DEX RESEARCH / INDUSTRY REPORT

生物多肽与 GLP-1 产业链

Therapeutic Peptides and the GLP-1 Value Chain

从原料到长期治疗：规模化生产之后，价值流向哪里？

From ingredients to chronic care: where value moves after scale-up



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中文审核版与完整英文稿

Chinese review edition and complete English manuscript

封面为 AI 生成的产业概念插图，不是实际工厂、药品或分子结构的照片。无品牌装置与片剂仅用于示意。
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中文正文

版本 1.0｜全球视角，兼顾中国供应链｜研究截止：2026 年 10 月 21 日。正文中的年度、滚动十二个月与半年数据分别标注，不视为同一统计期。本文将“生物多肽”限定为治疗性多肽及其制药供应链，不纳入食品、化妆品、胶原蛋白水解物及未经批准的保健肽市场。GLP-1 范围包括单受体激动剂及含 GLP-1 活性的双／多受体药物；非肽类 GLP-1 药物仅作为替代竞争讨论。本报告为产业研究，不构成诊疗、用药或投资建议。

P1 行业故事

三座工厂，比一支减重针更能解释产业

2024 年 12 月 18 日，诺和诺德宣布完成从 Novo Holdings 收购三座生产基地。交易背后有两个不同主体：Novo Holdings 收购的是 Catalent，而诺和诺德接手的是其中三座灌装基地。到 2026 年 6 月，Catalent 仍专门发文澄清，美国 Bloomington 基地已经由诺和诺德拥有和运营，不能继续算作 Catalent 的生产网络。[E01][E02]

一家拥有畅销药的公司为何还要争取灌装工厂？因为获批的分子不会自动变成可交付的药品。原料药必须经过制剂、无菌灌装、包装、检测放行和配送；其中任何一个环节扩产较慢，前端合成能力就无法全部变成销售。这里没有一份收购公告能证明某座工厂当期生产了多少 GLP-1，但交易本身足以说明：下游生产控制权已经具有战略价值。

2025 年 2 月 21 日，美国 FDA 判定司美格鲁肽注射剂的全国性短缺已解决，同时说明局部药房仍可能缺货。[E03] 这两个判断并不矛盾。总量供需平衡与某个患者在某地、某天拿到某一规格，是不同的问题。由此看这条产业链，真正出售的最终产品，是持续、合规、可负担的治疗服务所需的一整套供给能力。

先拆开三个容易混淆的市场

第一层是治疗性多肽：以多肽为活性成分的药物与相关生产服务，GLP-1 只是其中的重要分支。第二层是 GLP-1 相关药物：按药理机制归类，既可能是多肽，也可能是非肽小分子。第三层才是肥胖用药市场：按适应证归类，同一种分子可以对应不同品牌、剂型和适应证。三者有交集，却不能互换。

这一区分在 2026 年已经产生实际商业后果。口服 Wegovy 获得美国批准，说明“口服”不等于“非肽”；Foundayo（orforglipron）则是已获美国批准的非肽口服 GLP-1 药物，可能争取相同患者，却不会以同样方

式拉动多肽原料需求。[M03][M04] 糖尿病、肥胖及其他适应证的获批范围必须逐产品、逐地区核对，不能把试验结果当作全球上市许可。

需求很大，但不能直接换算成收入

WHO 在 2026 年 10 月更新的资料显示，2024 年全球约 9.4 亿名成年人患有肥胖，约占成年人 16%。[E04] 这是公共卫生需求的背景，不是药品可服务市场的直接分母。诊断、适应证、禁忌、支付能力、报销、医生资源与持续使用，都会影响实际治疗人数。

本报告的核心判断是：行业正从“能否增加供给”走向“新增供给能否被验证、被持续使用并获得支付”。多肽供应商的增长取决于产品组合、单个患者所需的原料量、客户是否外包，以及价格与良率；品牌药企业的增长还取决于临床证据与渠道。需求增长可以同时发生在终端，利润压力也可以同时发生在工厂。

P2 产业链结构

上游：反应所需的材料，与合规所需的证据

化学合成路线从受保护氨基酸、树脂载体、偶联与脱保护试剂、溶剂等投入开始。供应商卖的并非仅是一桶化学品，还包括批次一致性、杂质控制、稳定供应和文件追溯。随着药物进入商业化，原材料变更可能影响工艺与质量，便宜的替代物未必能立即切换。代表公司及其已核实业务见产业链脑图和附录；类别连接不代表已确认的供货合同。[C01][C02]

设备侧包括合成反应装置、制备色谱、过滤与浓缩、冻干、分析仪器及配套耗材。设备销售、一次性耗材与持续服务对应不同现金流：一次扩产可带来大额设备订单，日常生产则拉动耗材。不能把一种反应器的体积、树脂装载量或名义吨数直接换算为最终药品产量。

生物制造路线则增加细胞体系、培养基、发酵与生物分离的要求。EMA 的 Ozempic 产品信息明确记载其司美格鲁肽通过酿酒酵母细胞重组 DNA 技术生产。[E06] 因而，多肽产业不能被简化成一个固相合成市场；分子、知识产权与制造路线不同，所需设备和供应商也不同。

中游：把序列变成可放行的原料药

固相多肽合成可以理解为在载体上逐步连接氨基酸，再进行后处理；工业生产还涉及修饰、分离纯化、杂质鉴定、工艺验证和质量放行。每一步的不完全反应与副反应都会影响后续纯化难度。商业价值不只

在“能做出”，更在同一规格下反复做出并准时交付。不同产品采用固相、液相、片段组合、重组或混合路线，不能假定所有 GLP-1 共用一套工艺。[C03][E06]

Bachem、PolyPeptide 和 CordenPharma 是代表性专业多肽制造企业；中国相关能力包括药明康德的 WuXi TIDES 等平台。这里应把公司、平台和业务口径分清：TIDES 包括多肽与寡核苷酸，其整体收入并非 GLP-1 收入。某公司具备 GLP-1 工艺能力，也不证明它供应某个已上市品牌。[C04][C05][C06][C12]

CDMO 的收入可能来自早期工艺开发、临床批次、技术转移、商业批次及产能安排。开发阶段项目多，不一定意味着近期吨位大；单一商业品种吨位大，也可能形成客户集中风险。对客户而言，切换供应商需要技术与质量工作，产生黏性；对供应商而言，客户自建产能、项目失败或需求预测调整又会压低利用率。

中国供应链的参与并不限于一家平台。凯莱英披露了多肽开发项目、商业与验证阶段项目以及片段组合等工艺；诺泰生物提供多肽 API、CMC 与制剂服务。它们对应不同客户需求，不能把项目数量、综合业务收入和实际 GLP-1 产量互相代替。CordenPharma 的跨欧美扩产计划则说明国际平台同样在投资，但计划中的 2028 年商业启动不能计入 2026 年已投产能力。[C09][C11][C12]

中下游接口：制剂、灌装与装置

原料药之后，注射剂还需要配方稳定性、容器密闭系统、无菌工艺、灌装检测与装置可靠性。笔式注射器、预充式注射器、药筒和西林瓶并非只有外形差别：剂量准确性、操作步骤、包装材料、供应商验证和生产线适配都不同。平台设备供应商的公开产品可以说明其能力，但不能据此推定某品牌采购了该平台。[C07]

口服多肽减少了对注射装置的依赖，却把挑战转移到稳定性、吸收与给药条件。2025 年获批的 Wegovy 片剂标签列明每日 25 mg 维持剂量及空腹等要求；2026 年 FDA 又批准了每周 7.2 mg 的更高剂量注射产品。[E07][E08] 这些数字在本报告中仅用于说明制造需求会受剂型与强度影响，不是用药建议，也不应据此比较临床优劣。

供应链推论是：同样数量的患者，在不同剂型下可能对应非常不同的原料需求和包装需求。因此“处方增长百分比”不能直接套用到多肽 API 吨位增长上。一个可信的工厂需求模型，还需要实际剂型组合、使用持续时间、爬坡良率、库存与客户外包比例。

下游：谁决定药能卖出去

品牌药企业把临床开发、注册、知识产权、生产网络和商业渠道整合起来。医生与医疗机构决定诊断和处方；支付方与药品福利管理等机构影响覆盖和患者实际负担；批发、零售药房与经授权的线上服务负责交付。各国医疗与支付体系不同，这些角色的重要性也不同。

品牌售价不是 API 厂商可获得的价格池。品牌收入还负担研发、失败项目、证据生成、合规、营销、渠道及生产组织成本；同时，批发标价、患者自费价和制造商实现净价也不能混用。WHO 的 2025 年指南将成本、卫生系统准备和公平可及列为条件性建议的重要考量。[E05] 因而，支付和服务能力与化学合成能力共同决定行业的有效需求。

