



PHARMTOM™ LABS

Accelerating Dengue Therapeutics Discovery: in Southeast Asia

Redefining AI-powered Drug-Discovery with
Quantum-powered Accuracy

SEA QUANTATHON 2025 | HEALTHCARE AND MEDICINE

AUG 2025



Can You Guess the Disease?



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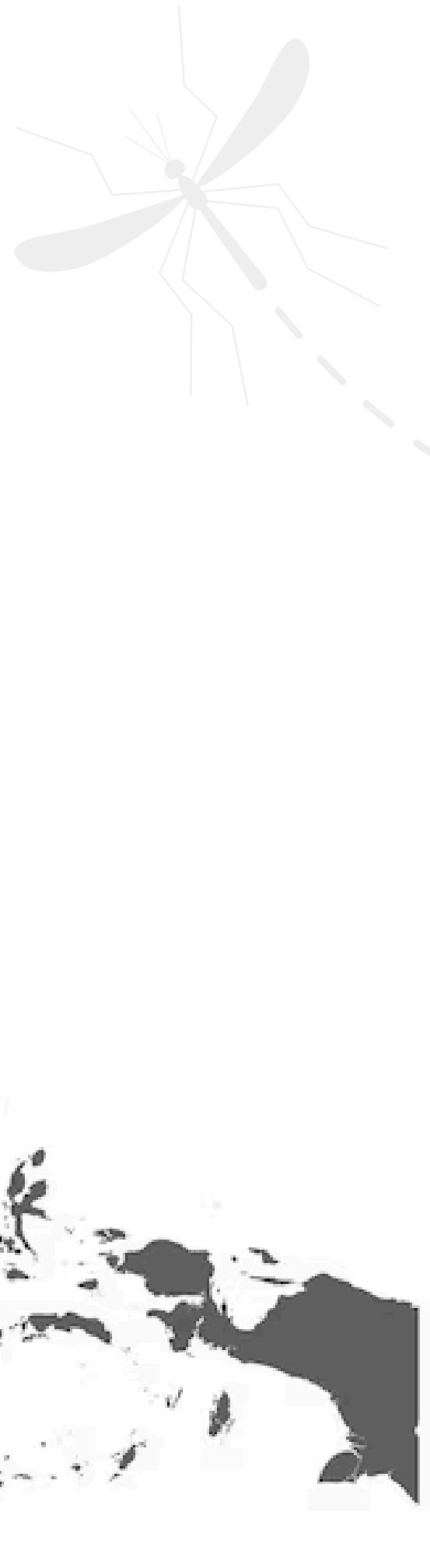
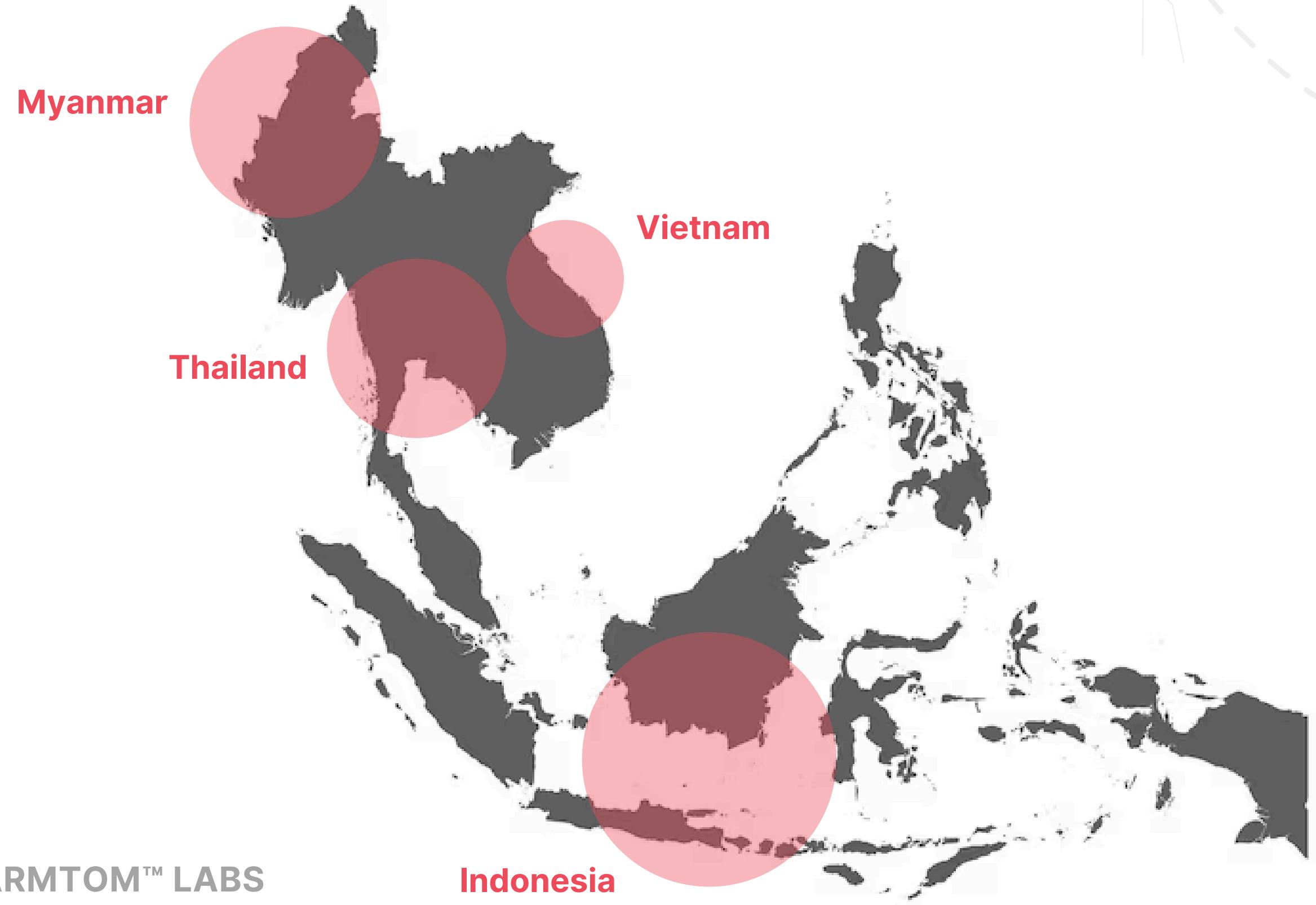
7.6 Million

