IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

IN RE: OZEMPIC (SEMAGLUTIDE) PATENT LITIGATION

No. 22-md-3038-CFC

NOVO NORDISK INC. AND NOVO NORDISK A/S,

Plaintiffs/Counterclaim Defendants,

v.

C.A. No. 22-294-CFC

RIO BIOPHARMACEUTICALS INC., et al.,

Defendants/Counterclaim Plaintiffs.

NOVO NORDISK INC. and NOVO NORDISK A/S,

Plaintiffs/Counterclaim Defendants,

v.

No. 22-cv-1040-CFC

MYLAN PHARMACEUTICALS INC.,

Defendant/Counterclaim Plaintiff.

OPENING EXPERT REPORT OF WILLIAM J. JUSKO, PH.D. REGARDING INVALIDITY OF U.S. PATENT NO. 10,335,462



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TABLE OF ABBREVIATIONS

Full Name of Cited Reference	Abbreviation
U.S. Patent App. Pub. No. 2011/0166321	'321 publication
U.S. Patent No. 10,335,462 (NN-OZEM-000000071-95)	'462 patent
Prosecution History for U.S. Patent No. 10,335,462 (NN-OZEM-000003820-4446)	'462 patent prosecution history
U.S. Patent App. Pub. No. 2004/0102486	'486 publication
U.S. Patent No. 5,512,549	'549 patent
U.S. Patent No. 8,114,833 (SEMA(JDG)_0000447-68)	'833 patent
Bell, Hamster Preproglucagon Contains the Sequence of Glucagon and Two Related Peptides, 302 NATURE 716 (1983)	Bell
Bhansali, <i>Historical Overview of Incretin Based Therapies</i> , 58 J. ASSOC. OF PHYSICIANS OF INDIA 10 (2010) (SEMA(JDG) 0000014-18)	Bhansali
Blonde, Comparison of Liraglutide Versus Other Incretin-Related Anti-Hyperglycaemic Agents, 14 (suppl. 2) DIABETES, OBESITY & METABOLISM 20 (2012)	Blonde
ClinicalTrials.gov Background, CLINICALTRIALS.GOV, https://clinicaltrials.gov/ct2/about-site/background (last visited Mar. 15, 2024)	ClinicalTrials.gov Background
Drab, Incretin-Based Therapies for Type 2 Diabetes Mellitus: Current Status and Future Prospects, 30 PHARMACOTHERAPY 609 (2010)	Drab
FDA Guidance for Industry, Exposure-Response Relationships - Study Design, Data, Analysis, and Regulatory Applications (Apr. 2003)	FDA Exposure Response 2003
Garber, Efficacy of Metformin in Type II Diabetes: Results of a Double-Blind, Placebo-Controlled, Dose-Response Trial, 102 Am. J. MED. 491 (1997)	Garber



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