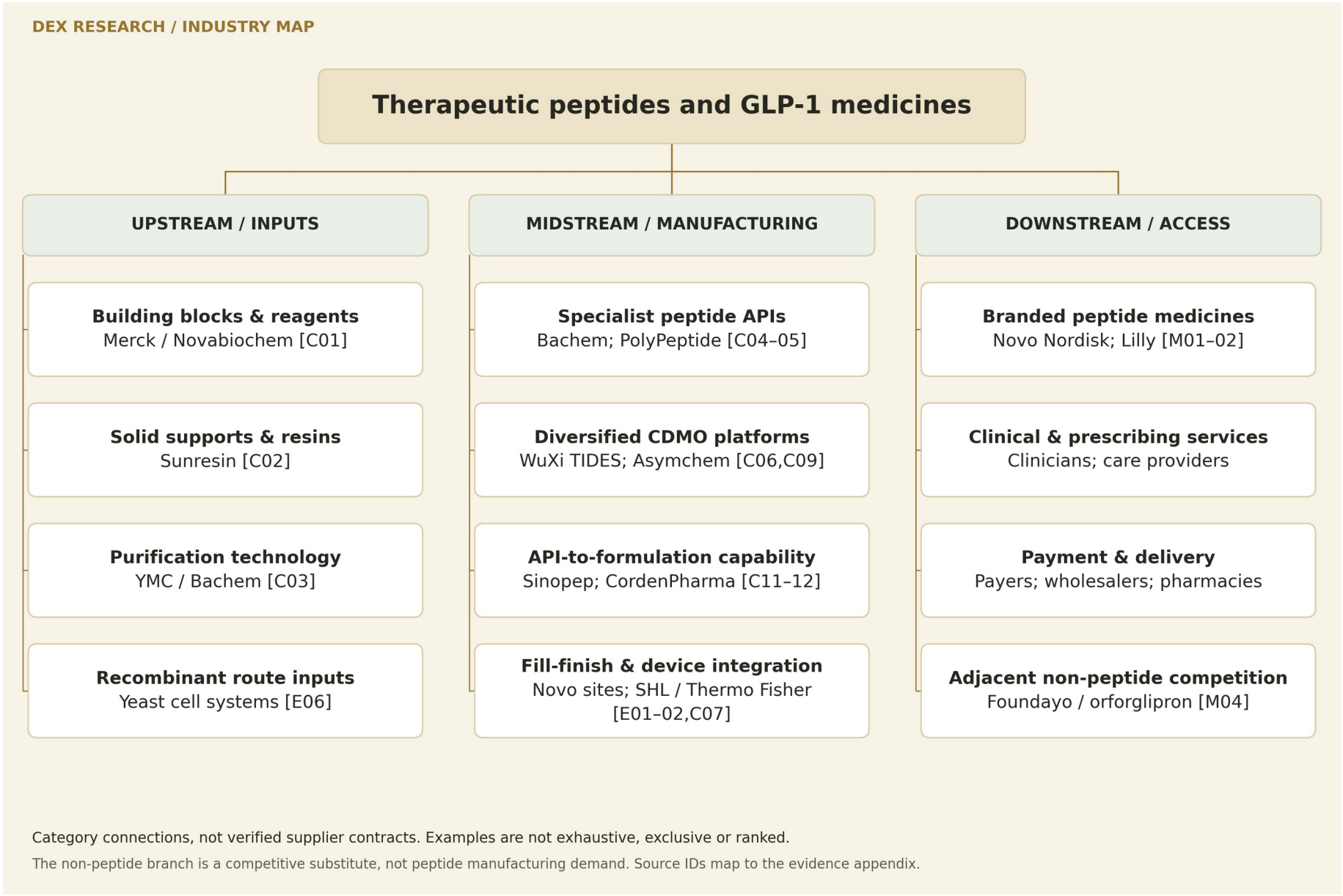


图 1｜治疗性多肽与 GLP-1 产业链。类别连接不代表供货合同；公司示例不完整、不互斥、不排序。非肽类分支仅为替代竞争。

P3 市场格局

先看可比份额，再看财务规模

诺和诺德 2025 年财务报告转述 IQVIA 数据：在截至 2025 年 11 月的滚动十二个月中，其全球 GLP-1 糖尿病市场价值份额为 45.8%，上年同期为 55.1%，下降 9.3 个百分点。[M01] 本文环形图只分为“诺和诺德 45.8%”与“其他厂商合计 54.2%”；后者是 100% 减去前者，不能全部标作礼来。

这个分母有严格限制：它是来源定义的 GLP-1 糖尿病价值市场，国际业务口径把替尔泊肽归入糖尿病，即使当地也有肥胖适应证；部分地区覆盖不完整。它不是全球全部肥胖药、多肽原料药或 CDMO 份额，也不是审计后的制造商净销售额。本文保留该历史统计期，不把它伪装成 2026 年 10 月实时份额。[M01]

财务规模则另看公司披露。诺和诺德 2025 年 GLP-1 糖尿病销售额为 1,522.02 亿丹麦克朗，肥胖治疗销售额为 823.47 亿丹麦克朗。礼来同期 Mounjaro 与 Zepbound 全球收入分别为 229.65 亿美元与 135.42 亿美元，合计 365.07 亿美元。[M01][M02] 不同币种没有在这里强行合并；不同市场的品牌与适应证也不完全一致。两家公司上述收入不能用来推算完整产业链份额。

2026 年的增长，需要剥开口径

礼来 2026 年上半年 Mounjaro 与 Zepbound 收入分别为 186.05 亿美元与 90.88 亿美元，合计 276.93 亿美元；Foundayo 上半年收入为 0.98 亿美元。[M06] 新产品有收入，证明商业化已经开始，但较小的上市初期基数不支持长期份额外推。

诺和诺德 2026 年上半年报表包含 267.60 亿丹麦克朗的美国 340B 准备金转回，总报告收入与调整后收入分别为 1,753.11 亿和 1,485.51 亿丹麦克朗。[M05] 因而，不能把报告收入的变动全部解释为多卖了多少药，更不能转换成 API 需求增长。比较增长前应核对会计调整、币种、净价格、产品组合和统计区间。

对产业链研究来说，更有用的问题是：品牌的净价与销量如何分解；制造商使用自产还是外包；新增需求来自口服多肽、注射多肽还是非肽药；渠道增加的是新患者、转药还是短期库存。只有这些变量能将药品销售连接到具体供应商订单。

竞争分成三层，不是一张药企排行榜

第一层是具有临床证据、注册、品牌与渠道的原研企业。诺和诺德与礼来的商业规模已经很大，但它们也通过自身制造网络参与中游。外包供应商面对的市场，是原研企业总需求扣除自产及其他未开放部分后的机会，而不是全部终端收入。

第二层是专业制造与工艺平台。它们通过质量体系、放大能力、交付记录和技术转移能力争取项目。Bachem 新厂开始商业 GMP 批次、PolyPeptide 新资产达到目标利用率，展示了竞争从“宣布建设”走向“能否稳定生产”。其厂商自述产能不是经独立统计的行业份额。[C04][C05]

第三层是新分子、新剂型、仿制产品与区域竞争者。美国 2024 年批准首个参比 Victoza 的利拉鲁肽仿制药，说明 GLP-1 领域已出现成熟品种的仿制路径，但不能据此推定所有多肽的开发难度和上市权利相同。[E09] CagriSema 在 2026 年 10 月 20 日的诺和诺德公告中仍属研究中产品；retatrutide 也不能作为获批产品销售份额纳入图表。[M07][E10]

中国企业在工艺开发与生产服务中的存在，和中国终端市场的竞争，是两条需要分别研究的线。药明 TIDES 的业务扩张支持前者，不能自动证明其在中国 GLP-1 成药市场领先。[C06] 同样，某一基础化合物专利到期，也不等于其他工艺、制剂、用途权利或注册门槛同时消失。[C08]

地区差异决定商业模式

美国适合观察商业规模、净价、保险和直达患者渠道之间的互动，但美国短缺与调配规则不能外推全球。欧洲要区分欧盟上市许可和各国实际准入、报销与上市；获批口服产品不意味着每个国家已同步供应。中国则同时具有创新药市场、制造服务和本土竞争的多重身份。

这意味着全球一体化销售预测，必须拆成地区与产品矩阵。一个地区的价格下降可能扩大治疗覆盖，却降低每单位净收入；另一个地区的批准可能尚未形成渠道销售。对中国供应商，全球化能力不仅是有出口订单，更是可核验的质量、注册支持、客户黏性与当地合规。报告不以单一价格、单一专利日期或单个地区的处方趋势代表全球。

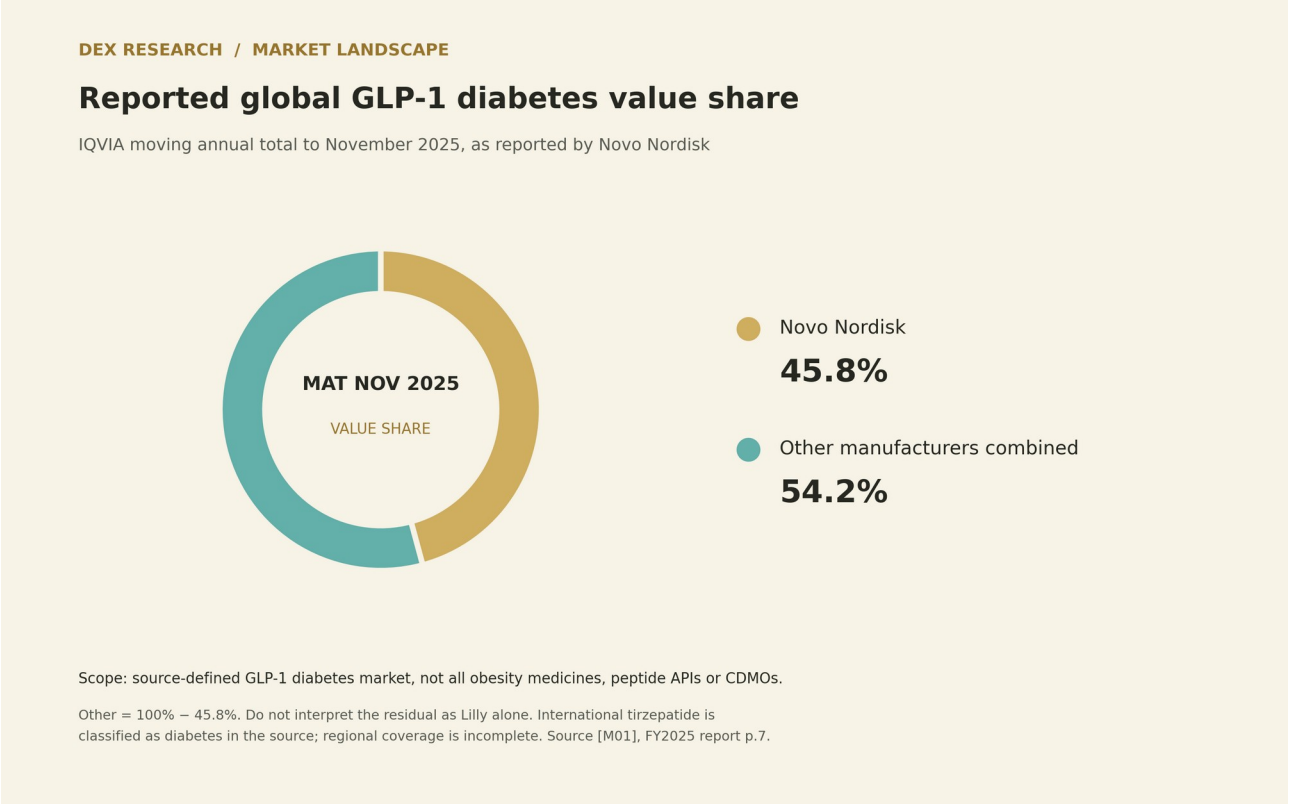


图 2｜来源定义的全球 GLP-1 糖尿病市场价值份额。统计期为截至 2025 年 11 月的滚动十二个月；诺和诺德 45.8%，其他 54.2%。不能解释为全部肥胖药或 API 份额。来源[M01]。

