QUANTORI

AI-Enabled R&D: Building Workflows and Pipelines with Agentic AI

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12 of the 15

Largest pharmaceutical companies served

30+ Startups & Scale-ups

Innovative companies and research institutions served

20+ Years

Extensive experience in developing informatics solutions for research-driven HCLS clients

700+ Experts

Software Engineers, Data Scientists, Domain Specialists, Cloud Engineers, Digital Health Experts

aws PARTNER Advanced Tier Services

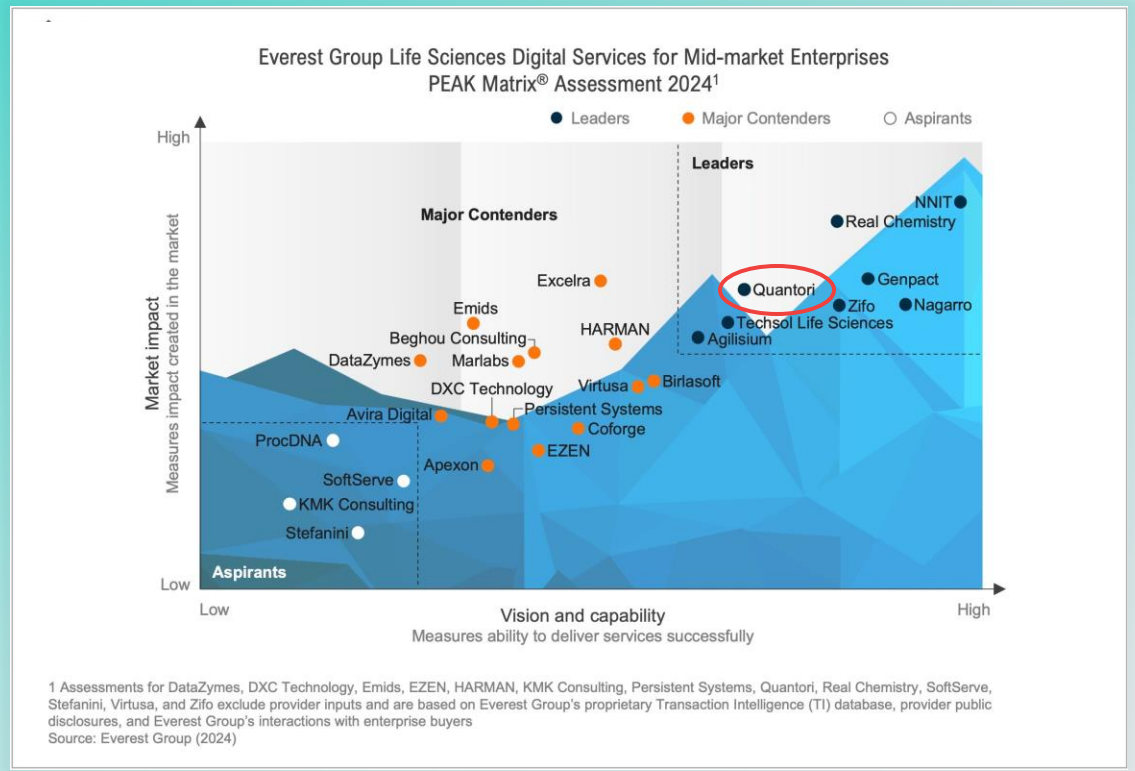
Google Cloud Partner

Azure

EXPERTISE Healthcare & Life Sciences Google Cloud

30 peer-reviewed scientific articles (2019 – present)

Leader in the Everest Group PEAK Matrix Assessment



Scientists Lead the Agentic Systems as Strategic Coordinators

Key AI Industry Challenges

Self-hosted, Open-access LLMs:

Not Life Sciences-Specific

Not trained on curated biomedical data or tuned for specific life sciences tasks.

No Plug-and-Play Integration

Don't easily connect to lab systems, data lakes, or pipelines without engineering effort.

No Enterprise-Ready Features

Missing built-in tools for roles, audit logs, or monitoring at scale.

Limited Compliance & Data Privacy

Not aligned with HIPAA, GxP, or clinical data governance needs.

Limited Scalability & Optimization

Requires heavy tuning and infra setup for production-level use.

Cloud-based Commercial Solutions:

Not Life Sciences-Specific

Models not tuned for drug discovery, research, or clinical workflows.

Technology Lock-In

Hard to switch providers due to limited portability and integration constraints.