Dengue cases just in Southeast Asia



Deadly, in Poorer Regions

50.4% global cases are in Southeast Asia





Name: Ma Swe Swe Oo

Age: 8-Year-Old

Country: Myanmar

Context:

- Limited medical care in local villages
- No transport to city hospitals

it's URGENT

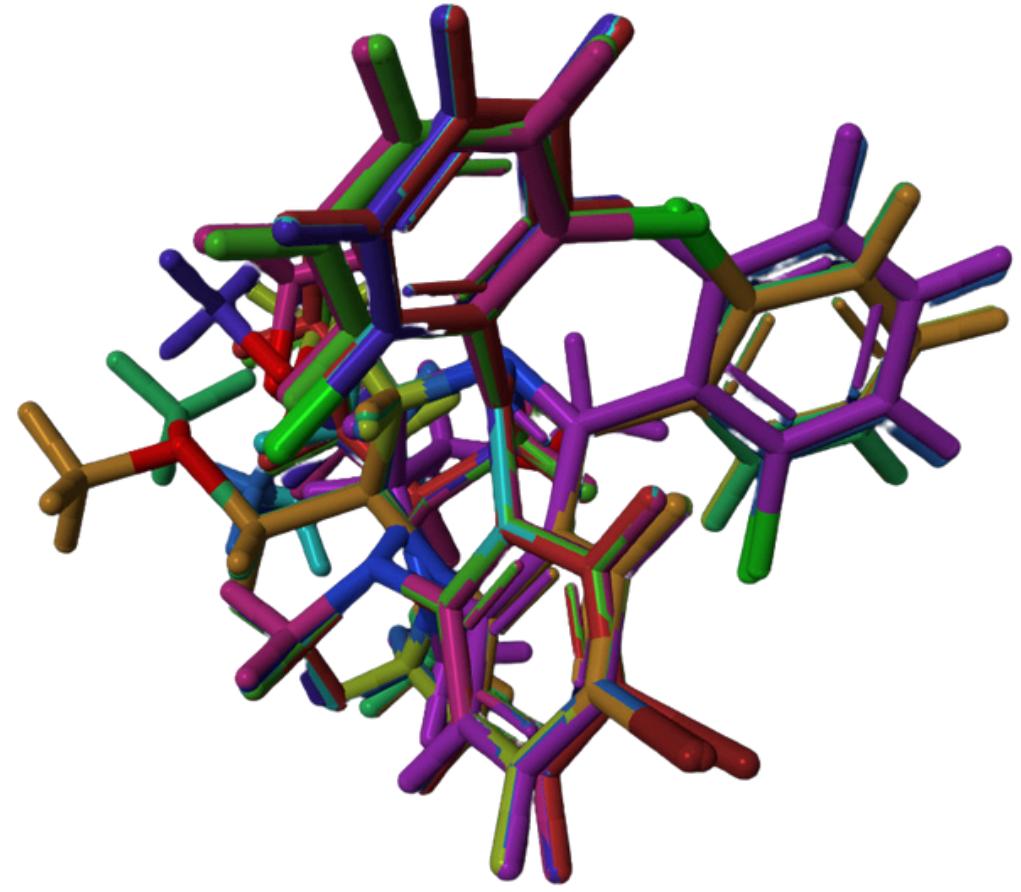
NO Antiviral Treatment | Growing Outbreaks