P4 行业问题

扩产之后，瓶颈移向利用率与单位成本

Bachem 2026 年上半年披露，Building K 已开始商业 GMP 批次生产，但爬坡成本影响盈利，EBITDA 利润率由上年同期 29.1% 降至 25.4%。PolyPeptide 的 2026 年半年报则披露比利时大规模固相合成产线已按目标利用率运行，而其他基地仍有调试或爬坡中的新增产能。[C04][C05] 这些是公司实例，不是行业平均值；它们足以反驳“产能建成就等于利润释放”的简单推断。

机制并不复杂：人员培训、验证批次、设备调试和固定成本先发生，可销售批次逐步增加。生产越复杂，反应、纯化、分析和放行之间越容易出现不匹配。解决路径包括分阶段扩产、工艺优化、合适的长期合同与客户组合，但长期承诺也可能锁住低价或错误产品结构。

投资与采购尽调应看商业放行批次、合格产量、利用率、批次失败和再处理、交付表现与现金回收，而不只看反应釜升数、厂房面积或宣布投资金额。没有可比数据时，应明确保留空白，不用名义产能拼出全球市场份额。

质量、环境与供应链韧性不能外包掉

多肽放大的难题不仅是把反应容器做大。杂质可能与目标分子性质接近，纯化会消耗时间、溶剂和设备能力；批次越大，质量偏差的后果也越大。减少溶剂和改进路线有助于成本与环境表现，但必须证明更改后的产品仍符合质量要求。[C03]

中国等供应地的机会在于合规和工艺能力，风险也在这里。FDA 的 GLP-1 原料药进口警示以质量和生产合规为重点，并非所有境外 API 的全面禁令。[E10] 应逐工厂、逐产品与具体监管状态核对，不以国别标签替代质量判断。

企业可以做第二供应源、关键材料库存和替代路线，但这些措施需要验证与成本。韧性并不是无限重复建设；对短缺原料、关键设备、单一客户与单一厂址的风险，应分别设计缓冲。

翰宇药业披露武汉基地与合作方推进合成、裂解和纯化废液的分类与回收。它提供了一个具体的后端约束案例：前端粗肽增加时，处置能力可能成为生产条件的一部分。公告是项目进展与企业解释，并非已兑现的节约金额。[C10]

可及性与持续使用，是需求模型中的硬约束

终端市场不能简单计算为“肥胖人数乘以一年的标价”。有临床需要的人不一定获得诊断、报销和连续处方；开始治疗也不等于全年持续使用。WHO 将可负担性、卫生系统能力与长期证据列入其条件性建议的考虑。[E05] 本文据此把可及性看作需求转化过程，而不是销售预测后的附注。

临床竞争同样不能只按不同试验的减重百分比排序。入组人群、随访时间、是否有糖尿病、统计估计目标与停药处理不同，都会改变数字的含义。制造与商业研究需要关注耐受性、长期随访、实际持续使用和疾病结局；不应把宣传摘要或跨试验简单对比当成头对头优劣证据。

对供应商来说，这会传导为订单波动：新增患者带来初始用量，维持治疗决定长期消耗，支付和剂型改变重塑采购组合。合理的情景分析应分别改变这些变量，而不是给整个产业统一套一个增长率。

仿制、调配与研究用产品：不能混为一谈

获批仿制药有相应审批路径；调配药并未经过 FDA 上市前的安全、有效性与质量审核。FDA 对未经批准 GLP-1 产品的公开警示涉及剂量错误、运输储存和来源不实，并明确 retatrutide 与 cagrilintide 不是 FDA 已批准药品的组成部分。[E09][E10] 产业分析不能把网上的“研究用”销量视为正常合规成药需求，更不能把未经批准的产品当成获批药物的等价替代。

短缺解除后的规则变化还提醒制造商：靠临时监管条件形成的需求，与有长期注册和临床基础的需求，稳定性不同。[E03] 这并不意味着所有调配一概违法，而是说明合法性依赖具体条件、主体和产品，不能用一个标签概括。

专利也是多层门槛。诺和诺德披露的基础化合物专利日期与其他权利并不等价；中国相关诉讼还涉及延长独占期的争议，相关陈述为诉讼当事方的主张，并非终局裁判。[C08] 在未完成逐国、逐专利与注册核查前，不把“到期”写成任何企业可立即上市的保证。

结语：从卖产能，到证明产能的价值

这条产业链的长期机会，来自大规模慢病需求与药物形式的持续创新；但价值不会平均分配给每个扩产者。原研企业争取临床差异化和支付，工艺平台争取质量与交付，材料和设备企业争取可信赖的标准化供给，渠道争取连续、合规的服务。

接下来最值得跟踪的五件事是：新增工厂的合格产出与利用率；注射、口服多肽及非肽药之间的真实产品组合；净价格与覆盖面的变化；中国及其他地区的具体注册和权利状态；供应商从单一商业项目走向可持续客户组合的能力。判断一家企业时，应把这些信号连接起来，而不是把 GLP-1 的热度当作所有参与者的利润保证。

独立附录：证明材料与方法

方法与计算：来源于监管机构、公司披露和官方统计汇总。公司财务与项目进度属于公司披露；市场份额属于公司转述的第三方估计；关于瓶颈、价值分配和需求转化的解释为作者分析。环形图其他厂商=100−45.8=54.2%；份额变化=45.8−55.1=−9.3 个百分点。礼来两品牌 FY 2025 合计=22,965+13,542=36,507 百万美元；H1 2026 合计=18,605+9,088=27,693 百万美元。诺和诺德 H1 收入调节=175,311−26,760=148,551 百万丹麦克朗。未汇兑混合币种，未将品牌收入、API 收入与 CDMO 收入相加，未据不兼容口径计算 CDMO 份额。

[E01] The acquisition of Catalent by Novo Holdings, and the related acquisition by Novo Nordisk of three manufacturing sites from Novo Holdings, is completed

Novo Nordisk | 2024-12-18

统计期／范围: Transaction completed 18 Dec 2024; three manufacturing sites

定位: Company announcement 98/2024, opening paragraphs

支持: 证明三座基地收购完成及两个收购主体的区别。

限制: 不证明各厂实际 GLP-1 产量或收购后利用率。

原始链接 · 读取 2026-10-21： 来源 1

[E02] Catalent Clarifies Novo Nordisk Ownership of Former Bloomington, Indiana Site

Catalent | 2026-06-22

统计期／范围: Bloomington, Indiana; ownership since Dec 2024

定位: Main statement, ownership paragraphs

支持: 证明该基地已由诺和诺德拥有和运营。

限制: 旧名称可能留在文件中，不应据此推断现归属。

原始链接 · 读取 2026-10-21： 来源 1

[E03] Resolution of Shortages of Semaglutide Injection Products; FDA policies for compounders

US FDA | 2025-02-21; policy page subsequently updated

统计期／范围: US national semaglutide-injection shortage determination

定位: Order pp.1–3; policy page entries dated 21 Feb 2025 and later

支持: 支持全国短缺解除、局部供应可能中断及短缺相关监管条件改变。

限制: 属于历史决定，不代表所有 GLP-1 或全球当前供货；本文不提供法律意见。

原始链接 · 读取 2026-10-21： 来源 1 来源 2

[E04] Obesity and overweight

WHO | 2026-10-07

统计期／范围: Global adults aged 18+; 2024 estimates

定位: Key facts; Prevalence of overweight and obesity

支持: 2024 年约 9.4 亿成年人患肥胖，占成年人约 16%。

限制: 患病人数不是可支付药物市场或处方预测。

原始链接 · 读取 2026-10-21： 来源 1

[E05] WHO issues global guideline on the use of GLP-1 medicines in treating obesity

WHO | 2025-12-01

统计期／范围: Global guideline context; adult obesity

定位: Landmark policy change; Implementation considerations

支持: 成本、长期证据、卫生体系能力和公平性影响条件性建议。

限制: 指南不等于各国报销或产品批准；不用于个人用药决策。

原始链接 · 读取 2026-10-21： 来源 1

[E06] Ozempic: Summary of Product Characteristics

European Medicines Agency | Live product information; read 2026-10-21

统计期／范围: Assessed originator semaglutide product

定位: Annex I, section 2, printed p.3

支持: 说明重组酿酒酵母制造路线。

限制: 不代表所有供应商或证明某工艺普遍成本最低。

原始链接 · 读取 2026-10-21： 来源 1

[E07] Wegovy injection and tablets: Prescribing information

US FDA | Revised 12/2025

统计期／范围: US approval-era label; formulations and strengths

定位: Sections 2.1–2.3, printed pp.4–5; section 11

支持: 支持片剂 25 mg 每日维持剂量与给药条件，用于说明原料需求差异。

限制: 历史标签并非完整最新用药指引；剂量不用于跨剂型疗效比较。

原始链接 · 读取 2026-10-21： 来源 1

[E08] FDA Approves Fourth Product Under National Priority Voucher Program, Higher Dose Semaglutide

