

REINFORCEMENT LEARNING FROM VERIFIABLE REWARDS IN CNS DRUG OPTIMIZATION

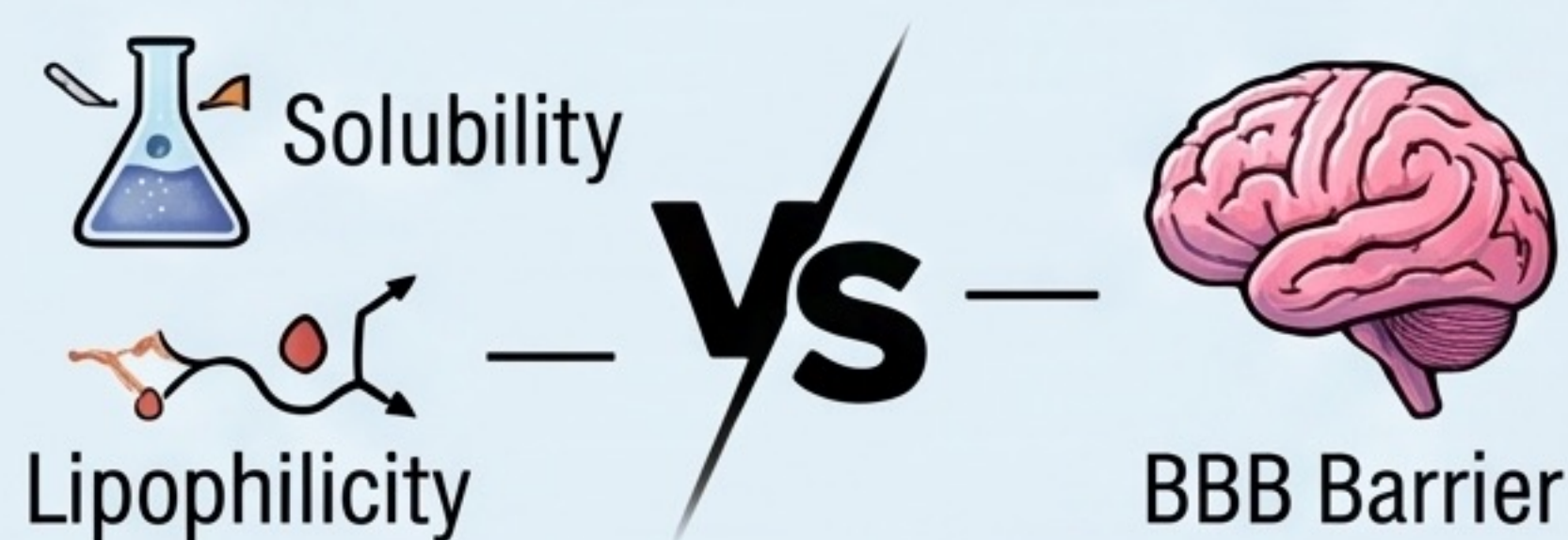
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KEY TAKEAWAY

Verifiable Physics-Based Rewards Enable True Autonomous Self-Improvement for Multi-Parameter CNS Drug Optimization.

