GLP-1 / GIP / Glucagon Agonist IP Portfolio Analysis

Executive Summary

This report applies the rDNA.ai four-stage KC scoring pipeline to 1,553 recent USPTO biopharma patents in the GLP-1 / GIP / glucagon agonist target class, including 490 patents directly classified into the GLP1_GIP_Glucagon_Triple_Agonist therapeutic area, 349 into GLP1_GIP_Dual_Agonist, 121 into GLP1_Glucagon_Dual_Agonist, and 578 into GLP1_Combination_Product. Each patent is scored on six Key Component (KC) dimensions on a 1–5 scale and aggregated into a four-scheme ensemble (Meta Baseline / AbbVie / Amgen / Genentech weighting), which determines the patent's investment-grade tier.

Portfolio-level results are summarized below by therapeutic-area cut, by top assignee, and at the patent level for the top decile after a V2 pairwise-tournament calibration. The GLP1_GIP_Glucagon_Triple_Agonist cut is the strongest in the corpus (mean ensemble 4.802; 380 of 490 patents at TIER 1 PREMIUM), reflecting the concentrated platform IP held by Sanofi, Hanmi Pharm, Terns Pharmaceuticals, Pfizer, Gasherbrum Bio, Gilead Sciences, Kallyope, the Indiana University Research and Technology Corporation (DiMarchi lab), Amgen, Novo Nordisk, MedImmune, Shattuck Labs, Takeda Pharmaceutical Company, Merck Sharp & Dohme, the California Institute for Biomedical Research / Scripps Research Institute consortium, Zealand Pharma, XL-Protein / Technische Universität München, Regeneron, OPKO Ireland, and Amunix Pharmaceuticals.

This is one of an expanding set of target-class KC Quality Analyses generated from a four-stage KC scoring pipeline applied to all USPTO biopharma issued and published patents assigned to each of the 25 most active global biopharma companies from January 2020 through April 2026. A parallel Top-25 Consolidated cross-portfolio analysis covering all 14,552 company patents in the biopharma cohort is available upon request.

Key Component (KC) Scoring Framework

Each patent is scored on six Key Component (KC) dimensions on a 1–5 scale. The ensemble score is the mean of the six dimensions (with confidence and standard deviation tracked alongside).

- **KC1** measures abstract and therapeutic specificity: target specificity, therapeutic positioning, structural disclosure, and technical differentiation.
- **KC2** measures independent-claim quality: scope, structure, enforceability, and enablement vulnerability.
- **KC3** measures dependent-claim quality: fallback hierarchy, embodiment coverage, prosecution flexibility, and structural diversity.
- **KC4** measures novelty and differentiation: prior-art positioning, inventive-step quality, and field positioning.
- **KC5** measures specification enablement: enablement gap, structure-function insight, data breadth, and translational completeness.
- **KC6** measures working examples: working/prophetic example quality, structural diversity, experimental rigor, and in vivo / translational validation.

Portfolio-Level Metrics

• Total GLP-1 USPTO records ingested: 1,719 candidate publications/grants (publication dates from 2016-01-01 forward, retrieved via USPTO PPubs full-text discovery search carried out in May 2026)

• Title and full-spec classification: Biopharma=1,553, Diagnostic=75, Device=65, Non_Biopharma=26

• Total Biopharma patents scored: 1,553 (all with confirmed assignee)

• Average KC scores — KC1: 4.99 KC2: 4.72 KC3: 3.92 KC4: 4.17 KC5: 4.32 KC6: 4.83

• Average ensemble mean across portfolio: 4.497

Investment-grade distribution:

• TIER_1_PREMIUM: 704

• TIER_2_STRONG: 552

• TIER_3_WATCHLIST: 249

• LOW_PRIORITY: 48

Top Assignees

Rank	Assignee	Patent Count
1	NOVO NORDISK A/S	123
2	SANOFI	68
3	ZEALAND PHARMA A/S	51
4	ELI LILLY AND COMPANY	47
5	HANMI PHARM. CO., LTD	46
6	PFIZER INC	42
7	GASHERBRUM BIO, INC	35
8	MERCK SHARP & DOHME CORP	30
9	AMGEN INC	26
10	REGENERON PHARMACEUTICALS, INC	26
11	TERNS PHARMACEUTICALS, INC	25
12	SANOFI-AVENTIS DEUTSCHLAND GMBH	25
13	MEDIMMUNE LIMITED	19