Expensive & Resource-Intensive

Reliance on high-cost vendor infrastructure.

Restrictive Data Policies

Murky long-term data ownership and sovereignty.

In Life Sciences – A Vast Ocean of Models and Data for Rnd – How To Integrate Them Into Your Research Process?

Foundational models + public databases + open-source models from industry leaders, like Google TxGemma

TxGemma MedGemma

BioFMs

Genomics & DNA Sequence Modeling
Models: DNABERT, GenSLMs, HyenaDNA
Downstream tasks:
- Synthetic promoter design
- Mutation effect prediction
- Functional annotation

Single-Cell Analysis
Models: scGPT, scBERT, Geneformer, etc.
Downstream tasks:
- Cell type annotation
- Trajectory inference
- Gene expression modeling

Antibodies & Immune Repertoire Modeling
Models: AntiBERTy, IgLM, AbLang, etc.
Downstream tasks:
- Antibody sequence generation
- Binding affinity prediction

TCR (T-Cell Receptor) Modeling
Models: TCR-BERT, TITAN, DeepTCR
Downstream easks:
- TCR-epitope interaction prediction
- Immune repertoire analysis
- TCR antigen specificity modeling

Drug Discovery & Target Identification
Models: ChemBERTa, MolBERT, etc.
Downstream Tasks:
- Drug-target interaction prediction
- Molecular property prediction
- Compound screening & optimization

Proteins & Peptide Modeling
Models: ESM, ProtTrans, AlphaFold2
Downstream tasks:
- Protein structure prediction
- Protein function annotation
- Protein-protein and protein-ligand interaction modelling

Examples of databases for inclusion:

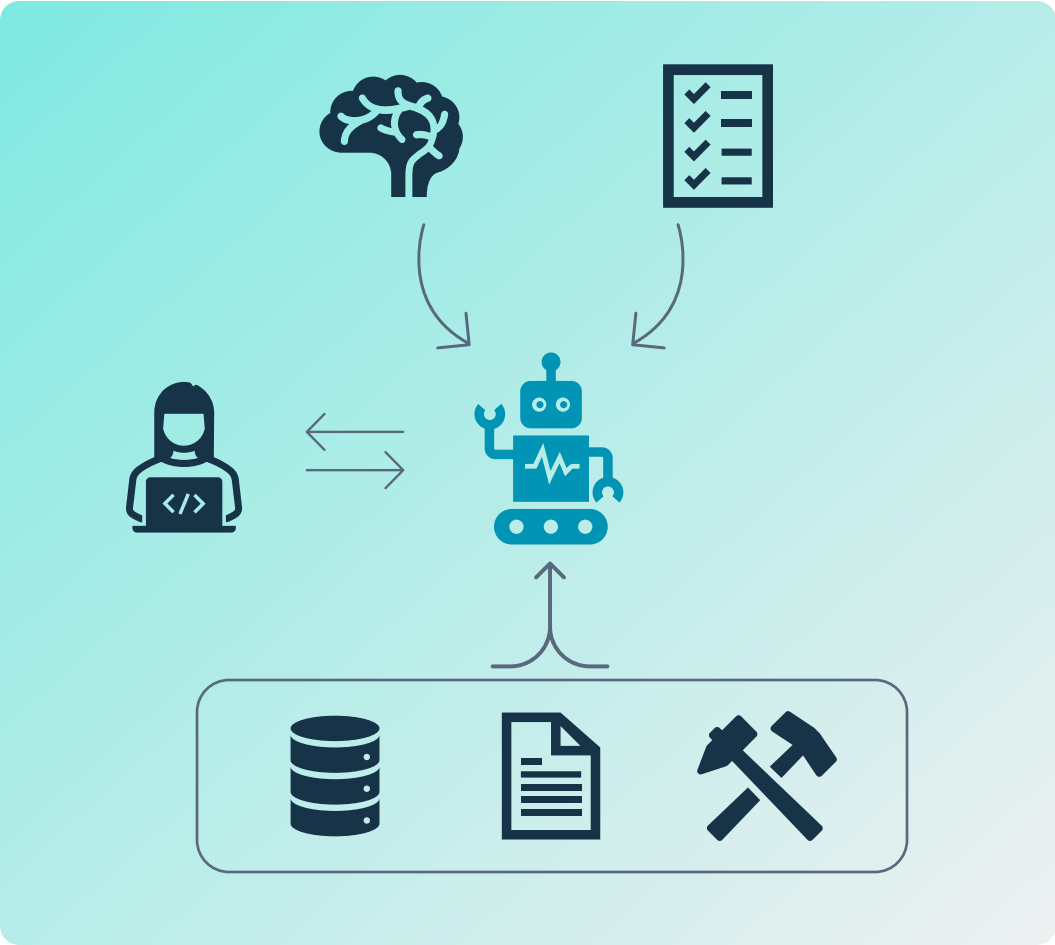
Genomics & Transcriptomics
- The Cancer Genome Atlas Program (TCGA)
- Cancer Cell Line Encyclopedia (CCLE)
- UCSC Genome Browser
- ENCODE (Encyclopedia of DNA Elements)
- The Genome Aggregation Database (gnomAD)
- ClinVar

