Alchemy 21/12 Announces Patent-Pending AHK-Cu Scalp Technology

Alchemy 21/12 files for patent protection on an AHK-Cu scalp formulation architecture bridging advanced chemistry with the body's own signaling systems.

THOUSAND OAKS, CA, UNITED STATES, September 29, 2026 /EINPresswire.com/ -- FOR IMMEDIATE RELEASE

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>
> *Jen Valenti, Founder & Formulator, Alchemy 21/12*

Alchemy 21/12 Announces Patent-Pending AHK-Cu Scalp Technology

Independent skincare company files U.S. provisional patent application covering a controlled ligand architecture for AHK-Cu topical scalp compositions

September 26, 2026 – Alchemy 21/12 today announced that its AHK-Cu hair and scalp technology is officially patent-pending following the filing of U.S. Provisional Patent Application No. 64/163,219 with the United States Patent and Trademark Office.

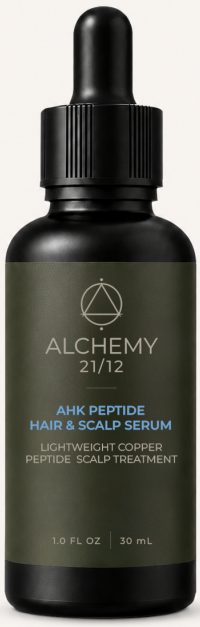
The application, titled "Topical Scalp Compositions Comprising an Alanyl-Histidyl-Lysine Copper Complex and Free Histidine at Controlled Ligand Ratios," covers a formulation architecture centered on AHK-Cu, also known as Copper Tripeptide-3, with separately supplied free histidine at controlled ligand ratios and defined formulation conditions for topical application to the scalp and hair-bearing skin.

For Alchemy 21/12 Founder Jen Valenti, the filing reflects a broader approach to formulation: combining advances in chemistry with the signaling systems that already exist within human biology.

"Some of the most interesting opportunities in formulation come from understanding how chemistry can work with biology rather than simply trying to overpower it," said Valenti. "I am fascinated by the intersection between what we can engineer in a formula and the receptors, signaling pathways, and cellular communication systems the body already uses. That is where I believe a great deal of the next generation of skincare and scalp science will come from."

That philosophy has increasingly shaped Alchemy 21/12's research and development work. Rather than treating peptides and other bioactive ingredients as isolated additions to a cosmetic formula, the company evaluates how molecular environment, supporting ligands, stability, concentration, delivery, and surrounding formulation conditions may influence their behavior.

The patent-pending technology grew from development work surrounding Alchemy 21/12 AHK Peptide Hair + Scalp Serum, a topical scalp formulation built around AHK-Cu and a complementary peptide system. The serum was developed as a non-drug approach to scalp care, with an emphasis on creating an environment that supports the biological processes associated with healthy-looking hair and scalp function.



Alchemy 21/12 AHK Peptide Hair + Scalp Serum, developed around the company's patent-pending AHK-Cu formulation architecture for topical scalp application.

AHK-Cu is a naturally derived copper-binding tripeptide that has been studied for its relationship to cellular signaling and processes relevant to hair and skin biology. Alchemy 21/12's patent application focuses not simply on the presence of AHK-Cu, but on the chemical environment surrounding the copper-peptide complex and the controlled use of free histidine within that architecture.

"This is exactly why I built Alchemy 21/12," Valenti said. "We are not interested in simply adding a trending ingredient to a formula and putting its name on the front of a bottle. I want to understand the chemistry, question the assumptions around how these materials are being used, and then build around the biology we are ultimately trying to communicate with."

The filing marks the first patent application for Alchemy 21/12 and expands the company's growing research focus on peptide signaling, copper-peptide chemistry and biologically informed formulation design.

About Alchemy 21/12
Alchemy 21/12 is an independent, science-led skincare and scalp-care company founded by Jen Valenti. The company develops barrier-first, retinoid-free formulations that combine modern cosmetic chemistry with research into peptide signaling, skin biology, cellular communication, and formulation architecture.

Patent Pending | U.S. Provisional Patent Application No. 64/163,219

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