Rank	Assignee	Patent Count
14	BOEHRINGER INGELHEIM INTERNATIONAL GMBH	19
15	GILEAD SCIENCES, INC	17

Therapeutic Area Analysis

Six therapeutic-area buckets in the GLP-1 biopharma cohort receive their own KC breakdown. For each area: average KC1–KC6 (1–5 scale), average ensemble mean, average TA-weighted score, and tier distribution. GLP1_GIP_Glucagon_Triple_Agonist carries TA multiplier 1.10; GLP1_GIP_Dual_Agonist 1.08; GLP1_Glucagon_Dual_Agonist 1.07; GLP1_Single_Agonist 1.05; GLP1_Combination_Product 1.03; GLP1_Formulation_Delivery 1.00.

Therapeutic Area	N	KC1	KC2	KC3	KC4	KC5	KC6	Ens Mean	TA-W	T1 Prem	T2 Strong	T3 Watch	Low
GLP1_Combination_Product	578	4.99	4.42	3.83	2.88	4.08	4.61	4.072	4.194	0	314	223	41
GLP1_GIP_Glucagon_Triple_Agonist	490	5.00	4.92	4.02	4.99	4.68	4.99	4.802	5.282	380	107	3	0
GLP1_GIP_Dual_Agonist	349	5.00	4.89	3.98	4.95	4.21	4.95	4.726	5.104	239	94	16	0
GLP1_Glucagon_Dual_Agonist	121	5.00	4.92	3.83	4.98	4.54	5.00	4.755	5.088	85	36	0	0
GLP1_Formulation_Delivery	10	4.80	3.80	3.40	2.70	2.60	3.30	3.545	3.545	0	1	5	4
GLP1_Single_Agonist	5	4.80	3.80	1.80	3.20	2.80	3.00	3.422	3.593	0	0	2	3

Therapeutic Area Narratives

GLP1_GIP_Glucagon_Triple_Agonist (n=490)

Average ensemble mean: 4.802. Highest KC: KC1 / KC4 / KC6 (avg ≈ 5.00). Lowest KC: KC3 (avg 4.02). TIER_1_PREMIUM: 380, TIER_2_STRONG: 107. Top 3 patents (by TA-weighted score): US10100097B2; US10253079B2; US10294303B2.

GLP1_GIP_Dual_Agonist (n=349)

Average ensemble mean: 4.726. Highest KC: KC1 (avg 5.00). Lowest KC: KC3 (avg 3.98). TIER_1_PREMIUM: 239, TIER_2_STRONG: 94. Top 3 patents: US10028952B2; US10189912B2; US10688186B2.

GLP1_Glucagon_Dual_Agonist (n=121)

Average ensemble mean: 4.755. Highest KC: KC6 (avg 5.00). Lowest KC: KC3 (avg 3.83). TIER_1_PREMIUM: 85, TIER_2_STRONG: 36. Top 3 patents: US10413593B2; US10618968B2; US11492385B2.

GLP1_Combination_Product (n=578)

Average ensemble mean: 4.072. Highest KC: KC1 (avg 4.99). Lowest KC: KC4 (avg 2.88). TIER_2_STRONG: 314, TIER_3_WATCHLIST: 223. Top 3 patents: US10639308B2; US10786576B2; US11130794B2.

GLP1_Formulation_Delivery (n=10)

Average ensemble mean: 3.545. Highest KC: KC1 (avg 4.80). Lowest KC: KC5 (avg 2.60). TIER_2_STRONG: 1, TIER_3_WATCHLIST: 5, LOW_PRIORITY: 4. Top 3 patents: US20250255977A1; US20260124280A1; US20160228494A1.

GLP1_Single_Agonist (n=5)

Average ensemble mean: 3.422. Highest KC: KC1 (avg 4.80). Lowest KC: KC3 (avg 1.80). TIER_3_WATCHLIST: 2, LOW_PRIORITY: 3. Top 3 patents: US20200237876A1; US20240316159A1; US20240415935A1.

Top-Decile Calibration: Pairwise Tournament Results

The top decile (n=156) of the GLP-1 biopharma cohort was re-judged against the V2 rubric using full-text specifications and a complete 12,090-pair pairwise tournament. The V2 calibration replaced the prior uniform top-decile plateau (every patent KC=5, ta_weighted=5.5) with a discriminating ranking; calibrated ensemble distribution: mean 3.870, range 3.042–4.375.

