



Predictive Biology Benchmark

Help us measure the future of AI in biology!



SecureBio



Bioprotect
Technologies



SecureBio

Who We Are

Research

Non-profit

Cambridge, MA

securebio.org

SecureBio is a non-profit research organization

dedicated to the prevention of future pandemics, based in Cambridge, MA.

The AI×Bio team

develops evaluation to understand the risks posed by advanced AI models in biology.

They work with decision-makers and AI developers

including the NIST AI Safety Consortium, to improve oversight of frontier AI models.

Collaborations & Publications

AI Model Safety Evaluations

SecureBio's biosafety evaluations have been publicly cited in the model cards and system cards of the world's leading AI laboratories:

ANTHROPIC

Claude 3.7, Claude 4

OpenAI

GPT-4.5, o3-mini, o4-mini

Google DeepMind

Gemini 2.5 Pro

X1

Risk Management Framework

Meta

Llama Models

Institutional & Government Partners

- NIST AI Safety Consortium (U.S.)
- European Commission AI Office (EU AI Act)
- Frontier Model Forum
- MIT Media Lab

Publications & Media Impact ([Link](#))

Nature Communications

3 publications

**nature
communications**

TIME Magazine

AI outperforms virology experts (2025)

TIME

Science

Biosecurity and biotechnology policy

Science

Gene Therapy

Biosecurity and emerging technologies

Journal of Aerosol Science

Aerosol evaluations (2025)

Photochemistry & Photobiology

Far-UVC technology

arXiv / bioRxiv / medRxiv

Multiple research preprints

Kevin Esvelt (Director) recognized in Vox "Future Perfect 50"



Bioprotect
Technologies

Who We Are

Consulting, Training & Research

Private Company

Mexico

bioprotect.tech

BioProtect Technologies is a biosecurity company

advancing science through responsible innovation, with services for labs, institutions, and biotech organizations across Latin America.

Our team combines biotechnology, AI, and strategic consulting

to help organizations navigate complex regulatory, dual-use, and cyber-biosecurity challenges.

We work with international organizations and leading institutions

to promote responsible biosecurity practices and governance.

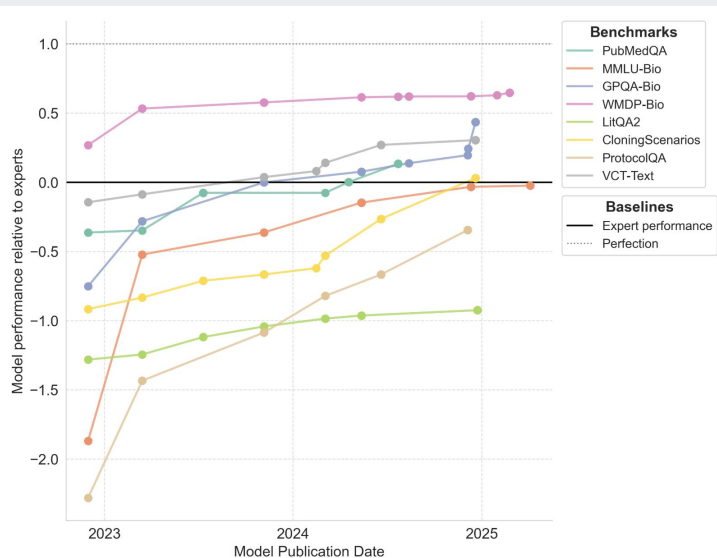
Supporting SecureBio's Predictive Biology Benchmark



Bioprotect is supporting SecureBio's mission by building strategic partnerships to contribute to the "Predictive Biology Benchmark", a critical tool to help governance bodies and decision-makers understand and regulate the risks of frontier AI in biology.

The Challenge

Current benchmarks are saturating



(Justen, 2025)

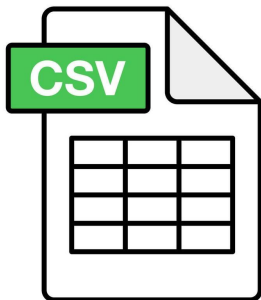
We need a new way to measure!