US FDA | 2026-03-19

统计期／范围: US approval; Wegovy HD 7.2 mg injection

定位: Opening and indication paragraphs; SEC-filed 19 March 2026 announcement, opening paragraph for once-weekly schedule

支持: 确认更高剂量注射产品已批准，不能仅沿用 2025 标签描述产品范围。

限制: 不用于个人给药或与其他药物作间接疗效排名。

原始链接 · 读取 2026-10-21： 来源 1 来源 2

[E09] FDA Approves First Generic of Once-Daily GLP-1 Injection to Lower Blood Sugar in Patients with Type 2 Diabetes

US FDA | 2024-12-23

统计期／范围: US; generic referencing Victoza

定位: Opening paragraph and approval recipient

支持: 确认参比 Victoza 的首个利拉鲁肽仿制药批准。

限制: 不意味着所有 GLP-1 可同样仿制或立即上市。

原始链接 · 读取 2026-10-21： 来源 1

[E10] FDA's Concerns with Unapproved GLP-1 Drugs Used for Weight Loss

US FDA | Live page; accessed 2026-10-21

统计期／范围: US regulatory and quality warnings

定位: Unapproved versions; Retatrutide and cagrilintide; Actions at the border; Shipping; Dosing concerns

支持: 支持调配与批准的区别、在研成分状态、质量及进口风险。

限制: 警示和报告不等于所有产品的不良事件发生率；进口警示不是全面国别禁令。

原始链接 · 读取 2026-10-21： 来源 1

[M01] Financial report for 1 January–31 December 2025; Annual Report 2025

Novo Nordisk | 2026-02-03

统计期／范围: Global IQVIA value share, MAT November 2025; separate FY 2025 company sales, DKK

定位: Financial report p.7, GLP-1 diabetes table and footnotes; annual report therapeutic sales

支持: 份额 45.8%，上年 55.1%；糖尿病 GLP-1 收入 152,202 百万 DKK，肥胖 82,347 百万 DKK。

限制: 厂商转述 IQVIA；国际替尔泊肽归糖尿病，覆盖不完整；份额与净销售口径不同。

原始链接 · 读取 2026-10-21： 来源 1 来源 2

[M02] Lilly reports fourth-quarter 2025 financial results and provides 2026 financial guidance

Eli Lilly | 2026-02-04

统计期／范围: Worldwide FY 2025 brand revenue, USD millions

定位: Selected Revenue Highlights

支持: Mounjaro 22,965 与 Zepbound 13,542 百万美元，合计 36,507 百万。

限制: 品牌不严格等同全球单一适应证；不含全部礼来 GLP-1 收入。

原始链接 · 读取 2026-10-21： 来源 1

[M03] Wegovy tablets original approval package

US FDA | 2025-12-22 approval

统计期／范围: US; adult indications specified in letter

定位: Approval letter, package pp.1 and 4

支持: 确认口服司美格鲁肽已获批，不是仅在研技术。

限制: 美国批准不代表全球同步上市。

原始链接 · 读取 2026-10-21： 来源 1

[M04] Foundayo approval letter and non-peptide product description

US FDA; Eli Lilly | 2026-04-01

统计期／范围: US adult weight-management approval; molecular modality

定位: FDA letter p.1 for approval and p.12 electronic signature for date; Lilly About Foundayo

支持: 确认 orforglipron 获批与非肽小分子属性。

限制: 不推断其他国家批准或全部患者适用；不是多肽 API 需求。

原始链接 · 读取 2026-10-21： 来源 1 来源 2

[M05] Financial report for 1 January–30 June 2026

Novo Nordisk | 2026-08-04

统计期／范围: H1 2026; DKK millions; interim unaudited/unreviewed

定位: Pages 3–4,8–10,13; adjusted results and 340 B reversal

支持: 340 B 转回 26,760 百万 DKK；报告收入 175,311，调整后 148,551 百万 DKK。

限制: 调整指标非标准会计指标；不能将收入变化当作销量变化。

原始链接 · 读取 2026-10-21： 来源 1

[M06] Lilly reports second-quarter 2026 financial results

Eli Lilly | 2026-08-05

统计期／范围: Worldwide H1 2026; USD millions

定位: Selected Revenue Highlights, six-month column

支持: Mounjaro 18,605，Zepbound 9,088，Foundayo 98 百万美元。

限制: 上市初期收入不能外推长期份额；合计不含 Trulicity。

原始链接 · 读取 2026-10-21： 来源 1

[M07] Novo's CagriSema was associated with 25% weight loss on average for women... [title abbreviated; REDEFINE 1 post hoc announcement]

Novo Nordisk | 2026-10-20

统计期／范围: Pipeline status at report cutoff

定位: Opening bullets and investigational description

支持: 公告仍称 CagriSema 为研究中产品。

限制: 仅用于核实在研状态；不引用疗效数字，研究结果和预期决策不等于批准。

原始链接 · 读取 2026-10-21： 来源 1

[C01] HATU, Novabiochem, product 851013

Merck KGaA / Novabiochem | Undated product page; accessed 2026-10-21

统计期／范围: Company-specific activity; periods as dated

定位: Properties; Description; Application; Related Categories

支持: 提供 Novabiochem 偶联试剂与多肽合成相关产品。

限制: 目录产品证明业务能力，不证明客户、销量或份额。

原始链接 · 读取 2026-10-21： 来源 1

[C02] Investor relations activity record 2023-006

Sunresin / 蓝晓科技 | 2023-11-16 (document date; URL uploaded January 2024)

统计期／范围: Company-specific activity; periods as dated

定位: PDF p.3, question 3; p.2, question 1

支持: 披露多肽固相合成树脂和色谱设备业务。

限制: 2023 历史业务证据，不是 2026 收入或份额；未披露原研客户。

原始链接 · 读取 2026-10-21： 来源 1

[C03] The era of large-scale peptide & oligo purification with MCSGP has begun

Bachem / YMC-Chromacon | 2024-01-10

统计期／范围: Company-specific activity; periods as dated

定位: Moving from batch mode to continuous production; How does continuous chromatography or MCSGP work?

支持: 连续色谱回收边馏分，解释纯化与溶剂处理瓶颈。

限制: 单分子案例不能外推全行业；本文未采用其性能百分比。

原始链接 · 读取 2026-10-21： 来源 1

[C04] Bachem confirms growth and expects a strong second half 2026

Bachem | 2026-07-30

统计期／范围: Company-specific activity; periods as dated

定位: Group results; Sales by product category; Substantial capacity expansion

支持: Building K 商业 GMP 生产及爬坡成本；H1 利润率 25.4%，上年 29.1%。

限制: 集团包含寡核苷酸；不是 GLP-1 单独财务数据。

原始链接 · 读取 2026-10-21： 来源 1

[C05] Half-year Report 2026: Business review

PolyPeptide | 2026-08-13 results release; report covers six months ended 2026-06-30

统计期／范围: Company-specific activity; periods as dated

定位: Revenue and customer projects; Profitability; Operational progress; Mid-term outlook

支持: 比利时产线达到目标利用率；其他产线仍处于不同建设爬坡阶段。

限制: 代谢治疗不等于 GLP-1；目标利用率未披露具体百分比。

原始链接 · 读取 2026-10-21： 来源 1

[C06] 2026 interim report

WuXi AppTec / WuXi TIDES / 药明康德 | 2026-08-04 filing; period ended 2026-06-30

统计期／范围: Company-specific activity; periods as dated

定位: PDF pp.11–12, management discussion, WuXi Chemistry / TIDES

支持: TIDES 包含寡核苷酸和多肽；H1 收入 72.6 亿元人民币。

限制: 不能称为 GLP-1 收入或推定某品牌供货关系。

原始链接 · 读取 2026-10-21： 来源 1

[C09] 2026 interim report

Asymchem / 凯莱英 | 2026-08-25 filing; period ended 2026-06-30

统计期／范围: Company-specific activity; periods as dated

定位: PDF pp.10–11, chemical macromolecule CDMO and formulation CDMO

支持: 化学大分子平台涵盖多肽、寡核苷酸及毒素连接体；披露项目阶段。

限制: 反应器容积计划不是已实现产量；项目数不是订单金额。

原始链接 · 读取 2026-10-21： 来源 1

[C10] Hybio Wuhan Partners with GenTech to Forge New Paths in Peptide Industry Waste Liquid Resource Recovery

Hybio / 翰宇药业 | 2026-04-25

统计期／范围: Company-specific activity; periods as dated

定位: Main release paragraphs 1–6

支持: 武汉基地披露多肽制造废液回收项目。

限制: 企业计划，不是已验证节省或行业平均水平。

原始链接 · 读取 2026-10-21： 来源 1

[C11] Commercial Supply and Peptide CDMO services

Sinopep-Allsino / 江苏诺泰澳赛诺生物制药股份有限公司 (688076) | Undated live corporate page; accessed 2026-10-21

统计期／范围: Company-specific activity; periods as dated

定位: Our Services; Commercial Supply

支持: 诺泰生物提供多肽 API 及制剂等服务。

限制: 公司自述能力，不是实际 GLP-1 产量；不要混同圣诺生物。

原始链接 · 读取 2026-10-21： 来源 1

[C12] CordenPharma Expands Peptide Platform with >€500 m Greenfield Facility Construction in the Basel Region of Switzerland