Single-Cell Datasets
- TCGA Single-Cell Data
- Single Cell Portal (Broad Institute)
- CellXGene Discover

Chemical Databases
- ChEMBL
- ZINC
- PubChem
- BindingDB

Proteomics & Metabolomics
- PRIDE (Proteomics Identification Database)
- PeptideAtlas & SWATHAtlas
- Metabolomics Workbench

What Is Agentic AI and Why Is It So Special?



Agentic AI autonomously plans, remembers, uses tools, and makes decisions to achieve goals beyond single prompt responses.

Key Properties:

- Autonomous, rather than reactive
- Plans and orchestrates, rather than waits for prompts
- Adaptable and driven by feedback, rather than static memory
- Deep tool integration out of the box
- Self-validates to avoid hallucinations
- Highly customizable rather than general-purpose

Quantori's Healthcare and Life Sciences Applications

For End-Users

One-stop hub for AI/LLM tasks
Easy model selection & ready-to-use apps
Fast data access & custom tool creation
Team collaboration & Bio-LLM integration

For Leadership

Secure, cost-efficient, centralized management
Flexible access controls
Unified platform for all teams

For Collaborators

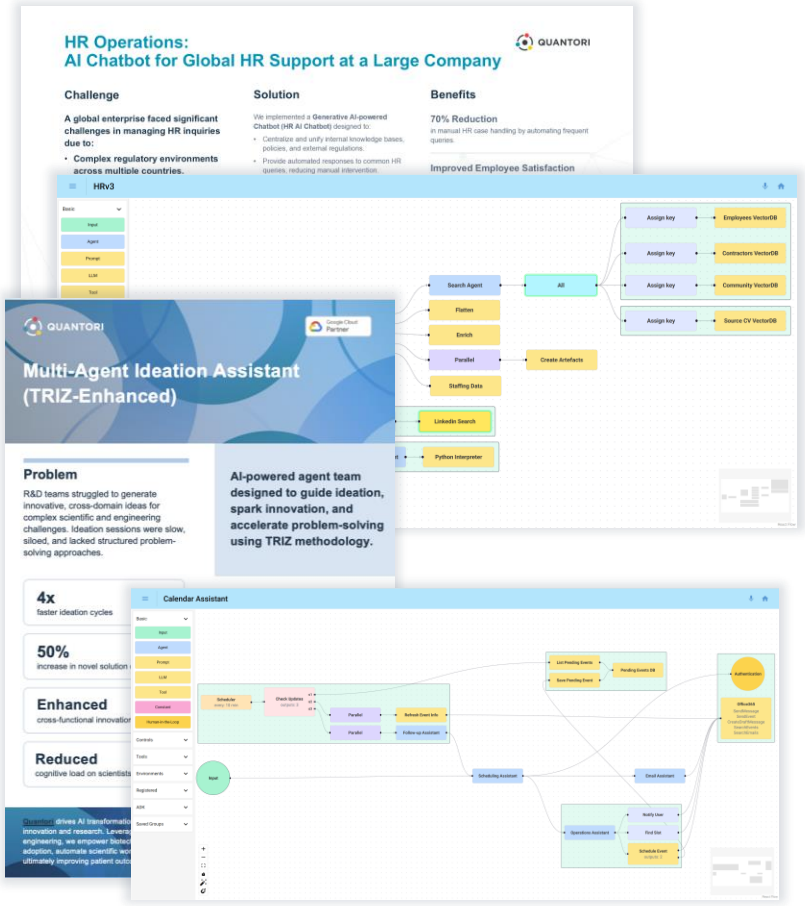
Simple data sharing

Agent System	Description	Use Cases
Drug Repurposing	Identifies new uses for existing compounds using semantic and data-driven reasoning	Drug Discovery, Repurposing Pipelines
Ideation to Innovation	Generates novel research hypotheses by synthesizing multi-source data	Scientific Co-Pilots, Hypothesis Generation
Drug Target Discovery	Automates target identification from fragmented data	Target Discovery & Validation, Competitive Intelligence