INTRODUCTION

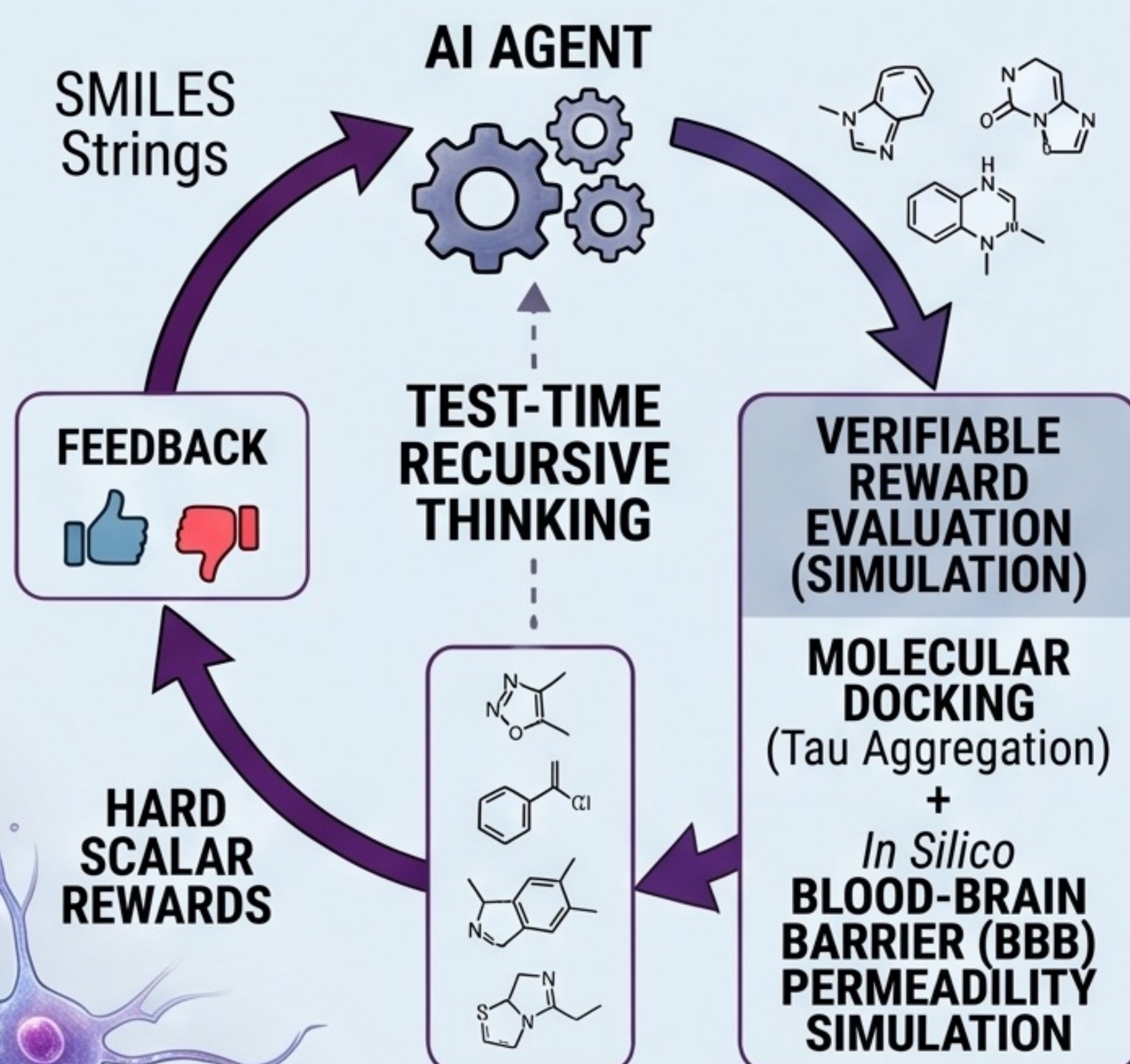
Designing Brain-Penetrant Therapeutics requires balancing multi-parameter constraints.



- Why current methods (like pure LLMs) fail pure LLMs fail without verifiable biological feedback forwards.