CordenPharma | 2025-03-05

统计期／范围: Company-specific activity; periods as dated

定位: Investment overview; Muttenz and Colorado capacity plans

支持: 宣布欧洲与美国多肽平台扩产计划。

限制: 2028 商业启动等为计划；不能计入 2026 现有供给。

原始链接 · 读取 2026-10-21： 来源 1

[C07] End-to-end offering for Molly autoinjectors at Thermo Fisher's Ridgefield, New Jersey site

SHL Medical / Thermo Fisher Scientific | 2026-03-19

统计期／范围: Company-specific activity; periods as dated

定位: Press release main text

支持: SHL 和 Thermo Fisher 合作整合灌装、自动注射器装配与包装。

限制: 不是已披露 GLP-1 品牌供货合同或已交付产量。

原始链接 · 读取 2026-10-21： 来源 1

[C08] Financial report for 1 January–31 March 2026

Novo Nordisk | 2026-05-06

统计期／范围: China exclusivity litigation; India formulation litigation

定位: Legal matters, p.20

支持: 披露中国独占相关诉讼与其他专利争议，支持到期并非自由上市保证。

限制: 诉讼当事方主张不是法院最终结论；须按国家、权利和日期核验。

原始链接 · 读取 2026-10-21： 来源 1

编辑参考：已直接阅读并查看网站网络安全文章的开头、脑图与环形图，以及无人机文章的封面、版式与证据卡片。仅作叙事与视觉参考，不作为本报告行业事实来源。https://thedexs.com/post/cybersecurity-industry-report/ ；https://thedexs.com/post/drone-networks/ 。读取日期：2026-10-21。

English Manuscript

Version 1.0 | Global scope with attention to the Chinese supply chain | Research cutoff: 21 October 2026. Annual, moving-annual-total and half-year observations are labelled separately. “Biological peptides” here means therapeutic peptides and their pharmaceutical supply chain, excluding food, cosmetic, collagen-hydrolysate and unapproved wellness-peptide markets. The GLP-1 scope includes single-receptor agonists and dual/multiple agonists with GLP-1 activity. Non-peptide GLP-1 medicines are discussed only as competitive substitutes. This is industry research, not medical, prescribing or investment advice.

P1 Industry Story

Three factories explain more than one injection

On 18 December 2024, Novo Nordisk completed the acquisition of three manufacturing sites from Novo Holdings. The parties matter: Novo Holdings acquired Catalent; Novo Nordisk acquired three of its fill-finish sites. In June 2026, Catalent was still correcting reports that incorrectly treated the Bloomington facility, now owned and operated by Novo Nordisk, as part of its own network. [E01][E02]

Why would a company with successful medicines compete for filling plants? An approved molecule must still become a formulated, aseptically filled, tested, released and distributed product. A slow expansion at any of these stages can prevent upstream synthesis capacity from becoming sales. The acquisition does not establish a site's GLP-1 output, but it demonstrates the strategic importance of controlling downstream manufacturing.

On 21 February 2025, the US FDA determined that the national semaglutide-injection shortage was resolved while acknowledging possible local interruptions. [E03] Aggregate supply and a patient's ability to obtain one presentation at one pharmacy are different problems. The commercial challenge extends from making a molecule to supporting continuous, compliant and affordable care.

Separate three markets before counting them

Therapeutic peptides are medicines with peptide active ingredients and the manufacturing services behind them; GLP-1 is an important subset. GLP-1-related medicines are a mechanism-based category that can include both peptides and non-peptide small molecules. Obesity medicines are an indication-based category. The same molecule can appear in different brands, formulations and indications. These categories overlap without being interchangeable.

The distinction has immediate commercial consequences in 2026. US approval of oral Wegovy demonstrates that oral delivery does not mean a non-peptide molecule. Foundayo (orforglipron), by contrast, is an approved non-peptide oral GLP-1 medicine: it may compete for patients without creating the same peptide-input demand. [M03][M04] Authorisations remain product-, indication- and jurisdiction-specific; clinical results are not global marketing permission.

Large clinical need is not a revenue forecast

WHO's October 2026 fact sheet estimates that 940 million adults lived with obesity in 2024, about 16% of adults worldwide. [E04] This establishes the scale of public-health need, not an immediately addressable pharmaceutical

market. Diagnosis, authorised indications, contraindications, affordability, reimbursement, clinical capacity and persistence all affect actual treatment numbers.

The central argument of this report is that the industry is moving beyond increasing supply toward qualifying it, sustaining its use and securing payment. Peptide suppliers depend on product mix, ingredient requirements per treated patient, outsourcing decisions, prices and yields. Branded manufacturers also depend on clinical evidence and market access. Strong end-market demand and factory-level margin pressure can coexist.

P2 Industry Value Chain

Upstream: inputs and the evidence that travels with them

Chemical routes begin with protected amino acids, solid supports, coupling and deprotection reagents, solvents and related inputs. Suppliers provide batch consistency, impurity control, reliable deliveries and traceable documentation as well as materials. Changing an input can affect a commercial manufacturing process; a cheaper substitute is not necessarily interchangeable. Verified representative activities appear in the map and appendix. Category connections are not confirmed supply contracts. [C01][C02]

Equipment spans synthesis vessels, preparative chromatography, filtration, concentration, drying, analytical instruments and consumables. Equipment sales, recurring consumables and services have different cash-flow patterns. A plant expansion can produce a large equipment order, while ongoing operation drives consumable demand. Reactor volume, resin loading and nominal capacity cannot be converted directly into finished-drug output.

Biological routes add cell systems, media, fermentation and biological separation. EMA's Ozempic product information identifies recombinant production in Saccharomyces cerevisiae cells. [E06] Peptides therefore cannot be reduced to a single solid-phase-synthesis market. The molecule, intellectual property and manufacturing route determine which suppliers and assets matter.

Midstream: turning a sequence into releasable API

Solid-phase synthesis assembles amino-acid units on a support before downstream processing. Industrial production also requires modification, purification, impurity characterisation, validation and release. Incomplete reactions and side products influence the difficulty of purification. Commercial value lies in reproducibly delivering material to the same specification, not simply making a sequence once. Products may use solid-phase, liquid-phase, fragment-based, recombinant or hybrid routes rather than one universal GLP-1 process. [C03][E06]

Bachem, PolyPeptide and CordenPharma illustrate specialist peptide manufacturing; relevant Chinese capability includes WuXi AppTec's WuXi TIDES platform. Company and segment definitions matter: TIDES includes oligonucleotides as well as peptides, so its revenue is not GLP-1 revenue. Demonstrated process capability does not establish a supply relationship with a named marketed brand. [C04][C05][C06][C12]

CDMO revenue can come from development, clinical batches, transfer, commercial production and capacity arrangements. Numerous development projects need not mean substantial near-term tonnage; a large commercial product can create concentration risk. Supplier transfers require technical and quality work, supporting customer retention. Customer insourcing, project failures and changing forecasts can nevertheless reduce utilisation.

Chinese participation extends beyond one platform. Asymchem discloses peptide programmes at development, validation and commercial stages and fragment-based processes; Sinopep-Allsino offers peptide API, CMC and formulation services. Project counts, mixed-segment revenue and actual GLP-1 output are not interchangeable. CordenPharma's European and US investment plans demonstrate international expansion, but planned 2028 commercial starts cannot be counted as operating 2026 supply. [C09][C11][C12]

The manufacturing interface: formulation, filling and devices

After API manufacture, injections require formulation stability, container closure, aseptic processing, filling inspection and device reliability. Pens, prefilled syringes, cartridges and vials differ in dose accuracy, user steps, materials, supplier qualification and production-line compatibility. A device supplier's platform establishes a capability, not a procurement relationship with a particular brand. [C07]

Oral peptides reduce dependence on injection devices while shifting challenges toward stability, absorption and administration conditions. The 2025 Wegovy tablet label specifies a 25 mg daily maintenance dose and fasting requirements; in 2026 the FDA approved a higher 7.2 mg weekly injection. [E07][E08] These figures illustrate manufacturing demand, not prescribing advice or a clinical ranking.

The supply-chain implication is that similar patient numbers can require very different quantities of API and packaging. Prescription growth cannot simply be applied to peptide tonnage. A credible demand model needs formulation mix, persistence, ramp-up yields, inventory and the customer's outsourcing share.

Downstream: who determines access

Branded manufacturers integrate clinical development, registration, intellectual property, production networks and commercial access. Clinicians determine diagnosis and prescribing; payers and intermediaries influence coverage and patient cost; wholesalers, pharmacies and authorised online services deliver products. Their relative importance differs across health systems.

A branded medicine's selling price is not the API supplier's available revenue pool. It also supports research, unsuccessful programmes, evidence generation, compliance, commercialisation and manufacturing coordination. List prices, cash prices and manufacturer net realisations must not be mixed. WHO's 2025 guidance highlighted cost, health-system readiness and equitable access among the reasons for conditional recommendations. [E05] Payment and care delivery constrain effective demand alongside chemistry.

