



# Digital drug discovery and preclinical solutions

Our solutions enhance and accelerate the drug discovery process with AI, automation, and advanced analytics.

Life sciences companies are facing unprecedented pressure to bring new drugs to market faster than ever before while managing costs and meeting regulatory demands. At Cognizant, we provide the world's leading life sciences companies with end-to-end digital solutions that enhance each step of the discovery and preclinical process.

Our solutions leverage artificial intelligence (AI), automation technologies and advanced analytics to help life sciences companies streamline processes, increase productivity, and accelerate the drug development process.

## Our experts help our clients:

- Enhance precision and expedite discovery by integrating systems for scientific experimentation.
- Optimize research operations by employing advanced lab informatics platforms, such as electronic lab notebooks (ELN), laboratory information management systems (LIMS), and high throughput screening to streamline data acquisition, analysis, and management.
- Develop sophisticated models and simulations to facilitate a more targeted approach in the identification of promising drug candidates.
- Employ AI-driven methodologies to harness machine learning algorithms for de novo drug design, intelligent content generation, and cognitive search capabilities.

Our approach propels the journey from lab research to patient care, enriching the research experience, boosting scientists' productivity, enhancing therapeutic outcomes, and streamlining the path to wellness.

## Digital solutions for deeper insights, faster drug discovery, and better patient outcomes.

### Lab modernization

Transform your laboratory operations, including early research, translational sciences, integrated chemistry manufacturing and controls (CMC), quality control, and diagnostics, with integrated solutions that automate lab processes, enhance the scientists' experience, and improve productivity. We help our life sciences customers develop a unified platform that makes it easier for scientists working on the bench to design, document, and track experiments, and collaborate with other scientists.

Our solutions standardize and optimize scientific workflows, experiments, and methods across lab informatics platforms, such as ELNs and LIMS. We also provide support for high-throughput screening and biologics systems. These platforms, together with connected instruments, set the stage for improved method execution and heightened "lab in the loop" efficiency.

Access various applications and dashboards through a "single pane of glass" for improved productivity. Enable remote teamwork and increased procedural accuracy by harnessing AR and VR technologies for complex data visualization.

Our lab modernization solutions include advisory services and blueprint and reference architecture creation. Cognizant's holistic approach helps enhance the efficiency of your lab operations and prioritizes waste reduction and resource optimization.



## Data modernization

Our unique approach to data modernization significantly enhances machine learning, analytics, and simulations for research data and predictive modeling. We help clients build customized, cloud-based data platforms that offer scalability and flexibility to accommodate large and diverse data sets.

We focus on creating robust data lakes rooted in FAIR principles, encompassing multi-omics studies and multimodal data. Our data fabric architecture, underpinned by ontology and semantics, facilitates this innovative process.

Our data services streamline the preparation process by transforming source data into a universal model for seamless CDISC SEND conversion.

We offer data visualization as a service and predictive and prescriptive analytics, such as cell line experiment progress and insights, and protein structure and drug response predictions.

Data modernization is instrumental for discovery labs investigating biological pathways across various experimental contexts—in vivo, in vitro, and in silico—to aid in accurate diagnosis and prognosis, thereby enabling precision medicine.

## AI enhanced drug discovery

We leverage AI to transform drug discovery, accelerating the exploration of new biological pathways and targets. Our technology enables de novo drug design, enhancing the predictive accuracy of drug efficacy and safety profiles by simulating molecular interactions and outcomes. Our AI-driven approach also facilitates drug screening, polypharmacology, chemical synthesis and drug repurposing, and enhances CRISPR gene editing for precise genetic modifications.

We leverage our own enterprise-wide platform, Cognizant Neuro AI, to deploy AI solutions at scale, helping to ensure flexibility and security. The platform is designed to foster human-AI collaboration and is supported across multi-platform, multi-cloud ecosystems.

## Generative AI in drug discovery

Gen AI is redefining drug discovery, significantly boosting efficiency and productivity. Our expertise in fine-tuning LLMs enables the automation of content creation, cognitive searches, and the generation of novel compounds, protein structures, and complex RNA folding.

Leveraging gen AI can help make target identification more accurate and efficient; standardize and streamline documentation to improve compliance; and accelerate signal detection and literature interpretation to identify and validate safety signals.

Key applications include protein language models for accurate protein structure prediction, BLA and IND submissions, docking summaries for molecular interactions, the establishment of knowledge management hubs, and comprehensive literature searches of external (e.g. NCBI, PubMed, Pistoia Alliance), internal, proprietary (e.g. purchased data), and experimental data sources.

## Application implementation management and support

We provide application and end user support to scientists across the entire research lifecycle, including target identification and validation, lead identification and optimization, preclinical and safety studies, translational sciences, and process development. Our managed services for scientists and lab support fortify scientific pursuits with solid technical and operational backing.

Our services encompass system implementations, enhancements, upgrades, and optimizations. We help clients manage integrated R&D environments and configure user interfaces that provide specific workflow tools needed by researchers in multiple disciplines. We also offer service request, incident, problem and change management.

In addition, we offer business analysis, project management, and benchtop, technical and functional support inside the lab, including equipment connectivity and monitoring, lab computer management, and storage management.

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Cognizant's Life Sciences business leaders are committed to advancing science to improve patient outcomes by partnering with clients to drive continuous improvement in the way they do business. Cognizant helps its clients set the pace in clinical development, strengthen their regulatory infrastructure, modernize manufacturing, and increase market competitiveness. The Cognizant Life Sciences team provides domain-aligned consulting, technology, and business process solutions globally, serving the world's leading pharmaceutical, biotech and medical device companies.

To learn more about Cognizant's Life Sciences practice, please visit: [cognizant.com/lifesciences](https://cognizant.com/lifesciences)



Cognizant (Nasdaq-100: CTSH) engineers modern businesses. We help our clients modernize technology, reimagine processes and transform experiences so they can stay ahead in our fast-changing world. Together, we're improving everyday life. See how at [www.cognizant.com](https://www.cognizant.com) or follow us [@Cognizant](https://twitter.com/Cognizant).

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