The calibration produced a pronounced restructuring within the top decile: per-patent rank #1 is OPKO Ireland's oxyntomodulin formulation patent (US20200262887A1, 155-0 pairwise), promoted from original rank 74; rank #2 is Takeda's GIP receptor agonist peptide compounds patent (US20220016215A1, 154-1), promoted from original rank 92; rank #3 is Amunix's XTEN conjugate platform (US10953073B2, 153-2), promoted from rank 16; ranks #4 and #6 are Indiana University (DiMarchi lab) glucagon analog and incretin-insulin conjugate filings, promoted from ranks 33 and 45 respectively; rank #5 is the California Institute for Biomedical Research / Scripps Research Institute modified therapeutic agents patent (US20160287713A1), promoted from rank 38. Sanofi's first patent appears at calibrated rank #8 (US10253079B2, functionalized exendin-4 derivatives, 148-7) and Hanmi's first appears at rank #9 (US10400020B2, long-acting triple agonist conjugate, 147-8). The calibration confirms the assignee-aggregate ranking (Sanofi #1 by patent count with 19 top-decile patents; Hanmi #2 with 18; Terns #3 with 11; Pfizer #4 with 10) while surfacing that the densest current foundational filing layer at the per-patent level includes academic labs and platform-IP holders (Indiana University, Scripps consortium, Amunix XTEN, OPKO oxyntomodulin formulation, Takeda GIP) interleaved with the corporate filers.

Top-Decile Assignee Ranking

Top-decile assignees are ranked by frequency in the calibrated top-decile cohort, then by best calibrated patent rank, then by average calibrated ensemble mean.

Rank	Assignee	Count	Best Patent Rank	Avg Cal Rank	Avg Cal Ens
1	SANOFI	19	8	77.42	3.887
2	HANMI PHARM. CO., LTD	18	9	70.44	3.926

Rank	Assignee	Count	Best Patent Rank	Avg Cal Rank	Avg Cal Ens
3	TERNS PHARMACEUTICALS, INC	11	95	123.09	3.573
4	PFIZER INC	10	48	107.90	3.639
5	GASHERBRUM BIO, INC	8	87	116.88	3.646
6	GILEAD SCIENCES, INC	7	103	122.14	3.580
7	KALLYOPE, INC	7	121	127.43	3.540
8	INDIANA UNIVERSITY RESEARCH AND TECHNOLOGY CORPORATION	5	4	13.20	4.266
9	MEDIMMUNE LIMITED	4	16	33.25	4.150
10	AMGEN INC	4	19	65.00	3.963
11	NOVO NORDISK A/S	4	63	90.50	3.781
12	SHATTUCK LABS, INC	3	12	26.33	4.225
13	TAKEDA PHARMACEUTICAL COMPANY LIMITED	3	30	53.33	4.075
14	MERCK SHARP & DOHME CORP	3	40	74.00	3.951
15	THE CALIFORNIA INSTITUTE FOR BIOMEDICAL RESEARCH; THE SCRIPPS RESEARCH INSTITUTE	2	5	11.00	4.277

Bottom-Decile Assignee Ranking

Bottom-decile assignees are ranked by frequency in the bottom GLP-1 biopharma decile, then by weaker average original ensemble score.

Rank	Assignee	Count	Avg Original Score	Weakest Score
1	NOVO NORDISK A/S	30	2.793	2.140
2	SANOFI-AVENTIS DEUTSCHLAND GMBH	13	2.732	2.140
3	MANNKIND CORPORATION	5	3.058	2.762
4	ADOCIA	4	2.748	2.140
5	CHUGAI SEIYAKU KABUSHIKI KAISHA	4	2.960	2.438
6	ZEALAND PHARMA A/S	4	3.164	2.762
7	NEW FRONTIER LABS, LLC	4	3.381	3.312
8	HELDRETH, JR.; DAVID ALAN	3	2.140	2.140
9	HANGZHOU ZHONGMEI HUADONG PHARMACEUTICAL CO., LTD	3	2.791	2.438
10	LG CHEM, LTD	3	2.849	2.762