Drug Optimization	Enhances PK/PD modeling and dosing strategies to improve clinical success	PK/PD Modeling, Simulation & Refinement
Biomarker Discovery	Integrates clinical, molecular, and genomic data to identify biomarkers	Multiomics, Bioinformatics Pipelines
Scientific Context Search	Contextualized retrieval across literature and databases for rapid insights	Competitive Intelligence, Literature Mining
Rare Disease Diagnosis	Combines structured and unstructured patient data for rare disease identification	Diagnostics, RWE
Platform for PK/PD	Orchestrates EDA, modeling, and reporting agents for data-driven PK/PD	PK/PD Modeling, Simulation, Regulatory Insights

AI-Driven Innovation across HCLS Organizations

Business Use Cases of Q Agentic AI

HR Operations	• AI system for Global HR support • Onboarding and employee care for a large pharma client
Talent Acquisition	• Staffing Agent • Search for candidates
Decision support and BI	• Multi-Agent Ideation Assistant
Scheduling AI Assistant	• Multi-agent solution for email and calendar management
Enterprise Knowledge Manager	• Multi-agent solution to manage and evolve enterprise knowledge
Policy Management	• A chatbot to support and explain HR, security, and compliance policies



AI-Driven Innovation across Business Operations

Quantori’s Agentic AI in a Nutshell

Quantori Agentic AI Platform

A scalable foundation enabling modular AI agents to act autonomously and collaboratively across scientific domains.

LLM-Orchestrated Intelligence

Agents reason, retrieve, analyze, and act in scientific workflows.

Customizable Ecosystem

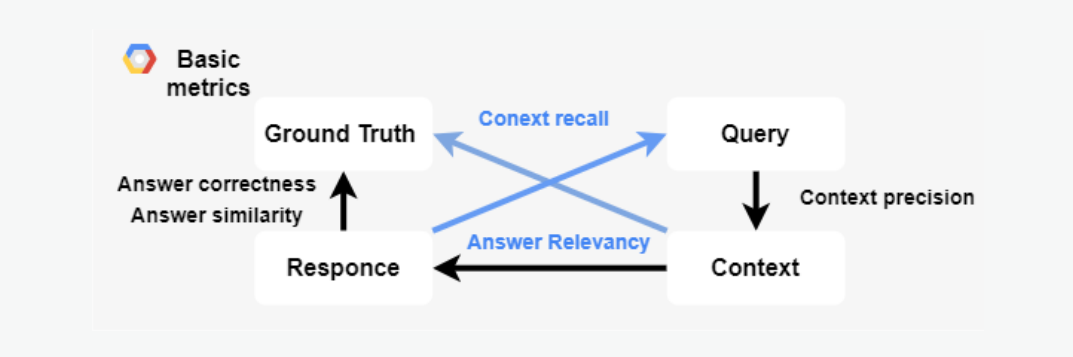
Tailored configurations for use cases such as drug discovery, clinical data analysis, and regulatory support.

