Competitive Analysis Agent — Example Case Studies

One real run per Report Hub report type, showing what the report actually found

Unlike a composite/illustrative example, everything below is real: real topics, run through the real, production pipeline, during internal development testing -- not invented companies or invented figures. Framed as internal validation runs, not named customer testimonials -- the separate "who's using this" page (Product_Roadmap_Tracker.md) is still the right home for permissioned customer quotes, once we have them. Each report referenced below is saved in my_research_agent/Reports if you want to open the source file directly. Filed here as "Case Study N" by report type, matching the Regulatory Agent case-study format, so both are easy to find side by side.

Case Study 1: Combined Research Report

Topic	CXCL1 (C-X-C Motif Chemokine Ligand 1)
Report used	Combined Research Report (full, all sections)
Reporting period	2026-04-26 to 2026-07-25 (last quarter)
Source file	Combined_Report_cxcl1_..._2026-07-25_2115.docx

The Challenge

CXCL1 is a chemokine that shows up across several unrelated therapeutic areas at once -- tumor biology, chronic inflammatory disease, and chronic pain -- exactly the kind of topic where checking databases one at a time either misses real matches phrased differently, or buries them under tangential noise.

How It Was Used

A live search across the full 20-source pipeline: Topic box, a short paragraph of additional context on CXCL1's known biology, Enter. No saved search, no pre-seeded data.

What the Report Surfaced

- 9 total records across every source, from 9 distinct organizations/journals and 53 unique authors -- honestly reported as 0 grants and 0 clinical trials this quarter, not padded to look bigger.
- An AI-generated Executive Intelligence Summary reading across every source together, correctly naming three real organizations showing concentrated activity (Universitat Internacional de Catalunya, Inserm, Acta Neurologica Belgica).
- Three distinct, correctly-identified disease contexts where the gathered publications suggested therapeutic relevance: triple-negative breast cancer, epilepsy-related ventricular remodeling, and bladder cancer.
- A plain, direct statement that the space is still early-stage (no clinical trials or grants found this quarter) rather than a report that reads as more mature than the underlying data supports.

The Outcome

Reviewed directly against the source records, the summary held up -- correct organizations, correct disease framing, nothing invented.

> *"I quick check and 'all' the data look good! wow! I think we got it! data is our north star... we will get far with good data!"*

Case Study 2: BD Intelligence One-Pager

Topic	PD-1 (Programmed Cell Death Protein 1)
Report used	BD Intelligence One-Pager
Records / sources	47 records across 7 sources with a match, 2 countries, 7 modalities
Source file	BD_OnePager_pd_1_..._2026-07-25_1741.docx

The Challenge

PD-1 is one of the best-known targets in oncology -- a well-known name doesn't mean a small, easy space to skim. A BD reader needs a one-minute read on where the real activity concentrates before deciding whether the full itemized report is worth a closer look.

How It Was Used

Ran the One-Pager alongside the Full Report for the same PD-1 run, generated from the same underlying data with no separate re-entry.

What the Report Surfaced

- Biologics dominate the space at 79% of all matched records (37 of 47) -- stated plainly in a real, computed Strategic Insight line, not a vague impression.
- Four modalities -- CRISPR/Gene Editing, AAV/Gene Therapy, Cell Therapy, and Medical Device/Diagnostic -- each flagged "HIGHEST WHITE SPACE" on a single real record, each tied to a real named organization (e.g. Tongji Hospital for the AAV/Gene Therapy record, University of Alabama at Birmingham for Cell Therapy).
- A modality/BD-tier table computed directly from the gathered records, not a generic industry breakdown -- specific organizations, specific record counts, per modality.

The Outcome

A BD reader gets the "is this worth a deeper look, and where" answer in under a minute -- with the under-explored modalities specifically flagged, not buried in the same list as the crowded ones.

> *No customer quote captured for this specific run -- flagged here rather than filled in.*

Case Study 3: Active Researcher Landscape

Topic	Interferon-γ (IFN-γ)
Report used	Active Researcher Landscape
Window	Last 2 years -- 188 researchers active, 7 with a current grant record
Source file	Researcher_Landscape_interferon_ifn_2026-07-25_2244.docx

The Challenge

IFN-γ is a large, long-studied space -- a partnering or outreach team doesn't need everyone who's ever published on it, they need who's demonstrably active right now, ranked by the strongest "funded today" signal, not just publication volume.

