis

BYOOVIZ

SB11 / ranibizumab-nuna

705
patients with wet AMD

52 weeks

Primary endpoints

BCVA change: week 8

CST change: week 4

LUCENTIS

Trials by indication (patient counts)

WET AMD	**MARINA 716 ANCHOR 423**	24 months
RVO	**BRAVO 397 CRUISE 392**	12 months
DME	**RIDE 382 RISE 377**	36 months
MYOPIC CNV	**RADIANCE 277**	12 months

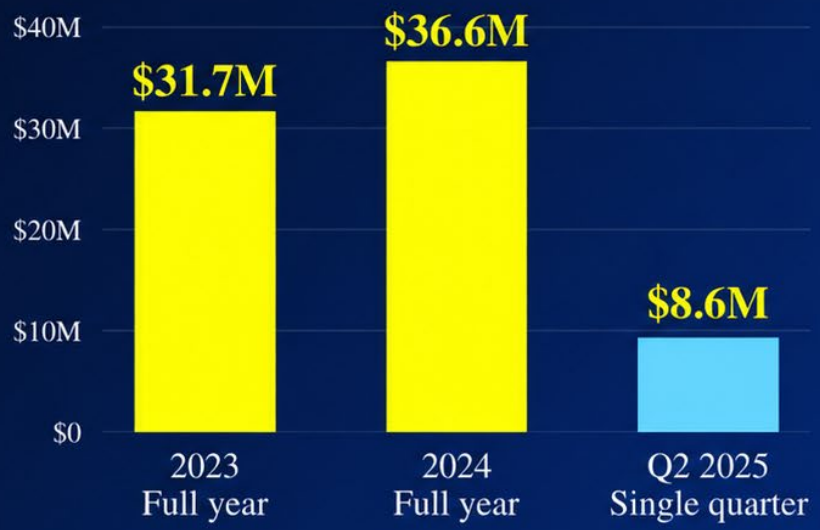
Byooviz: clinical equivalence to Lucentis in wet AMD

MARINA / ANCHOR primary endpoint: vision preservation at month 12. Study objectives and endpoints differ.

BCVA: best-corrected visual acuity CST: central subfield thickness Sources: Woo et al., JAMA Ophthalmol. 2021; BJO 2023; Lucentis pivotal trials.

BYOOVIZ: Revenue & U.S. Relaunch

BIOGEN GLOBAL REVENUE



HARROW U.S. MILESTONES

July 1, 2026

U.S. relaunch

November 9, 2026

Q3 earnings scheduled

First quarter following relaunch

Cimerli: Ranibizumab-eqrn

Biosimilar to Lucentis (ranibizumab)

Approved August 2022

Bioeq; Initially Coherus, now Sandoz



https://www.drugs.com/pro/cimerli-injection.html

Cimerli vs. Lucentis

CIMERLI

Ranibizumab-eqrn

477

patients with wet AMD

48 weeks

Primary endpoint

BCVA change: week 8

FDA-approved interchangeable

LUCENTIS

Trials by indication (patient counts)

WET AMD	**MARINA 716 ANCHOR 423**	24 months
RVO	**BRAVO 397 CRUISE 392**	12 months
DME	**RIDE 382 RISE 377**	36 months
MYOPIC CNV	**RADIANCE 277**	12 months

Cimerli: clinical equivalence to Lucentis in wet AMD

BCVA: best-corrected visual acuity. Source: Cimerli prescribing information; Lucentis pivotal trials.