...and diseases are becoming drug resistant

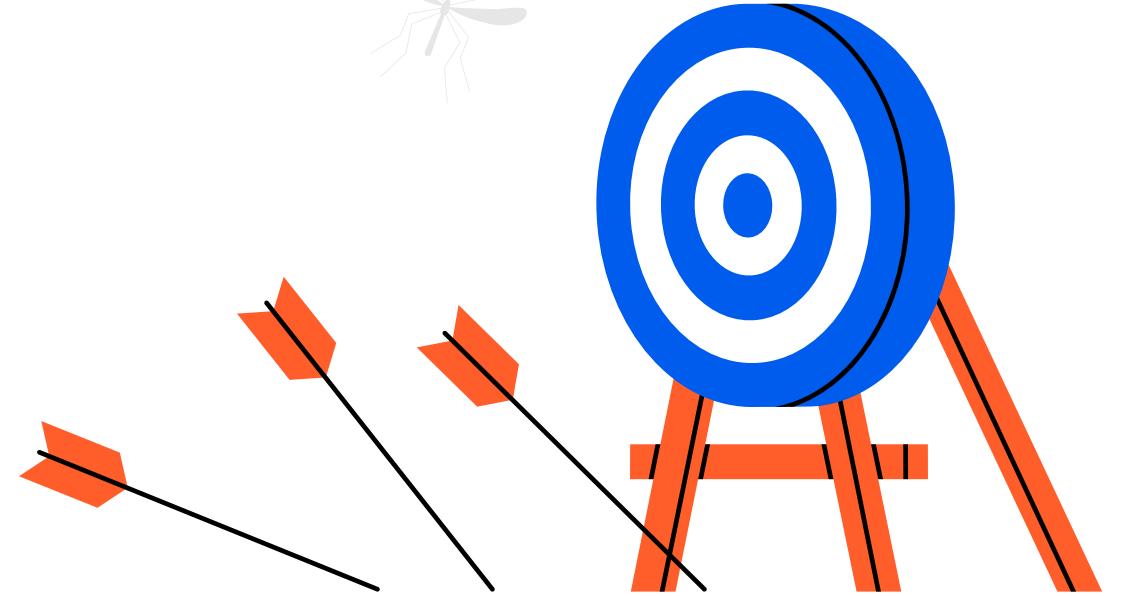
Classical Bioinformatics is NOT ENOUGH



**Fragmented
Toolkits**



**Inaccurate 3D
Molecular Shapes**



