

**UNITED STATES PATENT AND TRADEMARK OFFICE**

---

**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

---

SAMSUNG BIOEPIS CO., LTD., CELLTRION, INC.,  
and BIOCON BIOLOGICS INC.,  
Petitioners,

v.

REGENERON PHARMACEUTICALS, INC.,  
Patent Owner.

---

Case IPR2023-00884<sup>1</sup>

U.S. Patent No. 11,253,572

---

**PETITIONER'S REPLY TO  
PATENT OWNER'S RESPONSE**

---

<sup>1</sup> IPR2024-00260 and IPR2024-00298 are joined with IPR2023-00884.

## TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION .....	1
II. THE CHALLENGED CLAIMS ARE OBVIOUS .....	4
A. Grounds IV, VI, VIII: Dixon/2006 PR and Generic/AMD Results Claims .....	5
B. Grounds V, VII, and IX: 2009 PR/DME Claims .....	14
C. PO Is Not Entitled To An Earlier Priority: Grounds II-III.....	18
D. The Results Limitations Lack Patentable Weight: Grounds X and XI.....	23
E. No Secondary Considerations.....	25
III. CONCLUSION.....	26

## TABLE OF AUTHORITIES

Page

### Cases

<i>Apator Miitors ApS v. Kamstrup A/S</i> , 887 F.3d 1293 (Fed. Cir. 2018) .....	22
<i>Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.</i> , 324 F.3d 1308 (Fed. Cir. 2003).....	19
<i>Fox Factory, Inc. v. SRAM, LLC</i> , 944 F.3d 1366 (Fed. Cir. 2019).....	25
<i>Genentech, Inc. v. Chiron Corp.</i> , 220 F.3d 1345 (Fed. Cir. 2000) .....	19
<i>Janssen Pharmaceuticals, Inc. v. Teva Pharmaceuticals, USA, Inc.</i> , 324 F.3d 1308 (Fed. Cir. 2003).....	3, 4, 7
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007).....	2, 7
<i>Los Angeles Biomedical Research Institute v. Eli Lilly &amp; Co.</i> , 849 F.3d 1049 (Fed. Cir. 2017) .....	24
<i>Sensio, Inc. v. Select Brands, Inc.</i> , IPR2013-00580, Paper 31 (PTAB Feb. 9, 2015).....	19
<i>Sonos, Inc. v. Implicit, LLC</i> , No. IPR2018-00767, 2019 WL 4419356, (P.T.A.B. Sept. 16, 2019) .....	19

## TABLE OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 11,253,572
1002	Expert Declaration of Dr. Edward Chaum in Support of Petition for <i>Inter Partes</i> Review of Patent No. 11,253,572, dated April 27, 2023 (“Chaum Decl.”)
1003	Edward Chaum <i>Curriculum Vitae</i>
1004	Institution Decision in <i>Apotex Inc. v. Regeneron Pharmaceuticals, Inc.</i> , IPR2022-01524 (“Apotex ’572 ID”)
1005	Press Release, “Enrollment Completed in Regeneron and Bayer Healthcare Phase 3 Studies of VEGF Trap-Eye in Neovascular Age-Related Macular Degeneration (Wet AMD) (September 14, 2009),” available at: <a href="https://newsroom.regeneron.com/news-releases/news-release-details/enrollment-completed-regeneron-and-bayer-healthcare-phase-3">https://newsroom.regeneron.com/news-releases/news-release-details/enrollment-completed-regeneron-and-bayer-healthcare-phase-3</a> (“2009 Press Release”)
1006	Press Release, “Regeneron and Bayer Report Positive Results for VEGF Trap-Eye in Phase 3 Study in Central Retinal Vein Occlusion (CRVO) and in Phase 2 Study in Diabetic Macular Edema (DME),” Exhibit 99.1 to Regeneron 8-K filed on December 20, 2010, available at: <a href="https://yahoo.brand.edgar-online.com/displayfilinginfo.aspx?FilingID=7617341-6436-23571&amp;type=sect&amp;TabIndex=2&amp;companyid=5036&amp;ppu=%252fdef%E2%80%A6">https://yahoo.brand.edgar-online.com/displayfilinginfo.aspx?FilingID=7617341-6436-23571&amp;type=sect&amp;TabIndex=2&amp;companyid=5036&amp;ppu=%252fdef%E2%80%A6</a> (“December 2010 Press Release”)
1007	Press Release, “Bayer and Regeneron Report Positive Top-Line Results of Two Phase 3 Studies with VEGF Trap-Eye in Wet Age-related Macular Degeneration,” Exhibit 99.1 to Regeneron 8-K filed on November 22, 2010, available at: <a href="https://yahoo.brand.edgar-online.com/displayfilinginfo.aspx?FilingID=7572010-8611-26486&amp;type=sect&amp;TabIndex=2&amp;companyid=5036&amp;ppu=%252fdef%E2%80%A6">https://yahoo.brand.edgar-online.com/displayfilinginfo.aspx?FilingID=7572010-8611-26486&amp;type=sect&amp;TabIndex=2&amp;companyid=5036&amp;ppu=%252fdef%E2%80%A6</a> (“November 2010 Press Release”)
1008	Apotex Petition for IPR filed in <i>Apotex Inc. v. Regeneron Pharmaceuticals, Inc.</i> , IPR2022-01524 (Paper 1) (“Apotex Petition”)
1009	Dixon JA, Oliver SC, Olson JL, Mandava N. VEGF Trap-Eye for the treatment of neovascular age-related macular degeneration. <i>Expert Opin Investig Drugs</i> . 2009;18(10):1573-1580 (“Dixon”)