Rank	Assignee	Count	Avg Original Score	Weakest Score
11	INSULET CORPORATION	3	2.888	2.762
12	GLYSCEND, INC	3	2.965	2.762
13	SCINOPHARM TAIWAN, LTD	2	2.438	2.438
14	ELI LILLY AND COMPANY	2	2.525	2.438
15	ENZENE BIOSCIENCES LIMITED	2	2.762	2.762

Top 15 Tournament Calibration GLP-1 Patents

#1 US20200262887A1 — OPKO IRELAND GLOBAL HOLDINGS, LTD

Oxyntomodulin peptide analog formulations

Calibrated KC profile: KC1=5, KC2=4, KC3=5, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.375; pairwise record=155-0.

OPKO Ireland oxyntomodulin peptide analog formulations: 137 claims (1 independent / 136 dependent), ~97,100 words, 36 SEQ IDs, 11 worked examples, 8/8 data-type categories present. Oxyntomodulin is a natural GLP-1 / glucagon dual agonist; the spec covers a broad analog series with formulation, dosing, and indication claims spanning T2D and obesity. V2 surfaced this as the calibrated #1 because the dependent-claim hierarchy (D1=5, D2=5, D3=5) is dense across formulation, dose, route, and indication, and the spec carries 8/8 data types (in vitro / cell-based / selectivity / in vivo / PK / dose-response / formulation / analytical). Promoted from original rank 74; the V2 calibration's most pronounced single rank delta in the GLP-1 corpus.

#2 US20220016215A1 — TAKEDA PHARMACEUTICAL COMPANY LIMITED

GIP receptor agonist peptide compounds and uses thereof

Calibrated KC profile: KC1=5, KC2=4, KC3=5, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.375; pairwise record=154-1.

Takeda GIP receptor agonist peptide compounds: 100 claims, ~95,500 words, 171 SEQ IDs, 10 examples. Markush formula over 42 amino acid positions with specified P1 / P2 termini and proviso excluding native human GIP. Calibrated at #2 on platform breadth (single GIP agonism is a less-crowded subfield than GLP-1) plus deep enablement (E3=5, E4=5) and structural anchoring (A3=5, C2=4). Calibration haircut on novelty (N3=2) reflects the standard "not native GIP" proviso pattern. Promoted from original rank 92.

#3 US10953073B2 — AMUNIX PHARMACEUTICALS, INC

XTEN conjugate compositions and methods of making same

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=5, KC6=4; calibrated ensemble=4.328; pairwise record=153-2.

Amunix XTEN conjugate platform: 383 claims, ~196,000 words, 416 SEQ IDs, 78 worked examples, 8/8 data types, in-vivo strength=5/6. XTEN is an extended recombinant polypeptide platform usable for half-life extension of GLP-1 / oxyntomodulin / exenatide payloads.

Calibrated at #3 on E1=5 exhaustive enablement, dense working-example breadth, and platform-defining structural disclosure. Promoted from original rank 16.

#4 US20160115215A1 — INDIANA UNIVERSITY RESEARCH AND TECHNOLOGY CORPORATION

Glucagon analogs exhibiting GIP receptor activity

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=5, KC6=4; calibrated ensemble=4.328; pairwise record=152-3.

Indiana University glucagon analogs exhibiting GIP receptor activity: 37 claims, ~137,400 words, 509 SEQ IDs, 63 examples. DiMarchi / Indiana foundational incretin biochemistry IP — referenced in the field as a precursor to the Hanmi long-acting conjugate program and the Lilly tirzepatide series. Calibrated at #4 on dense structural and pharmacology disclosure plus pioneer signal in dual / triple agonism. Promoted from original rank 33.

#5 US20160287713A1 — THE CALIFORNIA INSTITUTE FOR BIOMEDICAL RESEARCH; THE SCRIPPS RESEARCH INSTITUTE

Modified therapeutic agents and compositions thereof

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=5, KC6=4; calibrated ensemble=4.328; pairwise record=151-4.

Scripps / California Institute for Biomedical Research modified therapeutic agents: 128 claims, ~105,000 words, 147 SEQ IDs, 35 examples, 8/8 data types. Academic GLP-1 platform IP. Calibrated at #5 on enablement breadth and embodiment coverage. Promoted from original rank 38.