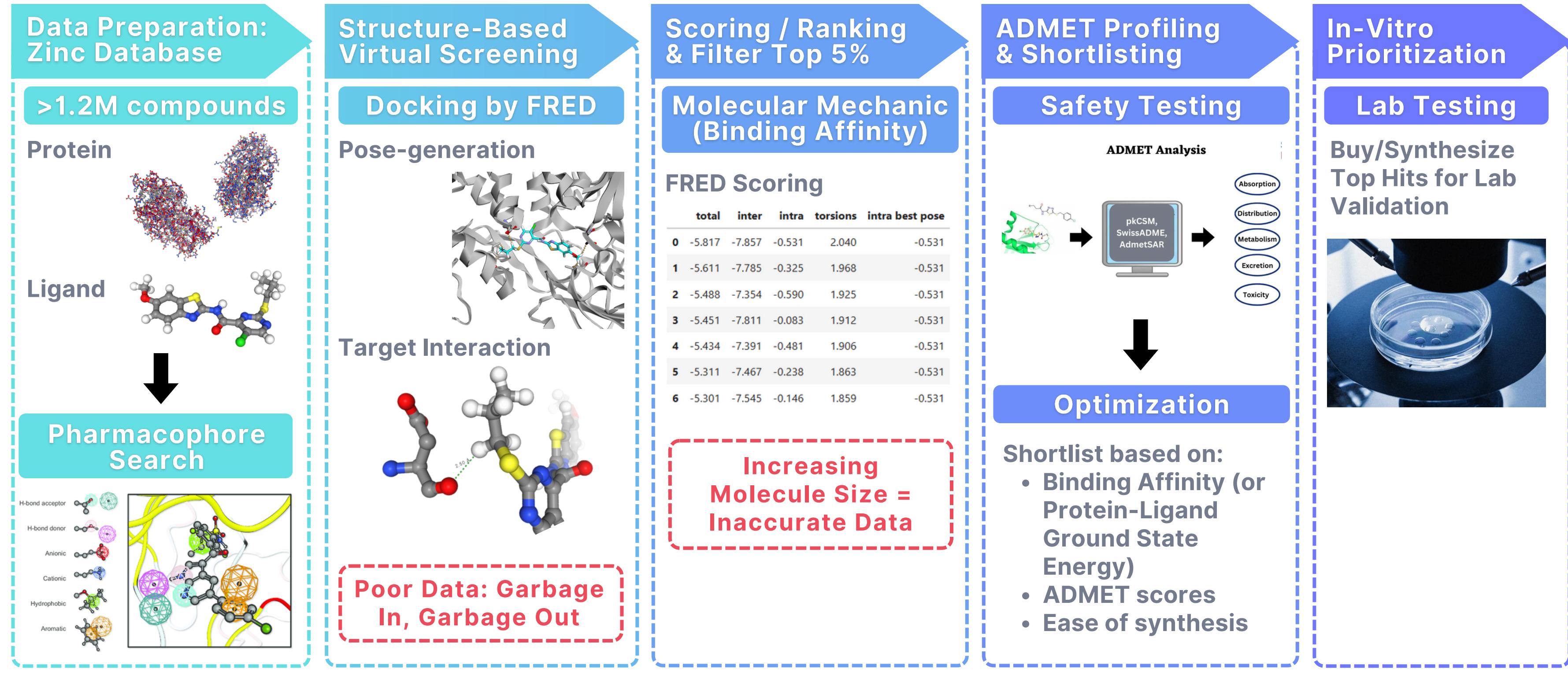
**Limited Scoring
Accuracy**



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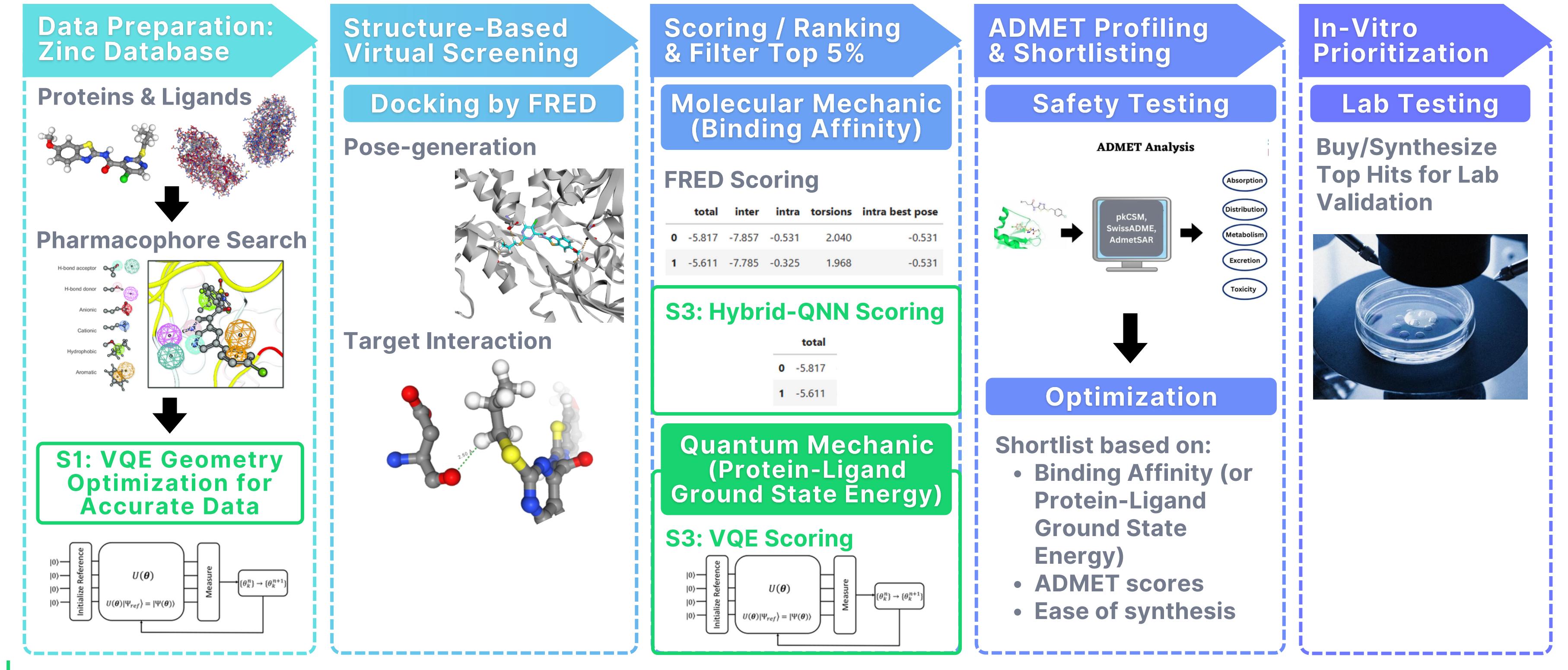
State of the Art in Classical Bioinformatics



