Ainnocence SentinusAI® Demonstrates Consistent Superior Performance in Protein Design, Outperforming Competitors

SAN FRANCISCO, CA, UNITED STATES, July 17, 2025 /EINPresswire.com/ -- Ainnocence's SentinusAI® protein design platform continues to demonstrate superior performance compared to competitive platforms, maintaining consistent excellence since 2021 across both de novo protein design and affinity maturation applications. SentinusAI® designs and optimizes candidates based solely on the target sequence, delivering computational results within a week and optimized drug candidates within a month. Milestone success is typically achieved with wet-lab testing of just 50–150 protein molecules across 2-3 reinforcement learning iterations.

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>
> *Dr. Lurong Pan*

Recent comparative analysis reveals that Ainnocence's sequence-based model achieved an overall 50% success rate in wet lab validation of de novo design across multiple test cases. In affinity maturation applications, SentinusAI® delivered an exceptional 85.7% success rate across 42 projects, achieving affinity improvements from dozens to thousands fold with potencies up to double-digit picomolar levels.

"These results underscore the fundamental advantages of our pioneering sequence-based approach to protein design," said Lurong Pan, CEO at Ainnocence. "While competitors struggle with heavy computational cost and complex 3D modeling process, our platform consistently delivers success rates that make commercial functional protein design viable."

Key Performance Highlights:

De Novo Design Excellence:
- 9.8% hit rate at round 1 zero-shot prediction demonstrate reliable platform performance
- 35 % hit rate at round 2 iteration project achieving effective reinforcement learning performance
- 50% overall success rate in de novo design over novel targets without structure information.

Affinity Maturation Leadership:

- Industry-leading 85.7% success rate across 42 projects at round 1 zero-shot prediction
- 21.5% hit rate at round 1 zero-shot prediction substantially reduce the number wet lab lab test
- Strong round 2 iteration performance with 43.8% hit rate
- Achieves affinity improvements from dozens to thousands fold increase
- Delivers potencies reaching picomolar levels

Computational Efficiency: The SentinusAI® platform achieves these superior results while reducing computational costs by 10,000x compared to traditional 3D-based modeling approaches, making protein design accessible and economically viable for a broader range of applications and without dependence on 3D structure resolution.

Competitive Landscape Analysis
Recent market entrants have struggled to achieve comparable performance metrics. While some competitors report qualitative improvements like being "actively refining" or achieving "single-digit nanomolar" results, Ainnocence's platform delivers quantifiable, reproducible success rates since 2021 that translate directly to commercial viability.

About SentinusAI®
SentinusAI® represents a breakthrough in protein design technology, leveraging advanced sequence-based modeling to predict protein functions with unprecedented accuracy. The platform's unique approach eliminates the computational bottlenecks of traditional 3D modeling while delivering superior wet lab success rates. Since 2021, SentinusAI® has maintained consistent performance across diverse protein design challenges, establishing Ainnocence as the industry standard in practical, commercially viable protein design solutions.

About Ainnocence
Ainnocence is a leading biotechnology company focused on advancing drug design through innovative computational approaches. The company's SentinusAI® platform enables rapid, cost-effective development of novel proteins for therapeutic and industrial applications.

For more information about Ainnocence and the SentinusAI platform, visit www.ainnocence.com or contact info@ainnocence.com.

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