CIMERLI Sales in 2023

U.S. quarterly net product sales



2023 total: $125.4 million

SANDOZ ACQUISITION

$170M

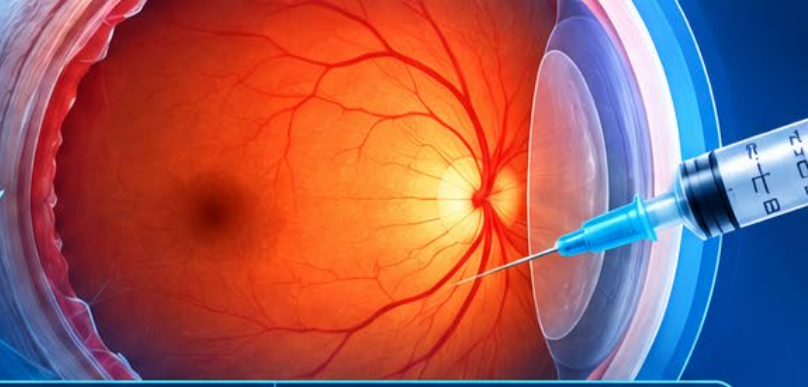
Upfront payment

Announced January 2024

Transaction value, separate from sales

Biosimilars in Retina

U.S. Approvals: Aflibercept 2 mg



Product	Company	Proper name	FDA approval
Yesafili	Biocon Biologics	aflibercept-jbvf	May 2024
Opuviz	Samsung Bioepis and Harrow	aflibercept-yszy	May 2024
Ahzantive	Formycon & Klinge with Valorum	aflibercept-mrbb	June 2024
Enzeevu	Sandoz	aflibercept-abzv	August 2024
Pavblu	Amgen	aflibercept-ayyh	August 2024
Eydenzelt	Celltrion	aflibercept-boav	October 2025

Reference product: Eylea 2 mg.
Eylea HD is a separate 8 mg product.

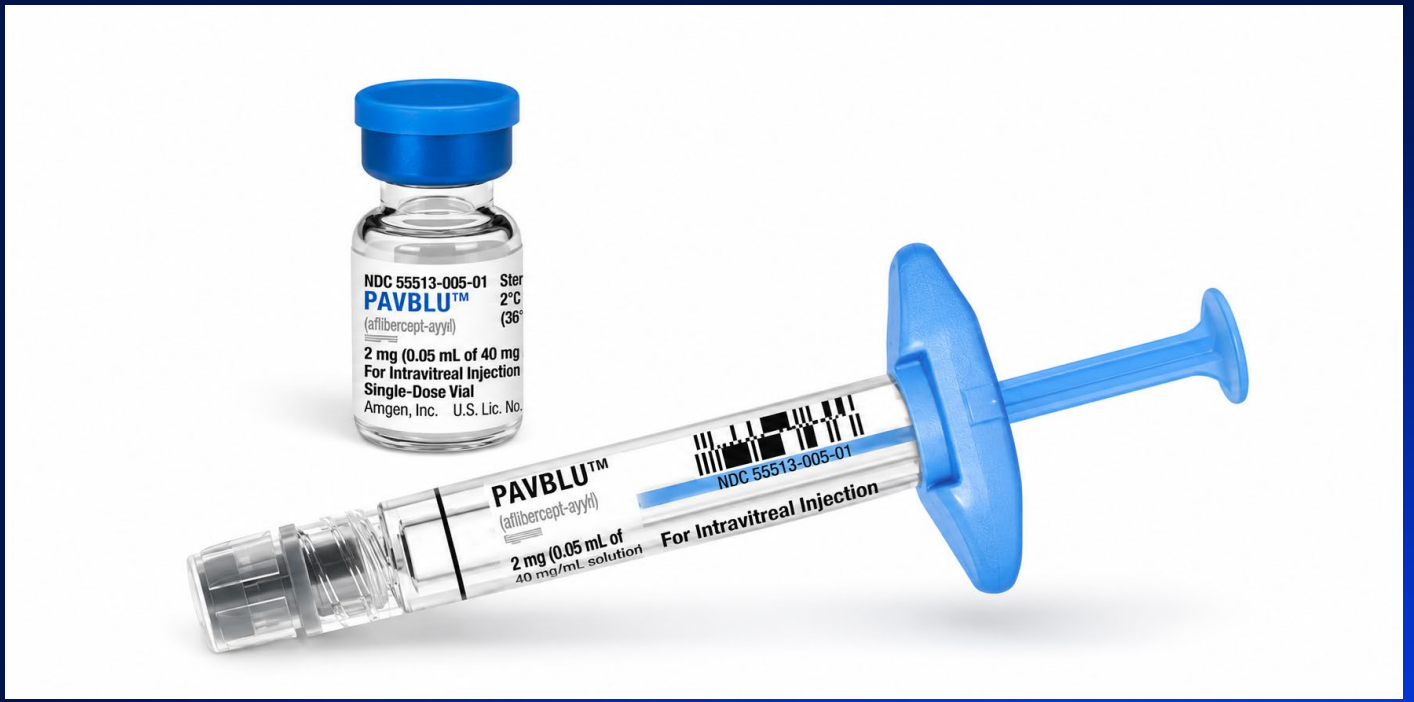
FDA approval list reviewed October 11, 2026.