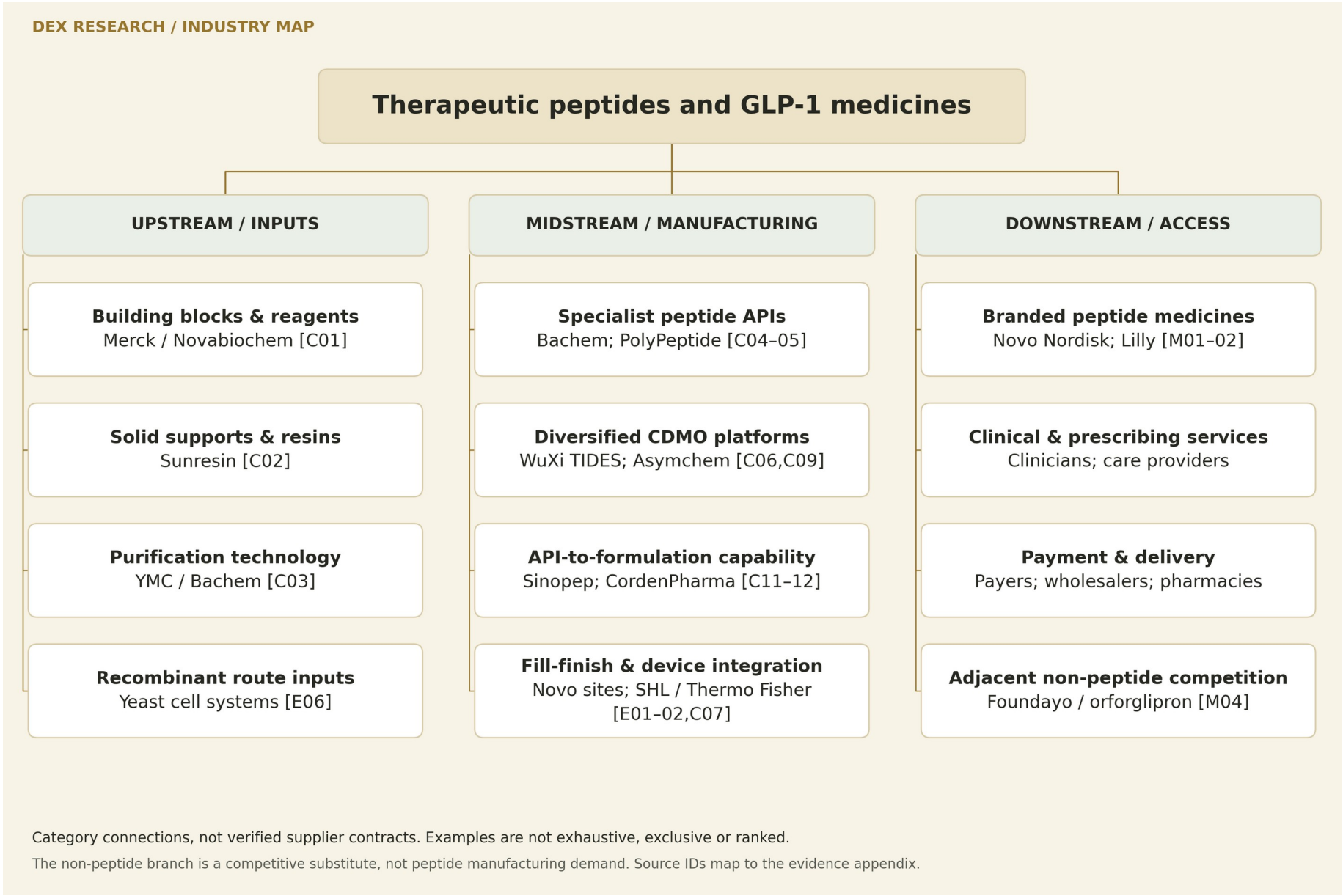


Figure 1 | Therapeutic peptides and the GLP-1 value chain. Category links are not supplier contracts; examples are non-exhaustive, non-exclusive and unranked. The non-peptide branch is an adjacent substitute.

P3 Market Landscape

Comparable shares first, financial scale second

Novo Nordisk's FY 2025 report cites IQVIA data showing a 45.8% global GLP-1 diabetes value share for the moving annual total ending November 2025, versus 55.1% a year earlier, a decline of 9.3 percentage points. [M01] The donut therefore contains only Novo Nordisk, 45.8%, and other manufacturers combined, 54.2%. The residual is calculated as 100% minus 45.8%; it must not be labelled entirely as Lilly.

The denominator is the source-defined GLP-1 diabetes value market. International tirzepatide is classified as diabetes even where it also has an obesity indication, and some regional coverage is incomplete. This is not the whole obesity-drug, peptide API or CDMO market, nor audited manufacturer net sales. The historical period remains explicit rather than being presented as a live October 2026 share. [M01]

Company revenue gives a separate scale indicator. Novo reported FY 2025 GLP-1 diabetes sales of DKK 152.202 billion and obesity-care sales of DKK 82.347 billion. Lilly reported worldwide Mounjaro and Zepbound revenue of US$22.965 billion and US$13.542 billion, respectively, totalling US$36.507 billion. [M01][M02] Currencies are not combined, and brand-indication relationships differ by country. These figures cannot establish whole-value-chain shares.

Reading 2026 growth without mixing accounting and demand

Lilly's first-half 2026 Mounjaro and Zepbound revenue was US$18.605 billion and US$9.088 billion, totalling US$27.693 billion. Foundayo generated US$98 million. [M06] Revenue demonstrates that commercialisation has begun; a small launch-period base does not justify extrapolating long-term share.

Novo's first-half 2026 statements include a DKK 26.760 billion reversal of a US 340B provision. Total reported sales were DKK 175.311 billion, versus adjusted sales of DKK 148.551 billion. [M05] Reported revenue changes cannot all be interpreted as additional drug volumes, much less API demand. Accounting adjustments, currencies, net prices, mix and periods must be reconciled first.

For suppliers, the useful questions are how price and volume separate, how much manufacturing is captive, which molecular formats create demand, and whether channel growth reflects new patients, switching or inventory. These variables connect medicine sales to actual manufacturing orders.

Three competitive layers, not one company ranking

The first layer comprises originators with clinical evidence, authorisations, brands and access. Novo and Lilly also manufacture internally. The opportunity for outside suppliers is the demand available after captive production and other constraints, not all downstream medicine revenue.

The second layer comprises specialist manufacturing and process platforms. Quality systems, scale-up, delivery records and transfer capability win projects. Bachem's commercial GMP batches from a new building and PolyPeptide's utilisation ramp illustrate a shift from announcing assets to operating them. Manufacturer capacity statements are not independently measured industry shares. [C04][C05]

The third layer comprises new molecules, formulations, generics and regional competitors. The FDA's 2024 approval of the first generic referencing Victoza demonstrates an established-product pathway, not identical

development difficulty or market rights across all peptides. [E09] Novo still described CagriSema as investigational on 20 October 2026; retatrutide also cannot be assigned an approved-product sales share. [M07][E10]

Chinese process-development and manufacturing capability is distinct from competition in China's finished-drug market. Growth at WuXi TIDES supports the former, not automatic leadership in the latter. [C06] Nor does expiry of a compound patent eliminate all process, formulation, use or regulatory barriers. [C08]

Geography changes the business model

The United States illustrates interactions among commercial scale, net prices, insurance and direct-to-patient channels, but its shortage and compounding rules are not global rules. In Europe, EU authorisation must be separated from country-level access, reimbursement and launch. China combines an innovative-drug market, manufacturing services and domestic competition.

A global forecast therefore needs a region-by-product matrix. Lower prices can expand coverage while reducing net revenue per unit; an authorisation elsewhere may precede meaningful sales. For Chinese suppliers, international capability requires verifiable quality, regulatory support, customer relationships and local compliance, not simply export orders. No single price, patent date or regional prescription trend represents the world.

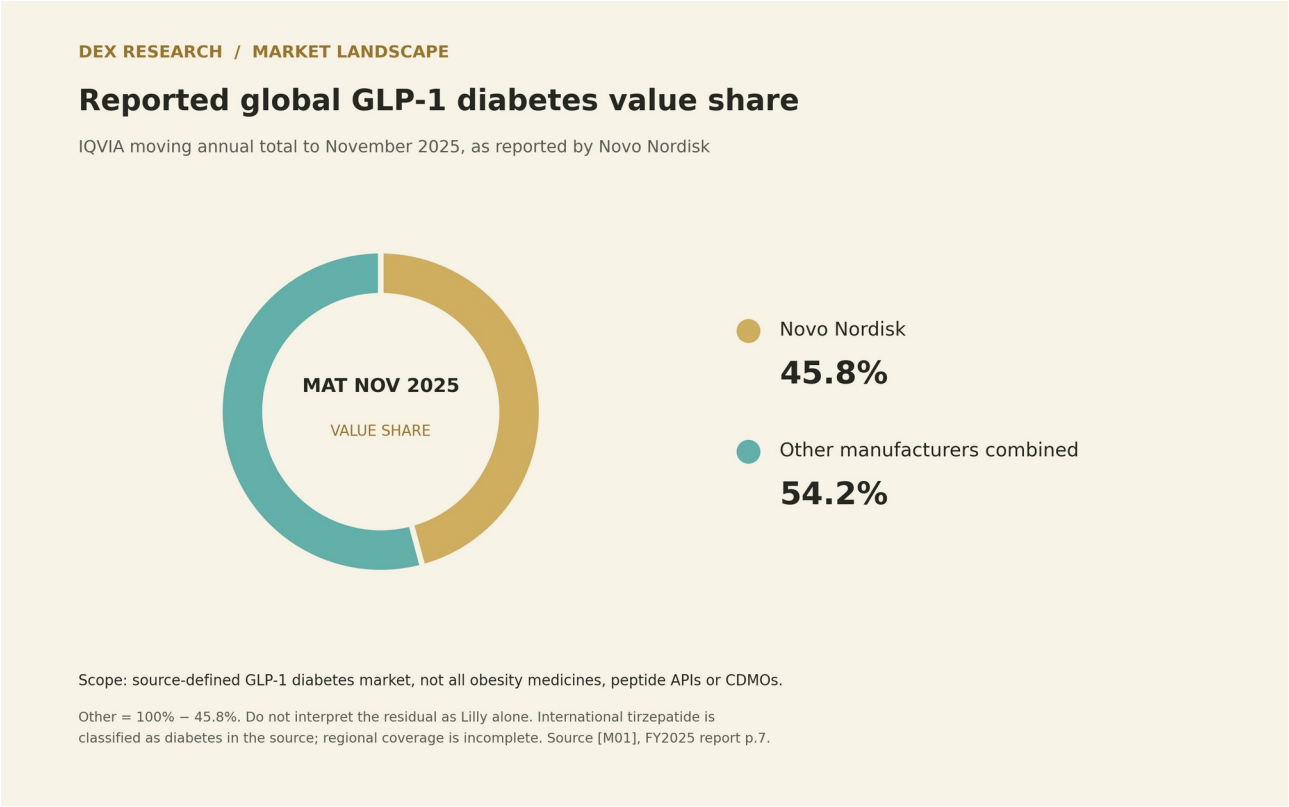


Figure 2 | Source-defined global GLP-1 diabetes value share. Moving annual total to November 2025: Novo 45.8%, other manufacturers 54.2%. Not the entire obesity-drug or API market. Source [M01].

