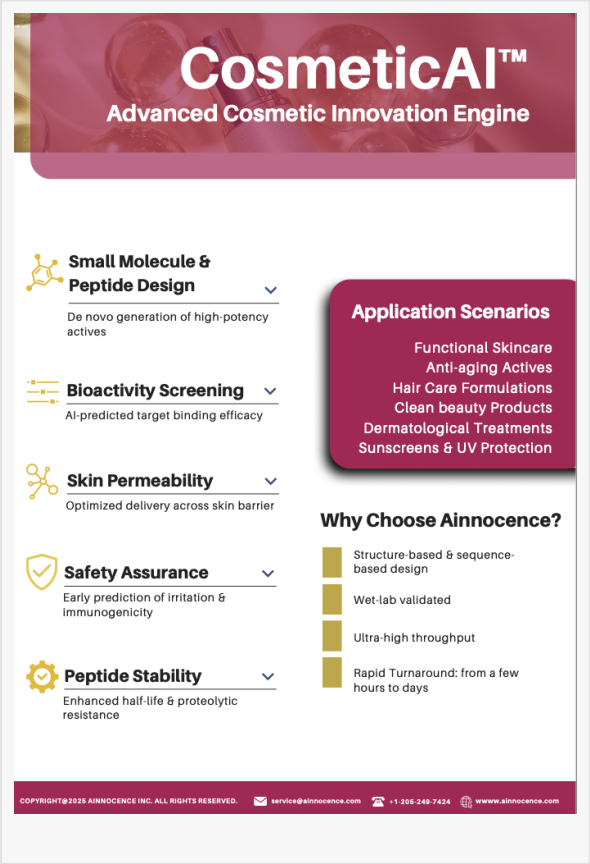
Beauty Engineered: Ainnocence Launches CosmeticAI™ to Accelerate AI-Driven Innovation in Skincare and Beauty Products

SAN FRANSICO, CA, UNITED STATES, January 1, 2026 /EINPresswire.com/ -- Ainnocence, a next-generation AI-driven biotechnology company, announces the CosmeticAI™, a sequence-first molecular design platform developed to engineer cosmetic and dermatological active ingredients with biologics-grade precision.



CosmeticAI™ extends Ainnocence's proprietary in-silico engineering framework originally built for small molecules and formulation design into a dedicated peptide and small-molecule design engine coupled with a formulation-aware optimization layer. The platform enables large-scale virtual generation and optimization of candidate molecules directly from target sequences, allowing controlled exploration of molecule space prior to experimental validation.

"Our goal with CosmeticAI™ was to make cosmetic ingredient development predictable rather than exploratory," said Lurong Pan, PhD, Founder and CEO of Ainnocence. "By defining performance, safety margins and formulation feasibility at the design stage, we could shift uncertainty out of the lab and into computation, where it can be systematically resolved."

From Screening to Sequence-First Molecular Design

Traditional cosmetic ingredient discovery relies on predefined chemical libraries, reformulation of known compounds, and screening with limited control over diversity. These approaches constrain novelty and require extensive wet-lab iteration to balance efficacy, stability, and safety.

CosmeticAI™ shifts early-stage discovery from experimental screening to in silico design. For a given target, the platform generates large populations of candidate molecules and evaluates them using learned relationships between molecular sequence, structure, and function. This

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> *Dr. Lurong Pan, CEO of Ainnocence*

enables systematic exploration of molecular space beyond what is feasible with physical libraries, while maintaining explicit control over design objectives.

Multi-Objective Optimization Under Cosmetic Constraints

Cosmetic ingredient development requires simultaneous optimization across multiple, often competing constraints, including local biological activity, epidermal transport, formulation stability, and a narrow margin for irritation and immunogenicity.

CosmeticAI™ integrates these constraints directly into its generative and optimization process. Candidate molecules are evaluated in silico for predicted target engagement, physicochemical properties relevant to skin exposure, resistance to degradation, and early safety-related risk signals. Optimization occurs iteratively at the computational level, resolving trade-offs before laboratory testing begins.

Computational Front-Loading of Experimental Selection

By applying selection pressure upstream, CosmeticAI™ substantially reduces reliance on broad experimental screening. Typical projects progress through three iterative design–test cycles, with experimental validation of approximately 50–150 candidates in total.

This approach preserves diversity while reducing development time, cost, and experimental burden. Optimized candidates are delivered at a stage appropriate for formulation testing rather than early exploratory discovery.

Extending Biologics-Grade Engineering to Cosmetic Molecules

CosmeticAI™ is built on the same core architecture Ainnocence uses for small molecules and Formulation engineering, including deep generative modeling, structure-aware evaluation and multi-objective optimization. This allows cosmetic ingredients to be engineered with a level of precision traditionally reserved for therapeutic biologics.

The platform supports both rational modification of known molecular classes and fully de novo designs, enabling exploration beyond incremental analog-based optimization.

Collaborate with Ainnocence

Ainnocence is open to collaboration with cosmetic brands, R&D organizations and research partners interested in applying sequence-first molecular design to next-generation cosmetic and dermatology-adjacent ingredients.

For collaboration details, contact service@ainnocence.com or visit www.ainnocence.com.

About Ainnocence

Founded in 2021 and headquartered in California, Ainnocence is a next-generation biotechnology company transforming drug discovery and synthetic biology through AI-based, sequence-first engineering. The company's self-evolving platform evaluates up to 10 billion molecules spanning proteins, antibodies, small molecules, nucleic acids and chemical formulations within hours to weeks, enabling rapid, multi-objective therapeutic design. By reducing R&D timelines and costs while increasing success rates, Ainnocence empowers industry and academic partners to pursue bold innovations across medicine, sustainability and biotechnology.

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