Pavblu: Aflibercept-ayyh

Biosimilar to Eylea (aflibercept)

Approved August 2024

Amgen



https://www.drugs.com/pavblu.html

Pavblu vs. Eylea

PAVBLU
Aflibercept-ayyh

576
patients with wet AMD

52 weeks

Primary endpoint
BCVA change: week 8

Switching assessment
Some patients switched from reference Eylea

EYLEA 2 mg
Pivotal adult trials

Indication	Trial	Patients	Duration
Wet AMD	VIEW 1	1,217	96 wk
Wet AMD	VIEW 2	1,240	96 wk
CRVO	COPERNICUS	189	100 wk
CRVO	GALILEO	177	76 wk
BRVO	VIBRANT	183	52 wk
DME	VIVID	406	148 wk
DME	VISTA	466	148 wk
DR	PANORAMA	402	100 wk

Study duration includes follow-up. Study objectives and endpoints differ.

BCVA: best-corrected visual acuity. Eylea HD and pediatric ROP trials excluded.

Pavblu Sales

2025 • Full year

$691M

U.S. sales

Global: $700M

2026 • Jan–Jun

$556M

U.S. sales

Global: $567M

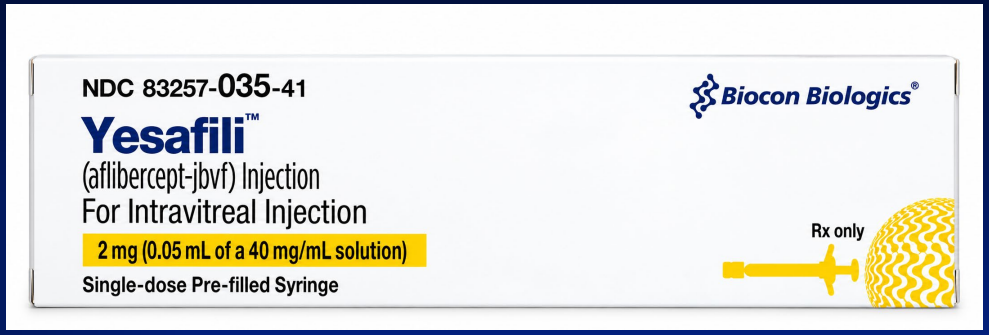
Source: Amgen financial reports. Global includes U.S.; 2026 is partial-year.

Yesafili: Aflibercept-jbvf

Biosimilar to Eylea (aflibercept)

Approved May 2024

Biocon Biologics





https://www.yesafilihcp.com/#about-yesafili

https://www.goodrx.com/yesafili

Yesafili vs. Eylea

YESAFILI

Aflibercept-jbvf

355

patients with diabetic macular edema (DME)

52 weeks

Primary endpoint

BCVA change: week 8

FDA-approved interchangeable

EYLEA 2 mg

Pivotal adult trials

Indication	Trial	Patients	Duration
Wet AMD	VIEW 1	1,217	96 wk
Wet AMD	VIEW 2	1,240	96 wk
CRVO	COPERNICUS	189	100 wk
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BCVA: best-corrected visual acuity. Eylea HD and pediatric ROP trials excluded.