P4 Industry Problems

After expansion, utilisation and unit cost matter

Bachem reported commercial GMP batches from Building K in the first half of 2026, while ramp-up costs weighed on profitability: its EBITDA margin fell to 25.4% from 29.1%. PolyPeptide's half-year 2026 report says its Belgian large-scale solid-phase-synthesis plant operated at target utilisation, while other sites still had assets in commissioning or ramp-up. [C04][C05] These are company examples, not industry averages, but they contradict the assumption that completed capacity immediately releases profit.

Training, validation, commissioning and fixed costs precede the gradual increase in saleable batches. Synthesis, purification, analysis and release can become mismatched. Staged expansion, process improvement, appropriate long-term contracts and customer diversification can help; commitments can also lock in unattractive prices or the wrong mix.

Diligence should examine released batches, qualified output, utilisation, failures and reprocessing, delivery and cash collection rather than vessel litres, floor space or announced spending alone. Where comparable data are absent, a blank is more informative than a manufactured global share.

Quality, environmental burden and resilience remain responsibilities

Scale-up means more than enlarging a vessel. Impurities can resemble the target molecule, while purification consumes time, solvents and equipment capacity. Larger batches increase the consequences of a deviation. Lower-solvent and improved routes can benefit both cost and environmental performance, provided quality remains demonstrated. [C03]

Compliance and process capability create opportunity and risk for Chinese and other international suppliers. FDA's GLP-1 API import alert focuses on quality and manufacturing compliance rather than prohibiting all foreign API. [E10] Assessment should be site-, product- and status-specific, not based on nationality alone.

Second sources, critical-input inventories and alternative routes can improve resilience but require qualification and cost. Resilience does not mean duplicating every asset. Scarce materials, specialist equipment, concentrated customers and single-site dependence need different buffers.

Hybio describes work at its Wuhan site to segregate and recover waste from synthesis, cleavage and purification. This provides a concrete example of disposal infrastructure becoming a condition for expanding crude-peptide output. The announcement is a project account, not a quantified realised saving. [C10]

Access and persistence constrain the demand model

The end market is not simply the population with obesity multiplied by one year's list price. Clinical need does not ensure diagnosis, reimbursement or continuous prescriptions, and treatment initiation does not ensure full-year persistence. WHO included affordability, health-system capacity and long-term evidence among its considerations. [E05] Access is part of demand conversion, not a footnote added after a sales forecast.

Clinical competition also cannot be ranked by weight-loss percentages from unrelated trials. Populations, follow-up, diabetes status, estimands and treatment-discontinuation handling differ. Industrial analysis should consider tolerability, follow-up, persistence and disease outcomes rather than treating promotional summaries or simple cross-trial comparisons as head-to-head evidence.

For suppliers this creates ordering variability: starts generate initial demand, maintenance drives continued consumption, and payment and formulation changes alter mix. Scenarios should vary these drivers separately rather than apply one growth rate to the entire industry.

Generics, compounding and research products are distinct

Approved generics follow an applicable approval pathway; compounded medicines do not undergo FDA premarket review for safety, effectiveness and quality. FDA's public warnings address dosing errors, shipping conditions and misrepresented sources, and identify retatrutide and cagrilintide as not being components of FDA-approved medicines. [E09][E10] Online “research-use” sales should not be counted as ordinary compliant finished-drug demand or treated as equivalent approved alternatives.

Changes following shortage resolution also distinguish demand based on temporary regulatory conditions from demand supported by enduring registrations and clinical evidence. [E03] This does not mean that every compounded preparation is unlawful: legality depends on specific conditions, actors and products.

Intellectual property is similarly layered. Novo's disclosed compound-patent dates do not extinguish every other right, and Chinese litigation involves disputed extended exclusivity; the disclosed allegations are party claims, not final judicial findings. [C08] Expiry is not a guarantee that any competitor can immediately launch without country-, patent- and regulatory-level checks.

Conclusion: prove the value of capacity

Long-term opportunity comes from large chronic-disease needs and continued innovation in drug formats, but value will not accrue equally to every capacity expansion. Originators compete on evidence and access; process platforms on quality and delivery; input and equipment suppliers on dependable standardised supply; channels on continuous, compliant service.

Five signals deserve attention: qualified output and utilisation at new plants; the actual mix of injectable peptides, oral peptides and non-peptide medicines; net prices and coverage; jurisdiction-specific registrations and rights; and suppliers' ability to build durable customer portfolios. These signals must be connected before treating GLP-1 demand as a guarantee of supplier profit.

Appendix: Evidence and Methods

Methods and calculations: regulatory records, company disclosures and official statistical synthesis. Company results and project progress are issuer disclosures; market shares are issuer-reported third-party estimates. Explanations of bottlenecks, value allocation and demand conversion are author analysis. Donut residual=100−45.8=54.2%; share change=45.8−55.1=−9.3 percentage points. Lilly two-brand FY 2025 total=22,965+13,542=US$36,507m; H1 2026 total=18,605+9,088=US$27,693m. Novo H1 reconciliation=175,311−26,760=DKK148,551m. Currencies are not blended; branded sales, API sales and CDMO sales are not added; incompatible supplier metrics are not used to calculate CDMO shares.

[E01] The acquisition of Catalent by Novo Holdings, and the related acquisition by Novo Nordisk of three manufacturing sites from Novo Holdings, is completed

Novo Nordisk | 2024-12-18

Period / scope: Transaction completed 18 Dec 2024; three manufacturing sites

Location: Company announcement 98/2024, opening paragraphs

Supports: Confirms completion and the distinction between the two acquirers.

Limits: Does not establish site-level GLP-1 output or utilisation.

Original sources · accessed 21 Oct 2026: Source 1

[E02] Catalent Clarifies Novo Nordisk Ownership of Former Bloomington, Indiana Site

Catalent | 2026-06-22

Period / scope: Bloomington, Indiana; ownership since Dec 2024

Location: Main statement, ownership paragraphs

Supports: Confirms ownership and operation by Novo Nordisk.

Limits: Legacy filing names do not establish current ownership.

Original sources · accessed 21 Oct 2026: Source 1

[E03] Resolution of Shortages of Semaglutide Injection Products; FDA policies for compounders

US FDA | 2025-02-21; policy page subsequently updated

Period / scope: US national semaglutide-injection shortage determination

Location: Order pp.1–3; policy page entries dated 21 Feb 2025 and later

Supports: Supports national resolution, possible local disruptions and changed shortage-related conditions.

Limits: Historical decision, not every GLP-1 product or worldwide availability; not legal advice.

Original sources · accessed 21 Oct 2026: Source 1 Source 2

[E04] Obesity and overweight

WHO | 2026-10-07

Period / scope: Global adults aged 18+; 2024 estimates

Location: Key facts; Prevalence of overweight and obesity

Supports: An estimated 940 million adults had obesity in 2024, about 16% of adults.

Limits: Prevalence is not a paid pharmaceutical market or prescription forecast.

Original sources · accessed 21 Oct 2026: Source 1

[E05] WHO issues global guideline on the use of GLP-1 medicines in treating obesity

WHO | 2025-12-01

Period / scope: Global guideline context; adult obesity

Location: Landmark policy change; Implementation considerations

Supports: Cost, long-term evidence, system readiness and equity inform conditional recommendations.

Limits: Guidance is not country-level reimbursement or product approval; not personal prescribing advice.

Original sources · accessed 21 Oct 2026: Source 1

[E06] Ozempic: Summary of Product Characteristics

European Medicines Agency | Live product information; read 2026-10-21

Period / scope: Assessed originator semaglutide product

Location: Annex I, section 2, printed p.3

Supports: Identifies recombinant Saccharomyces cerevisiae manufacture.

Limits: Not all suppliers or proof of universally lowest process cost.

Original sources · accessed 21 Oct 2026: Source 1

[E07] Wegovy injection and tablets: Prescribing information

US FDA | Revised 12/2025

Period / scope: US approval-era label; formulations and strengths

Location: Sections 2.1–2.3, printed pp.4–5; section 11

Supports: Supports 25 mg daily tablet maintenance and administration conditions, used to discuss input demand.

Limits: Historical label, not comprehensive current prescribing guidance; dose is not comparative efficacy.

Original sources · accessed 21 Oct 2026: Source 1

[E08] FDA Approves Fourth Product Under National Priority Voucher Program, Higher Dose Semaglutide

US FDA | 2026-03-19

Period / scope: US approval; Wegovy HD 7.2 mg injection

Location: Opening and indication paragraphs; SEC-filed 19 March 2026 announcement, opening paragraph for once-weekly schedule

Supports: Confirms higher-dose injectable approval beyond the 2025 label.

Limits: Not prescribing advice or an indirect efficacy ranking.

Original sources · accessed 21 Oct 2026: Source 1 Source 2

[E09] FDA Approves First Generic of Once-Daily GLP-1 Injection to Lower Blood Sugar in Patients with Type 2 Diabetes

US FDA | 2024-12-23

Period / scope: US; generic referencing Victoza

Location: Opening paragraph and approval recipient

Supports: Confirms first generic approval referencing Victoza.

Limits: Does not imply identical generic pathways or immediate access for every GLP-1.