How It Was Used

Ran Active Researcher Landscape over a 2-year window (2024-07-25 to 2026-07-25).

What the Report Surfaced

- 188 researchers active in the window, 7 with a real, current grant record and 181 with a publication or preprint -- grants ranked first, since a current grant is the strongest "active right now" signal this suite tracks.
- The #1-ranked researcher by grant activity, Hong Wang at the Monell Chemical Senses Center, shown with 2 real NIH grants (2025) plus 3 NIH-confirmed publications -- cross-referenced directly against NIH's own Publications API by grant number, not a name-based guess.
- Every grant and publication hyperlinked straight back to its real NIH RePORTER project page -- e.g. "Mechanisms of inflammation-triggered taste lo..." and "Diversity Supplement to R01 DC018042", both real, live links.

The Outcome

A partnering team gets a name, an institution, and a factual (not guessed) publication link to start an outreach conversation with -- not a generic search result.

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Case Study 4: Innovation Signals

Topic	CXCL1 (C-X-C Motif Chemokine Ligand 1)
Report used	Innovation Signals
Window	2026-04-26 to 2026-07-25 (last quarter)
Source file	Innovation_Report_cxcl1_..._2026-07-25_2115.docx

The Challenge

A phrase-based novelty search ("first-in-class," "breakthrough," and similar) only catches work that happens to use that language -- genuinely different work described in ordinary terms slips through a keyword-only search entirely.

How It Was Used

Ran Innovation Signals for the same CXCL1 run, with the semantic-outlier layer (embedding-based, on by default when local AI is available) active.

What the Report Surfaced

- Zero grants and zero publications matched a literal novelty phrase this quarter -- an honest, unpadded result, not a forced match.
- One publication flagged anyway, not by keyword but by the semantic-outlier signal: a paper connecting morin (a small-molecule flavonoid) to CXCL1/TLR4/NF-κB signaling in kidney injury -- its own text embedding sat a real, statistically meaningful distance from every other record this run gathered.
- That record shown with a real OniX Matching Score of 4/5 and a one-line grounded reason: "explicitly mentions CXCL1 as one of several inflammatory cytokines affected by morin treatment" -- not a generic AI blurb.
- The report also plainly discloses its own pipeline state for this run: 19 records individually AI-validated, MeSH concept matching active, and 5 highly-cited OpenAlex works flagged as possibly missing from this run's own results -- shown to the reader, not hidden.

The Outcome

The semantic layer caught a genuinely different angle -- a repurposed natural compound affecting CXCL1 signaling -- that a literal novelty-phrase search alone would have missed entirely.

> *No customer quote captured for this specific run -- flagged here rather than filled in.*

Case Study 5: Target-Disease Opportunity Report

Topic	CXCL1 (C-X-C Motif Chemokine Ligand 1)
Report used	Target-Disease Opportunity Report (Open Targets)
Disease associations returned	25, each with a real, published evidence-strength score
Source file	Target_Opportunity_Report_cxcl1_..._2026-07-25_2115.docx

The Challenge

For a topic that resolves to a real, named biological target, a reader wants the full evidence picture -- not just the disease areas this run's own gathered grants and publications happened to already cover.

How It Was Used

Ran the Target-Disease Opportunity Report for CXCL1, which resolved cleanly to itself as a real Open Targets protein target.

What the Report Surfaced

- 25 real disease associations returned directly from Open Targets' own database, each carrying its own published evidence-strength score (genetics, genomics, drug, literature, and animal-model evidence combined, 0-1 scale) -- explicitly labeled as evidence strength, never a probability or confidence number.
- Associations spanning six therapeutic areas: Reproductive System/Breast Disease (breast carcinoma 0.133, ovarian carcinoma 0.109), a broad Cancer/Benign Tumor bucket covering 18 named cancer types, Gastrointestinal Disease, Hepatobiliary Disorder, Endocrine System Disorder, and Nervous System Disorder (glioblastoma 0.105).
- Real, hyperlinked example publications attached directly to the relevant disease area -- e.g. the same morin/CXCL1 kidney-injury paper from Case Study 4, plus a separate paper validating a tumor-derived CXCL1 qPCR assay for patient selection.

The Outcome

An investor or BD reader gets the full biological-evidence landscape for the target in one place, with under-explored areas reading as flagged opportunity rather than a dead end -- exactly the framing Open Targets' own methodology calls for.

> *No customer quote captured for this specific run -- flagged here rather than filled in.*