METHODS

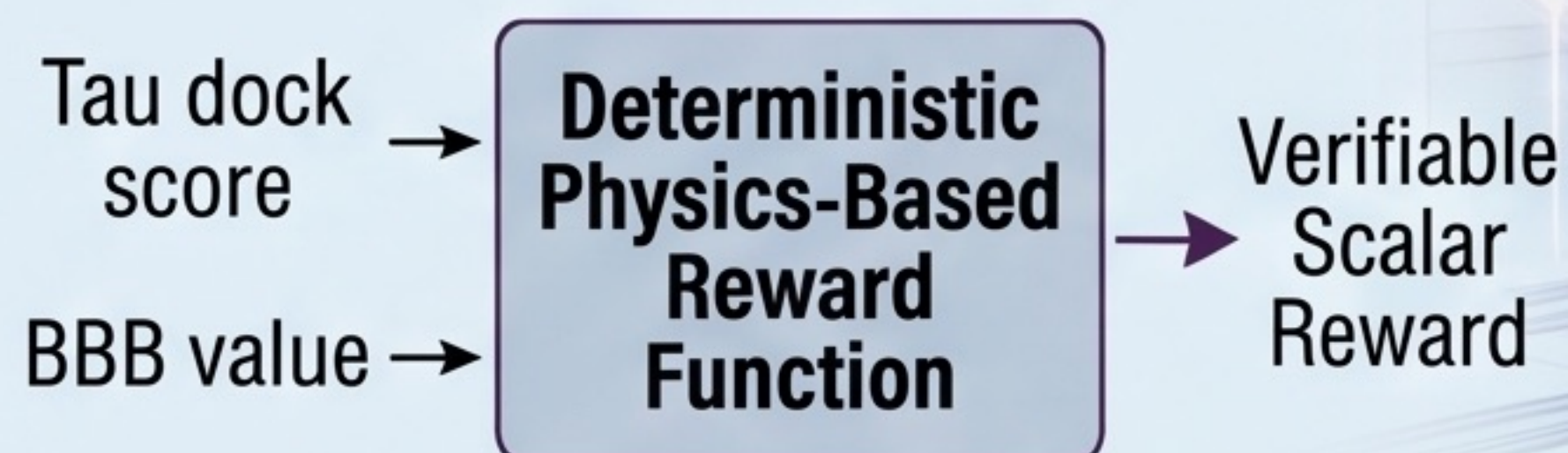
CLOSED-LOOP SYSTEM FOR TAU INHIBITORS



METHODS

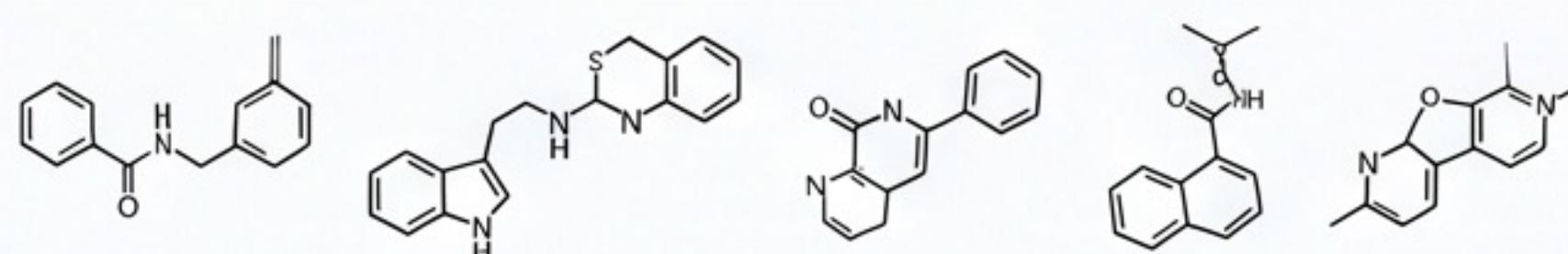
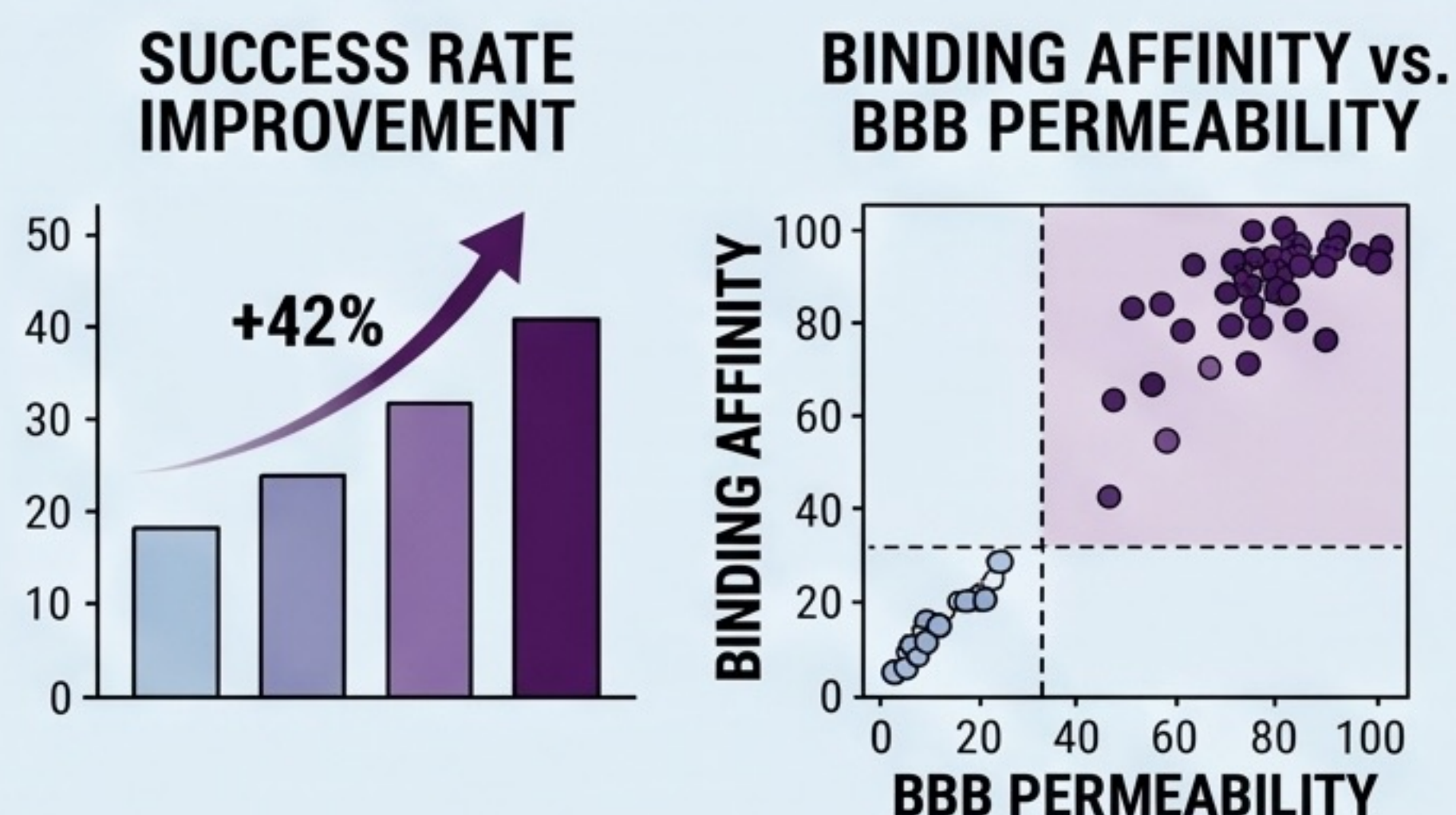
- **Primary Objectives:**
- Autonomous CNS optimization goals;
- Multi-target BBB crossing.
- **BBB crossing it multi-target, BBB crossing, and loneracy optional load BBB crossing.**

Reward Calculation Detail



- This is superior to human preference to hewand comos eealar to human preference.