Original sources · accessed 21 Oct 2026: Source 1

[E10] FDA's Concerns with Unapproved GLP-1 Drugs Used for Weight Loss

US FDA | Live page; accessed 2026-10-21

Period / scope: US regulatory and quality warnings

Location: Unapproved versions; Retatrutide and cagrilintide; Actions at the border; Shipping; Dosing concerns

Supports: Supports distinctions from approved products, investigational ingredients, quality and import risks.

Limits: Warnings are not incidence estimates; import alert is not a blanket country ban.

Original sources · accessed 21 Oct 2026: Source 1

[M01] Financial report for 1 January–31 December 2025; Annual Report 2025

Novo Nordisk | 2026-02-03

Period / scope: Global IQVIA value share, MAT November 2025; separate FY 2025 company sales, DKK

Location: Financial report p.7, GLP-1 diabetes table and footnotes; annual report therapeutic sales

Supports: Share 45.8%, prior 55.1%; diabetes GLP-1 sales DKK 152,202 m, obesity DKK 82,347 m.

Limits: Issuer-reported IQVIA; international tirzepatide classified as diabetes, incomplete coverage; share differs from net-sales basis.

Original sources · accessed 21 Oct 2026: Source 1 Source 2

[M02] Lilly reports fourth-quarter 2025 financial results and provides 2026 financial guidance

Eli Lilly | 2026-02-04

Period / scope: Worldwide FY 2025 brand revenue, USD millions

Location: Selected Revenue Highlights

Supports: Mounjaro US$22,965 m and Zepbound US$13,542 m; sum US$36,507 m.

Limits: Brands do not map universally to one indication; not all Lilly GLP-1 revenue.

Original sources · accessed 21 Oct 2026: Source 1

[M03] Wegovy tablets original approval package

US FDA | 2025-12-22 approval

Period / scope: US; adult indications specified in letter

Location: Approval letter, package pp.1 and 4

Supports: Confirms approved oral semaglutide rather than pipeline-only technology.

Limits: US approval is not simultaneous worldwide launch.

Original sources · accessed 21 Oct 2026: Source 1

[M04] Foundayo approval letter and non-peptide product description

US FDA; Eli Lilly | 2026-04-01

Period / scope: US adult weight-management approval; molecular modality

Location: FDA letter p.1 for approval and p.12 electronic signature for date; Lilly About Foundayo

Supports: Confirms orforglipron approval and non-peptide small-molecule modality.

Limits: No inference of other authorisations or universal suitability; not peptide API demand.

Original sources · accessed 21 Oct 2026: Source 1 Source 2

[M05] Financial report for 1 January–30 June 2026

Novo Nordisk | 2026-08-04

Period / scope: H1 2026; DKK millions; interim unaudited/unreviewed

Location: Pages 3–4,8–10,13; adjusted results and 340 B reversal

Supports: 340 B reversal DKK 26,760 m; reported sales 175,311 m versus adjusted 148,551 m.

Limits: Adjusted metrics are non-IFRS measures; revenue changes are not volume changes.

Original sources · accessed 21 Oct 2026: Source 1

[M06] Lilly reports second-quarter 2026 financial results

Eli Lilly | 2026-08-05

Period / scope: Worldwide H1 2026; USD millions

Location: Selected Revenue Highlights, six-month column

Supports: Mounjaro US$18,605 m, Zepbound US$9,088 m, Foundayo US$98 m.

Limits: Launch sales are not long-term share forecasts; stated sum excludes Trulicity.

Original sources · accessed 21 Oct 2026: Source 1

[M07] Novo's CagriSema was associated with 25% weight loss on average for women... [title abbreviated; REDEFINE 1 post hoc announcement]

Novo Nordisk | 2026-10-20

Period / scope: Pipeline status at report cutoff

Location: Opening bullets and investigational description

Supports: Still describes CagriSema as investigational.

Limits: Cited only for investigational status, not efficacy estimates. Results and expected decisions are not approval.

Original sources · accessed 21 Oct 2026: Source 1

[C01] HATU, Novabiochem, product 851013

Merck KGaA / Novabiochem | Undated product page; accessed 2026-10-21

Period / scope: Company-specific activity; periods as dated

Location: Properties; Description; Application; Related Categories

Supports: Confirms Novabiochem coupling reagents and related peptide-synthesis products.

Limits: Catalogue products establish capability, not customers, sales or share.

Original sources · accessed 21 Oct 2026: Source 1

[C02] Investor relations activity record 2023-006

Sunresin / 蓝晓科技 | 2023-11-16 (document date; URL uploaded January 2024)

Period / scope: Company-specific activity; periods as dated

Location: PDF p.3, question 3; p.2, question 1

Supports: Discloses peptide solid-phase synthesis resins and chromatography equipment.

Limits: Historical 2023 participation, not 2026 revenue or share; no named originator customer.

Original sources · accessed 21 Oct 2026: Source 1

[C03] The era of large-scale peptide & oligo purification with MCSGP has begun

Bachem / YMC-Chromacon | 2024-01-10

Period / scope: Company-specific activity; periods as dated

Location: Moving from batch mode to continuous production; How does continuous chromatography or MCSGP work?

Supports: Continuous chromatography recycles side fractions, illustrating purification and solvent-handling bottlenecks.

Limits: One molecule is not a sector-wide benchmark; the article does not adopt its performance percentages.

Original sources · accessed 21 Oct 2026: Source 1

[C04] Bachem confirms growth and expects a strong second half 2026

Bachem | 2026-07-30

Period / scope: Company-specific activity; periods as dated

Location: Group results; Sales by product category; Substantial capacity expansion

Supports: Building K commercial GMP production and ramp-up costs; H1 EBITDA margin 25.4%, versus 29.1% a year earlier.

Limits: Group includes oligonucleotides; these are not GLP-1-only financial results.

Original sources · accessed 21 Oct 2026: Source 1

[C05] Half-year Report 2026: Business review

PolyPeptide | 2026-08-13 results release; report covers six months ended 2026-06-30

Period / scope: Company-specific activity; periods as dated

Location: Revenue and customer projects; Profitability; Operational progress; Mid-term outlook

Supports: Belgian plant operated at target utilisation; additional assets at other sites remained in commissioning or ramp-up.

Limits: Metabolic therapeutics is not identical to GLP-1; target utilisation percentage is undisclosed.

Original sources · accessed 21 Oct 2026: Source 1

[C06] 2026 interim report

WuXi AppTec / WuXi TIDES / 药明康德 | 2026-08-04 filing; period ended 2026-06-30

Period / scope: Company-specific activity; periods as dated

Location: PDF pp.11–12, management discussion, WuXi Chemistry / TIDES

Supports: TIDES includes oligonucleotides and peptides; H1 revenue RMB 7.26 billion.

Limits: Not GLP-1 revenue or proof of a named brand supply contract.

Original sources · accessed 21 Oct 2026: Source 1

[C09] 2026 interim report

Asymchem / 凯莱英 | 2026-08-25 filing; period ended 2026-06-30

Period / scope: Company-specific activity; periods as dated

Location: PDF pp.10–11, chemical macromolecule CDMO and formulation CDMO

Supports: Chemical macromolecule platform covers peptides, oligonucleotides and toxin-linkers; project stages are disclosed.

Limits: Planned reactor volume is not realised output; project counts are not order value.

Original sources · accessed 21 Oct 2026: Source 1

[C10] Hybio Wuhan Partners with GenTech to Forge New Paths in Peptide Industry Waste Liquid Resource Recovery

Hybio / 翰宇药业 | 2026-04-25

Period / scope: Company-specific activity; periods as dated

Location: Main release paragraphs 1–6

Supports: Wuhan site describes a peptide-manufacturing waste-recovery project.

Limits: Company project, not verified realised savings or an industry average.

Original sources · accessed 21 Oct 2026: Source 1

[C11] Commercial Supply and Peptide CDMO services

Sinopep-Allsino / 江苏诺泰澳赛诺生物制药股份有限公司 (688076) | Undated live corporate page; accessed 2026-10-21

Period / scope: Company-specific activity; periods as dated

Location: Our Services; Commercial Supply

Supports: Sinopep-Allsino offers peptide API and formulation services.

Limits: Company-stated capability, not actual GLP-1 output; do not confuse with Chengdu Shengnuo.

Original sources · accessed 21 Oct 2026: Source 1

[C12] CordenPharma Expands Peptide Platform with >€500 m Greenfield Facility Construction in the Basel Region of Switzerland

CordenPharma | 2025-03-05

Period / scope: Company-specific activity; periods as dated

Location: Investment overview; Muttenz and Colorado capacity plans

Supports: Announces European and US peptide-platform expansion plans.

Limits: Planned commercial starts such as 2028 are not operating 2026 supply.

Original sources · accessed 21 Oct 2026: Source 1

[C07] End-to-end offering for Molly autoinjectors at Thermo Fisher's Ridgefield, New Jersey site

SHL Medical / Thermo Fisher Scientific | 2026-03-19

Period / scope: Company-specific activity; periods as dated

Location: Press release main text

Supports: SHL and Thermo Fisher collaborate on filling, autoinjector assembly and packaging.

Limits: Not a disclosed GLP-1 brand contract or delivered output.

Original sources · accessed 21 Oct 2026: Source 1

[C08] Financial report for 1 January–31 March 2026

Novo Nordisk | 2026-05-06

Period / scope: China exclusivity litigation; India formulation litigation

Location: Legal matters, p.20

Supports: Discloses Chinese exclusivity and other patent disputes; expiry is not guaranteed freedom to launch.

Limits: Litigation allegations are not final court findings; verify rights, jurisdiction and date.

Original sources · accessed 21 Oct 2026: Source 1

Editorial references: the cybersecurity opening, mind map and donut, and the drone article's cover, layout and evidence cards were inspected directly. They inform presentation, not industry facts: https://thedexs.com/post/cybersecurity-industry-report/ and https://thedexs.com/post/drone-networks/ . Accessed 21 October 2026.