Fragmented Toolkits



Pharmtom™ Engine: Quantum-Enhanced Virtual Screening Workflow

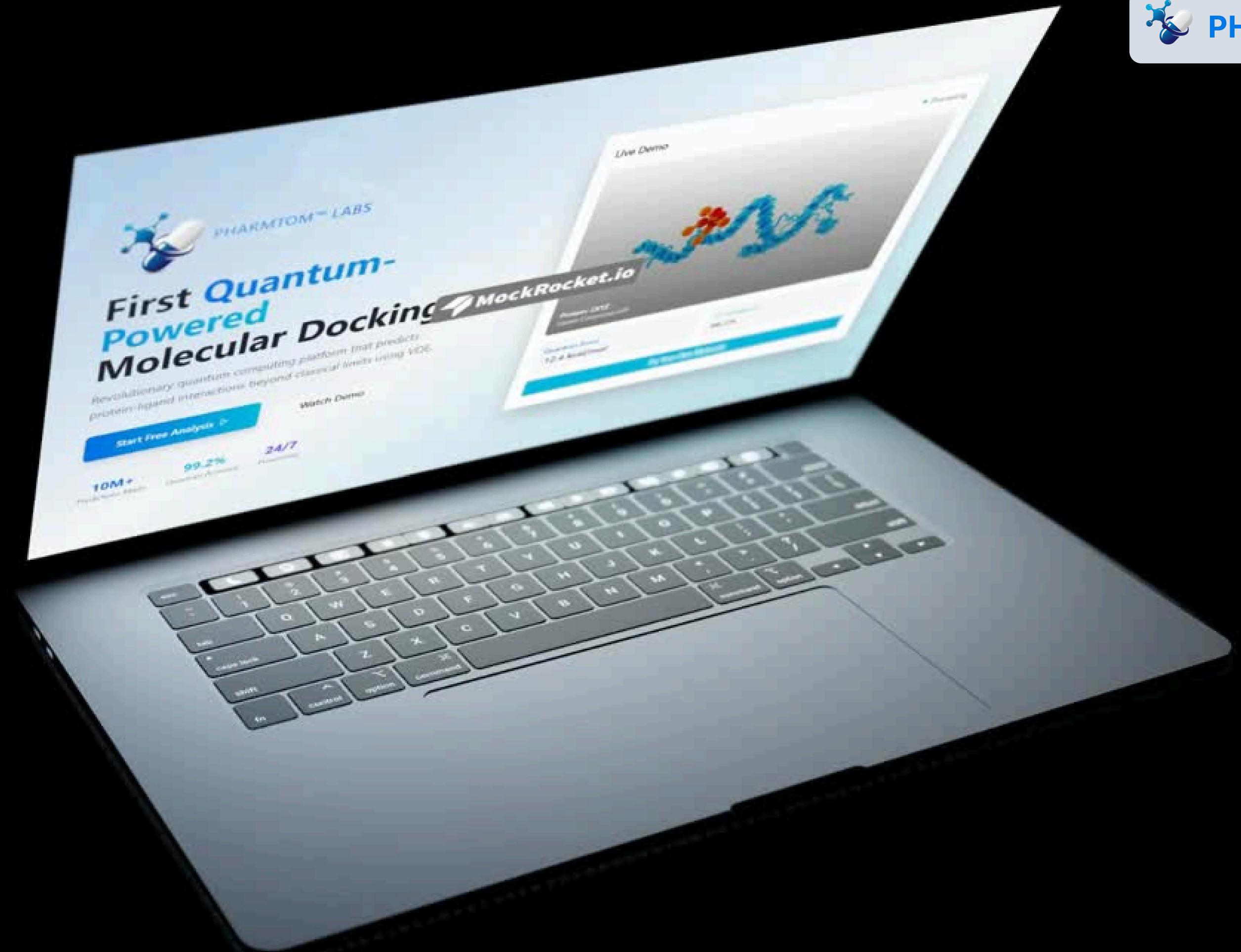


S3: Unified, NISQ-Optimized Platform



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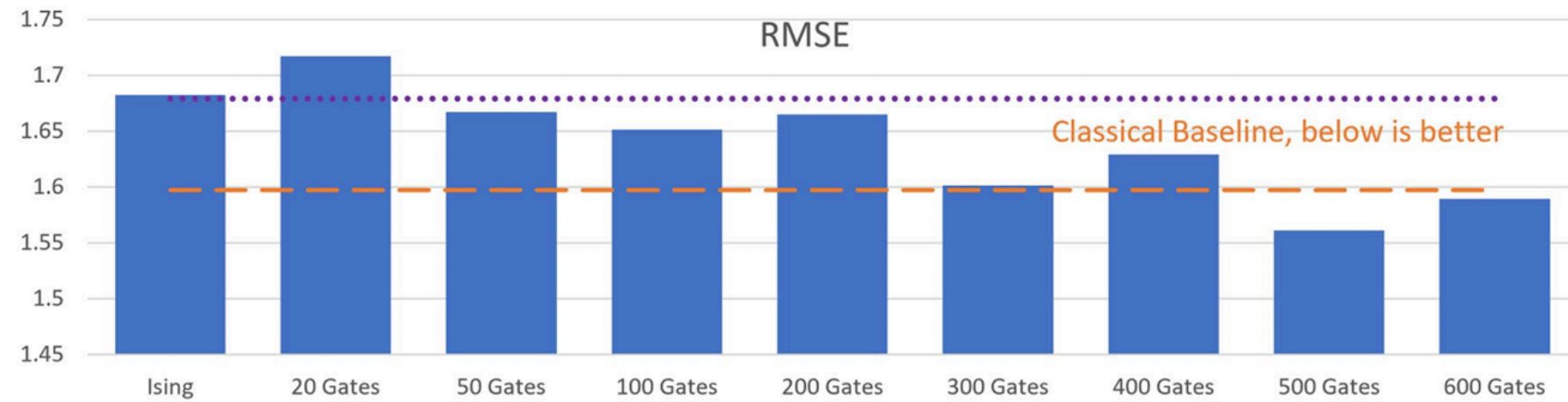
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DEMO

Quantum Advantage & Performance

Performance Metrics for Classical & Quantum Algorithms



QML is more Accurate as we Train More Data

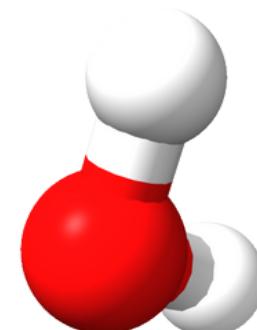
Why Our Advantage is Unique



We WIN either way: Leverage the best of classical and quantum as the race evolves



Scales with Quantum: Geometry optimization expands to more drug-like compounds as hardware improves