Exhibit	Description
1010	Major JC et al., “DA VINCI: DME and VEGF Trap-Eye: INvestigation of Clinical Impact: Phase 2 Study in Patients With Diabetic Macular Edema (DME), ARVO Annual Meeting Abstract (April 2010), Vol. 51, Issue 13, available at: <a href="https://iovs.arvojournals.org/article.aspx?articleid=2375028">https://iovs.arvojournals.org/article.aspx?articleid=2375028</a> (“2010 ARVO Abstract”)
1011	Final Written Decision in <i>Mylan Pharmaceuticals Inc. v. Regeneron Pharmaceuticals, Inc.</i> , IPR2021-00881 (Paper 94) (“338 FWD”)
1012	Institution Decision in <i>Mylan Pharmaceuticals Inc. v. Regeneron Pharmaceuticals, Inc.</i> , IPR2022-01225 (Paper 21) (“681 ID”)
1013	Institution Decision in <i>Mylan Pharmaceuticals Inc. v. Regeneron Pharmaceuticals, Inc.</i> , IPR2022-01226 (Paper 22) (“601 ID”)
1014	Certified Prosecution History of U.S. Patent No. 11,253,572 (“572 patent PH)
1015	Adis R&D Profile, Aflibercept: AVE 0005, AVE 005, AVE0005, VEGF Trap - Regeneron, VEGF Trap (R1R2), VEGF Trap-Eye. <i>Drugs R D</i> . 2008;9(4):261-269 (“Adis”)
1016	Hecht, “Ophthalmic Preparations,” Remington: The Science and Practice of Pharmacy, Volume II, 19th edition, Chapter 89 (1995) (“Hecht”)
1017	WO 2006/047325 A1 (“Shams”)
1018	Elman MJ, et al., Randomized trial evaluating ranibizumab plus prompt or deferred laser or triamcinolone plus prompt laser for diabetic macular edema. <i>Ophthalmology</i> . 2010 Jun;117(6):1064-1077.e35 (“Elman 2010”)
1019	Elman MJ, et al., Randomized trial evaluating ranibizumab plus prompt or deferred laser or triamcinolone plus prompt laser for diabetic macular edema. <i>Ophthalmology</i> . 2010 Jun;117(6):1064-1077.e35, published April 28 2010, available at <a href="https://www.aaojournal.org/article/S0161-6420(10)00243-5/fulltext">https://www.aaojournal.org/article/S0161-6420(10)00243-5/fulltext</a> (“Elman AAO Website)
1020	Authenticating Affidavit and the July 13, 2010 Web Archive of the CATT Patient Eligibility Criteria, available at <a href="https://web.archive.org/web/20100713035617/http://www.med.upenn.e">https://web.archive.org/web/20100713035617/http://www.med.upenn.e</a>

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.