- AI models already outperform human experts on tests like MMLU-Bio and GPQA-Bio.
- Human-formulated questions are no longer sufficient to measure real progress.
- Predicting real experimental outcomes provides objective ground truth that doesn't rely on human expertise, with a virtually unlimited evaluation space.

What data do we need?

Key Criteria

- ✓ **Unpublished** data (preferred)
- ✓ Robust, genuine biological signals
- ✓ **Scientifically novel**
- ✓ Well-documented / documentable



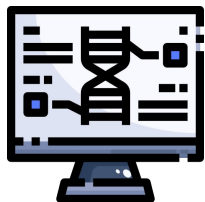
Contribution examples

- CSV with binding strength measurements + experimental setup description
- TSV of viral mutants and their effect on replication
- Experiment descriptions with results (e.g. triplicates)
- Western blots with surprising results + explanation
- Unpublished manuscripts or grant applications with experimental findings

The Predictive Biology Benchmark

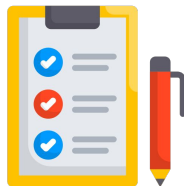
1

You share unpublished
experimental data



2

We build structured
prediction tasks



3

We evaluate how well AI
models predict outcomes



4

We publish aggregated
metrics (never your data)



 Only aggregated performance metrics are published — NEVER raw data or scientific conclusions



What's In It For You

01

Co-authorship on a high-impact publication

All contributors will be **co-authors** on the **main publication**.

02

Detailed model performance results on your data

You'll receive information on how models predict your specific results, including hypotheses and follow-up experiment suggestions.

03

Impact on global science & biosecurity

Your contribution helps develop safeguards against future pandemics and understand AI capabilities and limits.



Your Data Is Fully Protected!

IP

You retain 100% intellectual property ownership

This agreement **does NOT transfer intellectual property rights** to SecureBio. **Your data is and remains yours.**

CF

Full confidentiality

Contributed Materials are **not disclosed to any third party.** Only authorized personnel have access, with technical & physical safeguards.

NO

Your data will NEVER be used to train AI

Raw data and derived Q&A pairs will NOT be released publicly or shared with model developers.

PB

Control over future publication

We only ask for notification if you plan to publish. We can then exclude or flag your contribution in future benchmark versions

How to Contribute

Recommended Format


- ▶ Pre-processed tabular data (similar to supplementary tables)
- ▶ Tidy data principles: each observation in its own row, each variable in its own column
- ▶ Include measures of uncertainty (replicates, CIs, standard deviations)


▶ If you're unsure about the format or suitability of your data, don't hesitate to reach out — **we'll be happy to take a look.**

You can also share

 Experiment descriptions with results

 Figures with unexpected results

 Unpublished manuscripts or grants

 Any well-documented dataset

Join the project!



F

Fill out the
expression of interest

Link

<https://forms.gle/MzCqp7YvzSifbzTY9>



@

Email us
directly

- info@bioprotect.tech
- predictive-bio-bench@securebio.org



T

Schedule a
short call

[Here](#)

Key Documents



Data Agreement



[Link](#)



Online Form



[Link](#)

Summary

01

SecureBio

Non-profit organization dedicated to preventing future pandemics.

02

The Benchmark

Measures AI ability to predict biological experimental outcomes.

IP

Your rights

You retain IP ownership. Data is confidential, never used for AI training.

+

Your benefits

Co-authorship, model results on your data, future collaboration opportunities.

>>

What to share

Unpublished datasets, manuscripts, grants, figures, well-documented experiments.

@

Next step

Fill out the online form:
<https://forms.gle/MzCqp7YvzSifbzTY9>

Thank You



For more information please
contact: info@bioprotect.tech



company/bioprotect-tech



bioprotect.tech