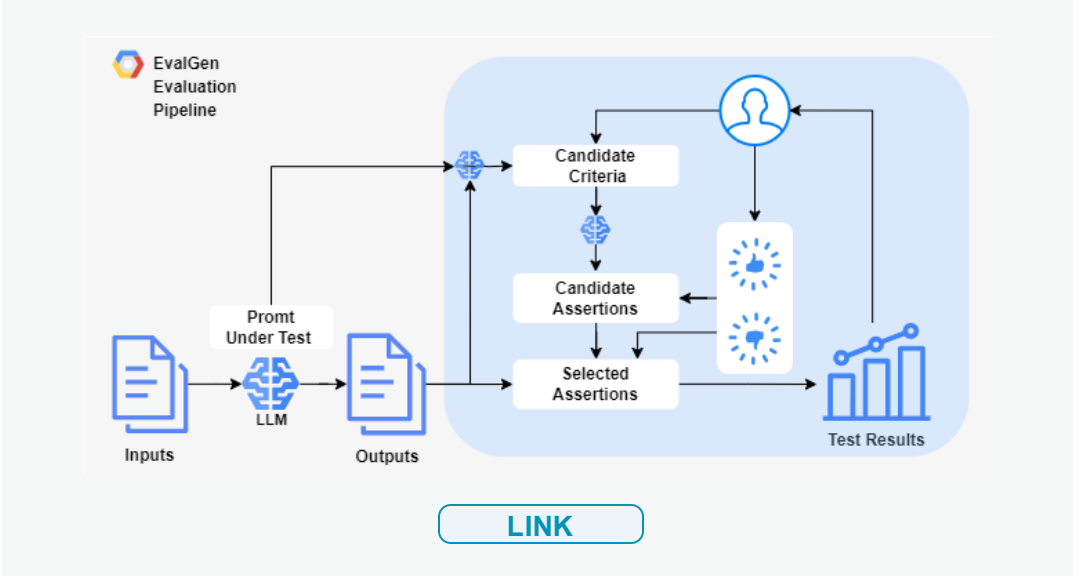
Cloud-Neutral Deployment

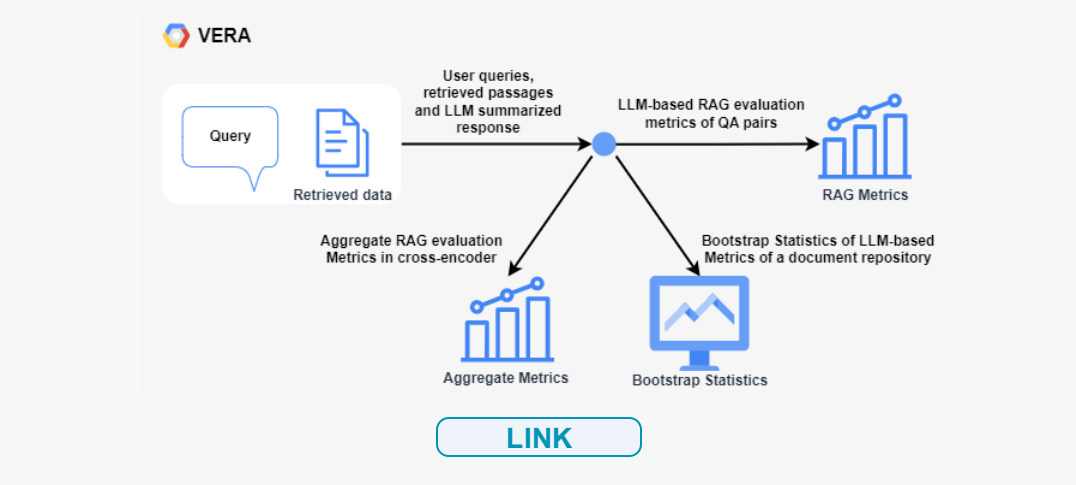
Agentic platforms operate securely across AWS, Azure, GCP, or on-prem.

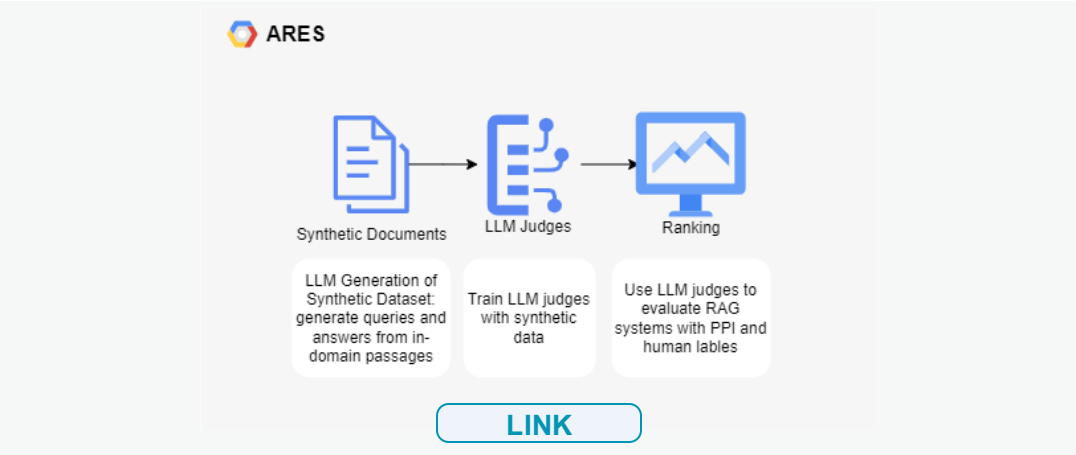
AI Agents Validation Frameworks

Existing validation methods, literature, benchmarking datasets









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