Clinical Experience with Biosimilars

Clinical Experience with Biosimilars

- Safety
- Efficacy
- Convenience
- Economics
- Support

Anti-VEGF Hierarchy

Faricimab
Vabysmo

Aflibercept 8 mg
Eylea HD

Aflibercept 2 mg
Eylea

Ranibizumab
Lucentis

Bevacizumab
Avastin

Presenter's opinion

Vials

Cimerli: Ranibizumab-eqrn





Byooviz: Ranibizumab-nuna



Pre-filled Syringe

Pavblu: Aflibercept-ayyh

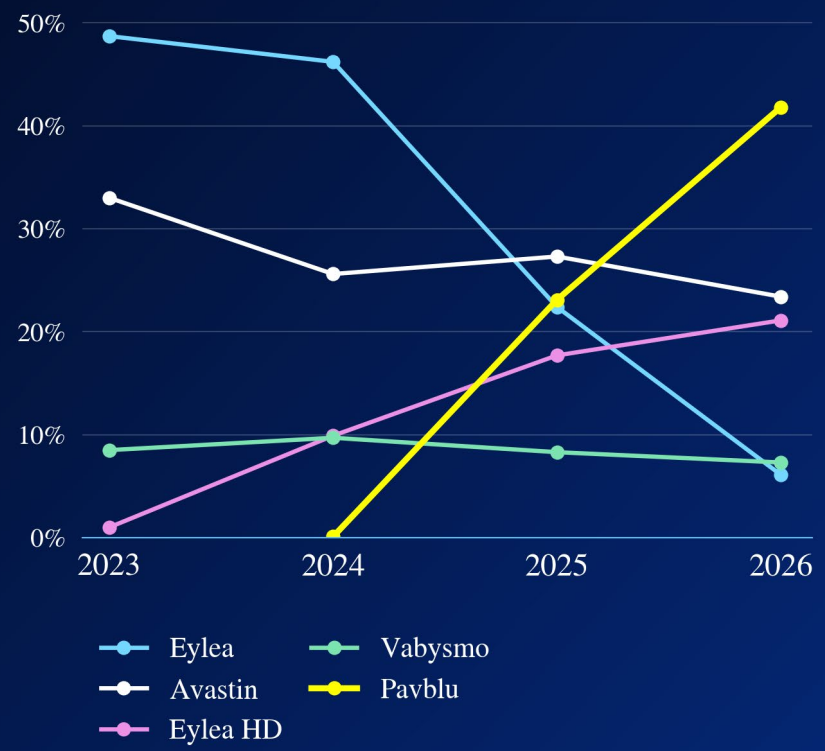


Yesafili: Aflibercept-jbvf



Retinal Drug Utilization

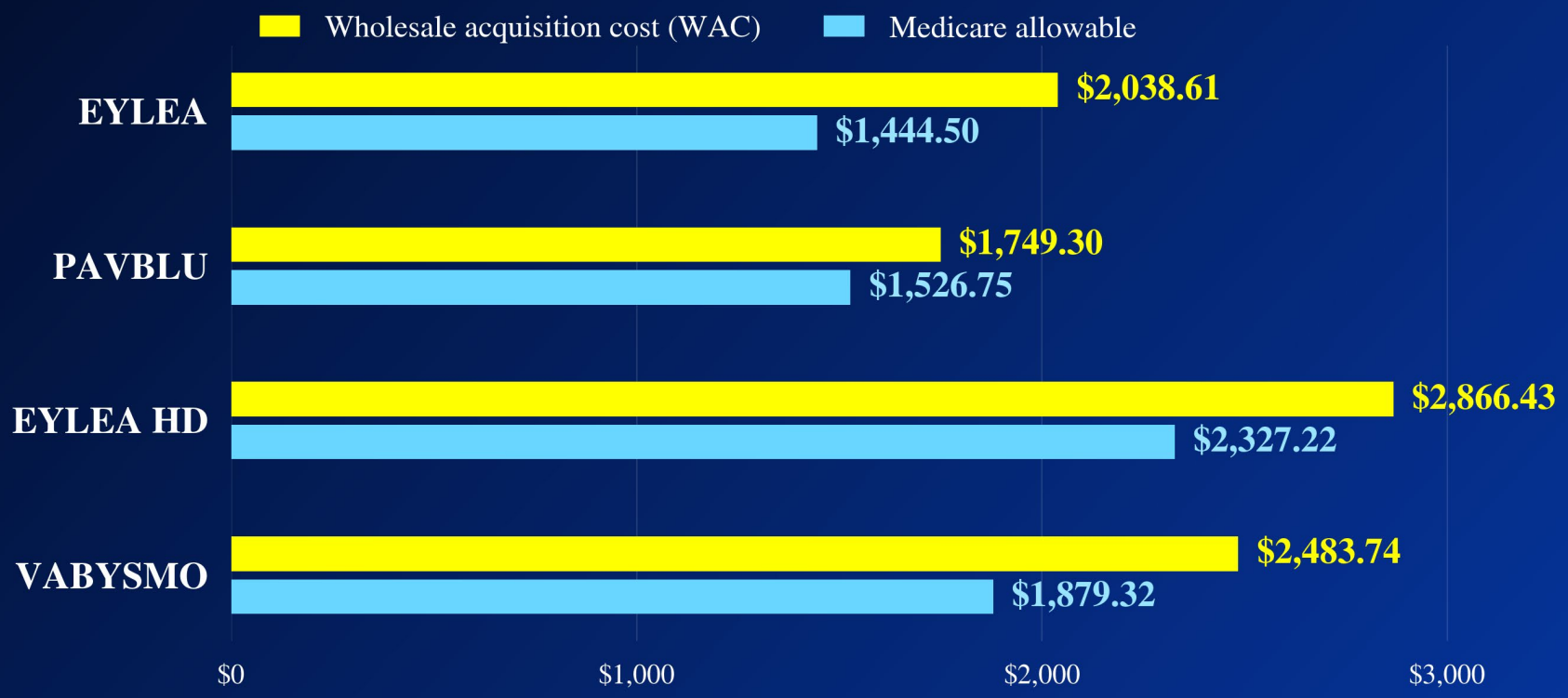
2023–2026 | Reported utilization (%)