#6 US20170281788A1 — INDIANA UNIVERSITY RESEARCH AND TECHNOLOGY CORPORATION

Incretin-insulin conjugates

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=5, KC6=4; calibrated ensemble=4.328; pairwise record=150-5.

Indiana University incretin-insulin conjugate platform: 44 claims, 1,785 SEQ IDs, 31 examples, ~139,000 words. DiMarchi / Indiana single-molecule incretin-insulin co-agonist IP. Calibrated at #6 on N1=5 (sparse prior art for incretin-insulin co-agonism) and full structural disclosure breadth. Promoted from original rank 45.

#7 US10100097B2 — ZEALAND PHARMA A/S

GIP-GLP-1 dual agonist compounds and methods

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=149-6.

Zealand Pharma GIP-GLP-1 dual-agonist composition: 30 claims, ~34,900 words, 118 SEQ IDs, 12 worked examples, full Markush formula I' over 42 amino acid positions with R1/R2 termini and pharmaceutically acceptable salts. Effect demonstrated vs. liraglutide on glucose tolerance, body weight, and food intake in DIO mice. Calibrated at #7 reflecting strong claim architecture and translational data within the

dual-agonist subfield, calibrated below the platform-IP and academic leaders on enablement breadth. The original GPT55 rank #1, calibrated to #7 once sub-dimension reads dissolved the plateau.

#8 US10253079B2 — SANOFI

Functionalized exendin-4 derivatives

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=148-7.

Sanofi functionalized exendin-4 derivatives: 30 claims, ~44,700 words, 224 SEQ IDs, 36 examples, 72 figures. Defines a peptide series with fatty-acid acylation positions, lactam bridges, and side-chain mutations anchored against the foundational exendin-4 backbone. Multi-week DIO mouse studies (n=20+ animals per arm). Calibrated at #8 — the highest-ranked Sanofi top-decile patent — and the lead patent in Sanofi's #1-by-count assignee position.

#9 US10400020B2 — HANMI PHARM. CO., LTD

Long-acting conjugate of triple glucagon/GLP-1/GIP receptor agonist

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=147-8.

Hanmi long-acting GLP-1 conjugate (Fc-fusion + DSG3 linker class): 18 claims (top-decile flagship for Hanmi's #2-by-count assignee position), ~40,700 words, 101 SEQ IDs, 12 examples. 18 half-life references, 8 oral references, extensive subcutaneous dosing. Calibrated at the top of the Hanmi long-acting conjugate cluster.

#10 US10696725B2 — HANMI PHARM. CO., LTD

Glucagon derivative and a composition comprising a long-acting conjugate of the same

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=146-9.

Hanmi second-generation long-acting conjugate: 40 examples, 25 half-life references, 16 figures. Continuation of the long-acting Fc-fusion platform (US10400020B2). Calibrated within the upper Hanmi cluster.

#11 US11401305B2 — XL-PROTEIN GMBH; TECHNISCHE UNIVERSITÄT MÜNCHEN

Nucleic acids encoding repetitive amino acid sequences rich in proline and alanine residues that have biological activities of incretin-related peptides

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=145-10.

XL-Protein PASylation incretin platform: ~97,343 words, 100 claims (1 independent / 99 dependent), 56 examples, 1,330 SEQ IDs, 7/8 data types, in-vivo strength=2/6. Triple-agonist platform signal detected; pioneer signals (oral peptide / non-peptide GLP-1RA / triple agonism). Phase 3 / NCT trial markers in spec. Calibrated mid-top-decile reflecting strong claim architecture and platform breadth, with translational depth slightly behind the Indiana / Scripps academic leaders.

#12 US12492236B2 — SHATTUCK LABS, INC

Fusion proteins for the treatment of cardiometabolic diseases

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=144-11.

Shattuck Labs fusion-protein platform for cardiometabolic disease: ~207,647 words, 68 claims (1 independent / 67 dependent), 15 examples, 1,097 SEQ IDs, 8/8 data types, in-vivo strength=5/6. Triple-agonist platform signal detected; pioneer signals (oral peptide / non-peptide GLP-1RA / triple agonism). Phase 3 / NCT trial markers in spec. Calibrated within the upper-mid top decile on platform breadth and full data-type coverage.

#13 US20160024169A1 — INDIANA UNIVERSITY RESEARCH AND TECHNOLOGY CORPORATION

Insulin-incretin conjugates

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=143-12.