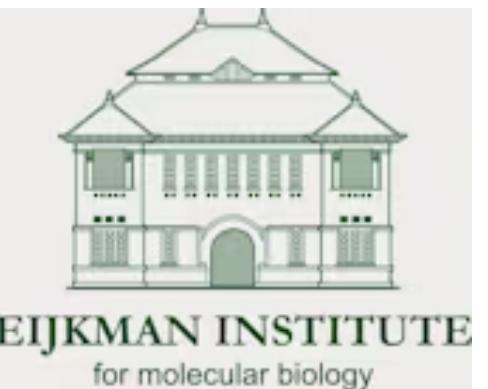
VQE Geometry Optimization is Limited



OUR ROADMAP

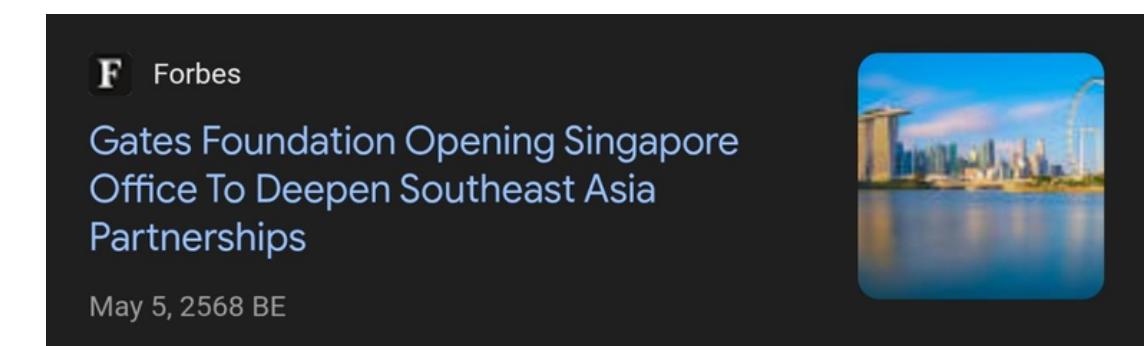
6 Months (Short-term Goals)

- Quantum-Refined 3D Conformer Library for Dengue Candidates.
- ADMET Profiling Integration
- Clinical Co-design with Dengue & Virology Research Institutes



Beyond 3 Years (Long-term)

- Closed-loop Feedback from Wet Lab Data to Improves Geometry Data
- Multi-Disease Expansion (Zika, Chikungunya, etc.)
- Drug Delivery Partnerships with WHO and the Gates Foundation to Poorer Regions



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OUR IMPACT



Speeds up dengue drug discovery



Address health inequities in lower-income populations.



Academia x Industry x NPO partnerships



Speeds up drug discovery dengue



OUR BUSINESS MODEL IS SIMPLE AND DEFENSIVE

Service	Rate	Description
Utility Compute Model	\$2.20 / second	Pay-as-you-go compute usage
Professional Services	\$150.00 / hour	Consulting, integration, and support hours