RESULTS

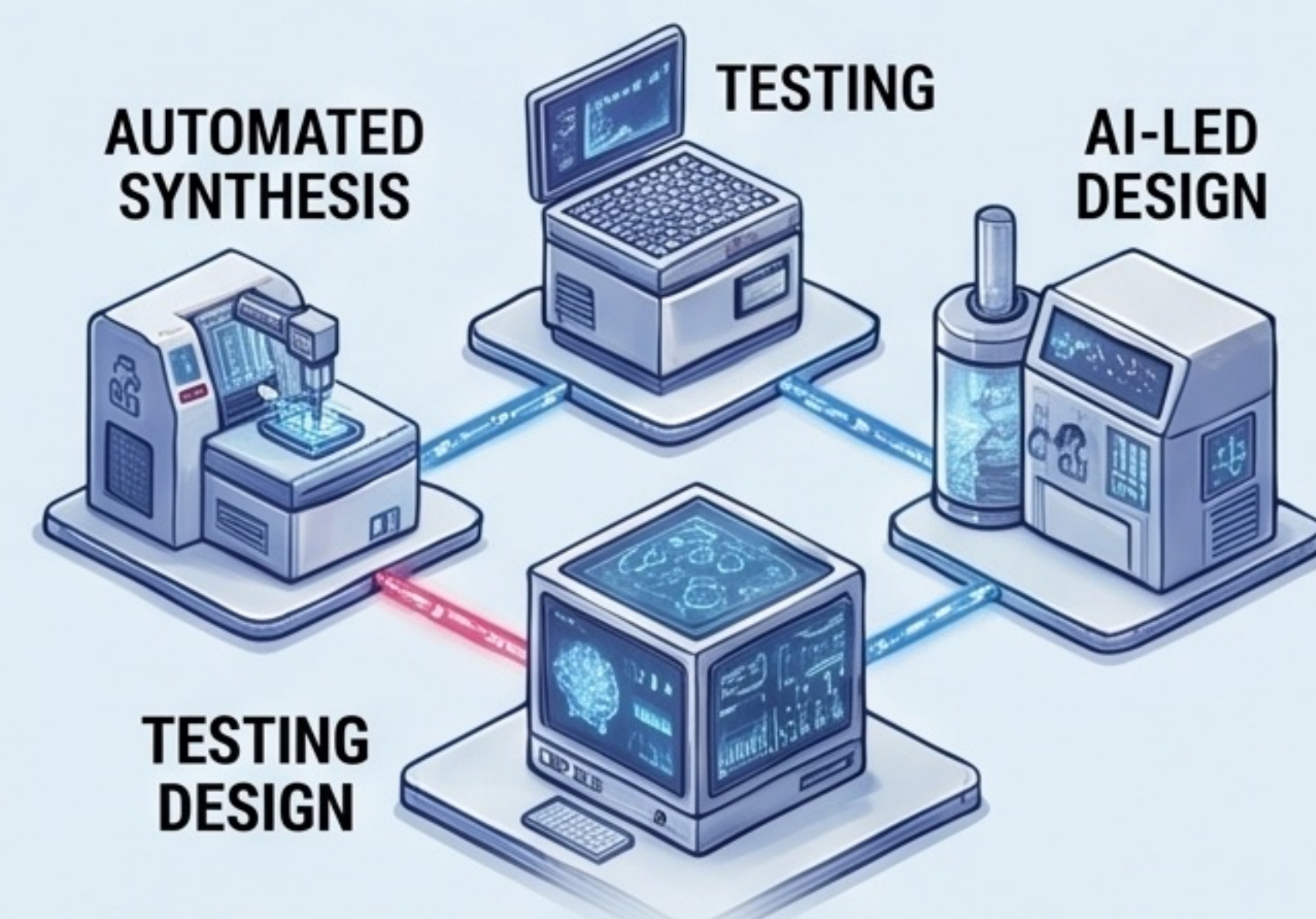


Rapid Autonomous Self-Improvement

Time

CONCLUSIONS

AUTONOMOUS SELF-DRIVING DRUG DISCOVERY PIPELINE



- **Significance:** Establishes a verifiable path towards faster, more effective Alzheimer's drug discovery.
- **Validates** physics-grounded AI learning as scalable for complex multi-objective optimization.
- **Future Directions:** Generalization to other target classes; Regulatory pathways for autonomous discovery frameworks.