Indiana University insulin-incretin conjugate publication: ~129,876 words, 43 claims (1 independent / 42 dependent), 19 examples, 1,860 SEQ IDs, 7/8 data types, in-vivo strength=2/6. Companion to US20170281788A1 (rank #6); same DiMarchi-lab single-molecule incretin-insulin co-agonist program. Calibrated at #13 reflecting deep structural disclosure and dense fallback hierarchy, slightly below the granted continuation on translational depth.

#14 US20160058881A1 — INDIANA UNIVERSITY RESEARCH AND TECHNOLOGY CORPORATION

Prodrugs with prolonged action

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=142-13.

Indiana University prolonged-action incretin prodrug platform: ~271,534 words, 50 claims (1 independent / 49 dependent), 22 examples, 2,851 SEQ IDs, 7/8 data types, in-vivo strength=5/6. Companion DiMarchi-lab filing covering prodrug strategies for half-life extension across the incretin family. Calibrated at #14 on dense disclosure and example breadth.

#15 US20160075778A1 — REGENERON PHARMACEUTICALS, INC

Anti-glucagon antibodies and uses thereof

Calibrated KC profile: KC1=5, KC2=4, KC3=4, KC4=4, KC5=4, KC6=4; calibrated ensemble=4.225; pairwise record=141-14.

Regeneron anti-glucagon antibody platform: ~41,698 words, 160 claims (1 independent / 159 dependent), 13 examples, 54 SEQ IDs, 7/8 data types, in-vivo strength=3/6. Anti-glucagon antibody approach to GLP-1-axis therapy (an alternative to peptide-agonist mechanisms). Calibrated at #15 on strong claim architecture and Phase 2 / clinical-trial language present in spec, calibrated below the peptide-agonist platform leaders on data-type breadth.

Methodology

The initial GLP-1 analysis ingested 1,719 USPTO records, classified 1,553 as Biopharma, 75 as Diagnostic, 65 as Device, and 26 as Non-Biopharma. The 1,553 biopharma patents were assigned to one of six therapeutic-area buckets (GLP1_GIP_Glucagon_Triple_Agonist, GLP1_GIP_Dual_Agonist, GLP1_Glucagon_Dual_Agonist, GLP1_Combination_Product, GLP1_Formulation_Delivery, GLP1_Single_Agonist).

All KC scoring was performed by LLM agents reading the local full-spec corpus (abstract + independent claims + dependent claims + specification body). Ensemble scoring applied four weighting schemes (Meta Baseline / AbbVie / Amgen / Genentech) aggregated into ensemble_mean ± ensemble_std with HIGH / MODERATE / LOW confidence. Tier thresholds are absolute (TIER 1 PREMIUM ≥ 4.5; TIER 2 STRONG 4.0–4.49; TIER 3 WATCHLIST 3.0–3.99; LOW_PRIORITY < 3.0).

The top-decile calibration cohort was operationalized as the 156 patents in the top decile of the GLP-1 biopharma cohort (GLP1_Decile_Cohorts.csv). The original top-decile plateau assigned all 156 patents KC1–KC6=5 and TA-weighted score=5.5. The V2 calibration intentionally re-read the top-decile patent specifications against the V2 rubric (24 sub-dimensions A1–W4), derived KC composites by the rubric-specified rule (KC1 and KC5 = median of sub-dimensions, KC2–KC4 and KC6 = holistic), and ran a complete pairwise tournament (12,090 pairs) to separate platform composition-of-matter and pioneer triple-agonist / academic-incretin filings from narrower follow-on, formulation-only, or crowded-prior-art assets. The same-LLM, separate-session protocol is consistent with the KRAS, Epigenome, and TL1A exemplars in the rDNA.ai LinkedIn series. Detailed calibration outputs are available in Top_Decile_KC_Calibration_20260508/ (GLP1_Top_Decile_V2_Calibrated_KC_Scores.csv, GLP1_Top_Decile_Pairwise_Tournament.csv, GLP1_Top_Decile_Assignee_Rankings.csv, GLP1_Bottom_Decile_Assignee_Rankings.csv, GLP1_Bottom_Decile_V2_Calibrated_KC_Scores.csv, GLP1_Top_Decile_Calibration_Summary.csv) and in the companion GLP1_IP_Portfolio_Analysis_V2_Calibrated.docx report.