

AI News Digest

03/16/2026 - 03/22/2026

WEEKLY DIGEST: BIOLOGICAL & BIOMEDICAL SCIENCES

AI Revolutionizes Drug Discovery and Research Automation

Recent advancements in artificial intelligence are significantly transforming the landscape of drug discovery and biomedical research. OpenAI is developing fully automated researchers that leverage large language models to enhance scientific inquiry. Meanwhile, Roche and Genentech are implementing AI-driven strategies to streamline their drug discovery processes, integrating experimental data and AI in a cohesive manner. These innovations promise to accelerate breakthroughs in diagnostics and therapeutic development.

KEY FINDINGS

- ✓ OpenAI is enhancing large language models for scientific research tasks.
- ✓ Roche's Lab-in-the-Loop strategy integrates AI with experimental data.
- ✓ Genentech aims for nearly 90% efficiency in small-molecule drug discovery.

IMPLICATIONS

- Increased automation in research could lead to faster scientific discoveries.
- AI integration may reduce costs and time in drug development processes.
- The collaboration between AI and biomedical sciences could redefine research methodologies.

Key Metrics: 90% efficiency target for Genentech's small-molecule drug discovery.

1. OpenAI is throwing everything into building a fully automated researcher

Category: Research

Departments: Computer Science, Biological Sciences, Chemistry & Biochemistry, Physics, Mathematical Sciences

Topics: Large Language Models, Reasoning Models, Automated Research, Scientific Problem Solving

Impact Score: 26.0

Rubric Scores

Research Relevance: 5

Educational Value: 4

Innovation / Novelty: 5

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 3

Researchers at OpenAI are advancing the capabilities of large language models (LLMs) to tackle long-running scientific research tasks, building on the success of coding agents like Codex. The development of reasoning models has enhanced the ability of these systems to work independently for extended periods, enabling them to manage complex problems by breaking them into subtasks. Recent applications of GPT-5 have led to new solutions for unsolved mathematical problems and breakthroughs in biology, chemistry, and physics. OpenAI aims to apply the problem-solving capabilities demonstrated in coding to broader scientific challenges, prioritizing real-world relevance over theoretical achievements.

<https://www.technologyreview.com/2026/03/20/1134438/openai-is-throwing-everything-into-building-a-fully-automated-researcher/>

2. Roche Scales NVIDIA AI Factories Globally to Accelerate Drug Discovery, Diagnostic Solutions and Manufacturing Breakthroughs

Category: Business

Departments: Pharmaceutical Sciences, Biological Sciences, Computer Science, Industrial, Manufacturing & Systems Engineering

Topics: Healthcare AI, Lab-in-the-Loop Strategy, Digital Twins in Manufacturing, AI-Driven Drug Discovery, Molecule Design Optimization

Impact Score: 22.0

Rubric Scores

Research Relevance: 4

Educational Value: 3

Innovation / Novelty: 4

Practical Impact: 5

Interdisciplinary Potential: 4

Ethical / Policy Implications: 2

Roche and Genentech are enhancing their drug discovery processes through the integration of AI, particularly within Genentech's Lab-in-the-Loop strategy, which connects experiments, data, and AI in an iterative manner. Nearly 90% of Genentech's small-molecule programs utilize AI, resulting in significant time savings, such as a 25% reduction in the design time for a degrader molecule and a backup drug candidate developed in seven months instead of over two years. Additionally, Roche is modernizing pharmaceutical manufacturing by creating digital twins of production facilities using NVIDIA Omniverse libraries, which allows for the simulation and optimization of complex systems prior to implementation. This infrastructure aims to accelerate drug discovery and manufacturing processes, ultimately benefiting patients awaiting new treatments.

<https://blogs.nvidia.com/blog/roche-ai-factories-omniverse/>