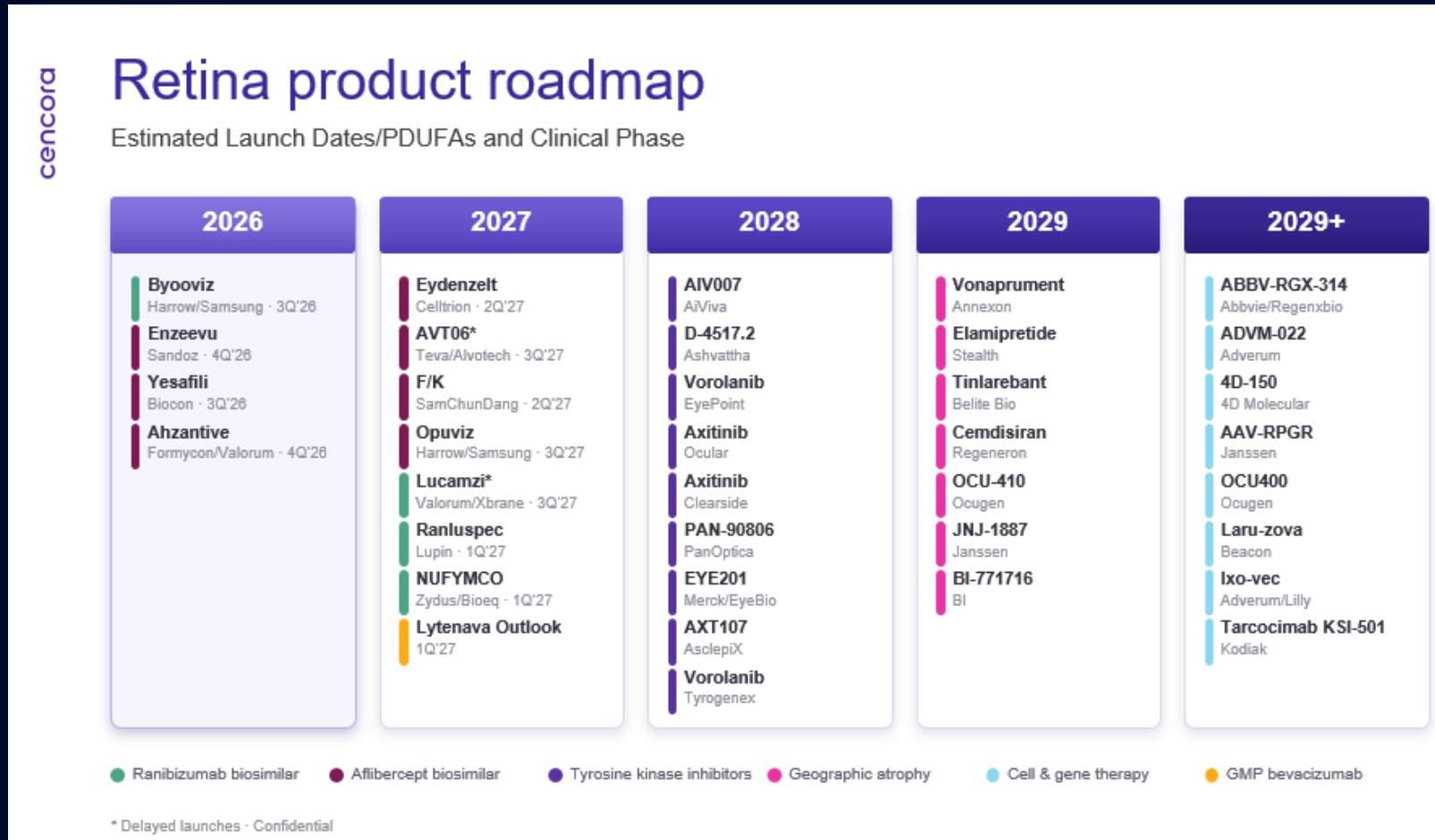
Drug	2023	2024	2025	2026
Avastin	33.0	25.6	27.3	23.4
Eylea	48.7	46.2	22.4	6.1
Pavblu	**—**	**0.1**	**23.1**	**41.8**
Eylea HD	1.0	9.9	17.7	21.1
Vabysmo	8.5	9.7	8.3	7.3
Lucentis 0.3	0.3	0.2	0.1	0.0
Lucentis 0.5	3.2	1.1	0.5	0.1
Cimerli 0.3	0.2	0.2	—	—
Cimerli 0.5	4.6	6.4	0.0	—
Beovu	0.4	0.2	0.1	0.1
Byooviz	0.1	0.4	0.4	0.0

Retinal Drug Pricing

Q4 2026 | Cost per unit



Biosimilar Pipeline



Thank You!!