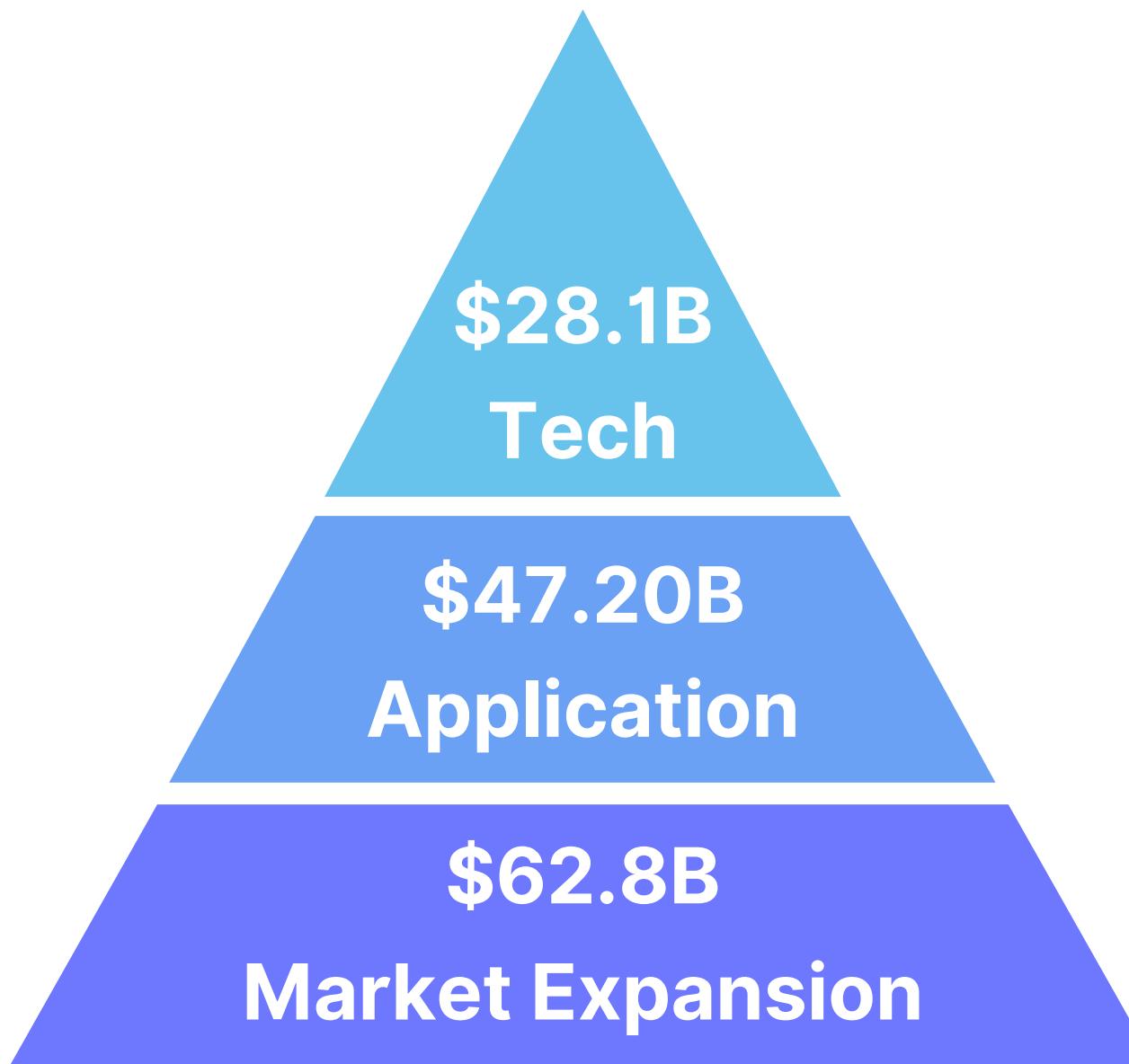
OUR MOAT

Service	Description
Scale Economies	More compounds optimized = smarter models and lower screening costs
Cornered Resource	Proprietary VQE-refined molecular data and Compute Model
Switching Cost	Clients rely on our Proprietary data and Compute Model
Counter-Positioning	Incumbents must cannibalize their own licensing business model to catch up



MARKET & OPPORTUNITY

Market Potential

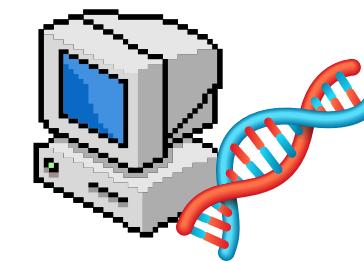


Competitor Analysis

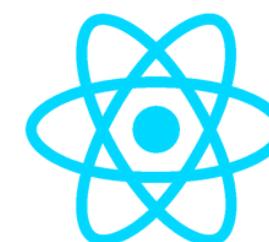
	 PHARMTOM LABS	 Schrödinger	 SwissDrugDesign	 AutoDock
Hybrid Quantum-Classical Simulation	✓	✗	✗	✗
3D Conformer Data	✓	✗	✗	✗
ADMET Integration	✓	✓	✗	✗
Cloud-Ready API	✓	✓	✗	✗
Pay-Per-Use	✓	✗	✗	✗



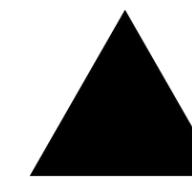
HACK INGREDIENTS



FRONT-END



React



Vercel



TypeScript

BACK-END



FastAPI



pythonTM

SOLUTION



Qiskit



qBraid

IBM Quantum

Variational Quantum
Eigensolver (VQE)

Quantum Neural
Network (QNN)





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**“WE BELIEVE NO PATIENT SHOULD
WAIT YEARS FOR A CURE”**



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THANK YOU!!!



