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AC Blue'Nette Toner

COMPLEX ACTIVES



VEGAN



COSMOS



EX VIVO



CHINA



ISO 16128



PASSPORT



THE FEATURES.

By acting as a toner, blue pigments used in shampoos and other hair products preserve and restore hair's cool, salon-quality color. Bleached or permanently colored brunette hair can sometimes reveal unwanted orange undertones after lightening. To counteract these tones and achieve a cooler, more natural look, blue-pigmented toners have become a go-to solution. The porosity of hair can be increased by lightening, which increases the hair's vulnerability to color-altering agents and damage. This can give bleached brunette hair an orange or copper color. With AC Blue'Nette Toner, hair can have a tone or brightening effect similar to that of traditionally used synthetic dyes, but with the added benefit of being a natural and pigment-free substitute, meeting customer's demand for naturally derived products.

*Clitoria Ternatea Flower Extract & Lactobacillus Ferment
Lysate & Pisum Sativum (Pea) Starch*

Actions

Anti-Orange
Hydrating
Color Protection
Anti-Frizz

TECHNICAL DATA SHEET.

AC Blue'Nette Toner



THE REGULATION.

INCI. Clitoria Ternatea Flower Extract & Lactobacillus Ferment Lysate & Pisum Sativum (Pea) Starch
CAS. 999999-99-4 & 68333-16-4 (or) 92128-79-5 & 90082-41-0
EINECS. 310-127-6 & N/A (or) 295-777-8 & 290-130-6
EUROPE. Compliant
USA. Compliant
CHINA. Compliant

THE SPECIFICATION.

Origin. Botanical
Natural Antimicrobial. Lactobacillus Ferment Lysate
Preservatives. None
Solvents Used. Water
Soluble/Miscible. Water Soluble
Appearance. Clear to Slightly Hazy Liquid Light to Dark Blue
Use Level. 1 - 20 %



THE STORY.

Brown hair is characterized by higher concentrations of eumelanin and pheomelanin, with more eumelanin than blonde hair but less than black. Blonde ladies and brunettes are sometimes depicted as being in a rivalry or competition in popular culture. With both global hair color market and hair lightening projected to experience significant growth^{1,2}, we are assisting with the potential of developing hair care products related to the color maintenance. Meeting the current desired of consumers seeking natural alternatives in hair color maintenance was the starting point that led us to the development of a hair toner for brown hair. Professional and at-home treatments with color protection properties are essential for cool-tone highlights or cool-tone brown hair to shield against unwanted tones like orange. During the bleaching process, hydrogen peroxide, which is frequently used in hair-lightening treatments, chemically combines with melanin to produce oxidation and remove natural hair color. Eumelanin is easily broken down by peroxide, giving light blonde hues; pheomelanin, on the other hand, is more difficult to break down, giving shades of orange that frequently appear after lightening. If you choose ashy or cool-toned hair colors over warm-toned ones, copper appearance can be really undesirable. A blue shampoo or blue-based hair treatment is the solution to prevent this unwanted effect. Because blue is the color that contrasts with orange on the color wheel, this aids in counterbalancing copper tones in brown hair. The most used blue pigments used in anti-orange treatments have synthetic origin. Consumer demand is driving the use of natural colors including chlorophyll, carotenoids, anthocyanins, and flavonoids instead of synthetic dyes. These natural colorants have therapeutic qualities, including antioxidant and anti-inflammatory effects, and can also improve human health³.

THE SCIENCE.

Active Concepts' aim is to improve the industry by integrating research and innovation from other sectors. Biodegradable plastics made from food or biomass resources like starch are being explored as a solution to reduce the environmental impact of petrochemical plastics. However, commercial success requires bioplastics to have adequate physical properties.⁴ Starch cross-linking is a technique commonly used in polysaccharide chemistry to enhance the performance of polysaccharide-based materials, resulting in bioplastics like natural films for the food industry. Cross-linking involves forming tridimensional networks of polymer chains, which have numerous applications across various industries. The challenge is to advance greener cross-linking techniques while reducing costs. Plant-derived phenolic compounds, such as tannic acid, ferulic acid, and gallic acid, can be used as crosslinkers for protein and polysaccharide polymers.⁵ The antioxidant properties of these compounds could bring additional benefits in cosmetics or medical applications. Our objective was to explore cross-linking technology using secondary metabolites in combination with pea starch, while also producing natural blue color as outcome. This approach is based on previous studies indicating that plant-derived secondary metabolites can play a role in cross-linking reactions and generating pigments suitable for use in a range of various industries. The butterfly pea flower is a vine found in tropical and subtropical regions. It is used in traditional medicine for treating illnesses and enhancing body functions. The blue color, coming from anthocyanin, has health benefits and is used in blue tea, gin, and liquors. Triterpenoids in butterfly pea flowers have been extensively studied for potential use in treating diseases like Alzheimer's, as they act as anti-tumor, anti-microbial, and anti-inflammatory agents.⁶

THE BENEFITS.

Hair

Hair toning Brunette Hair Toning Assay



Color fade prevention Color Protection Microscopy Imaging



Hydrating Hair Hydration via Gravimetric Analysis



Anti-frizz Humidity Protection Analysis



THE EFFICACY.

Brunette Hair Toning Assay.

A qualitative and quantitative assay was performed to determine the *ex vivo* color toning ability of AC Blue'Nette Toner on virgin hair tresses. Tresses were imaged before and after treatment with test materials and analyzed for color shifts.



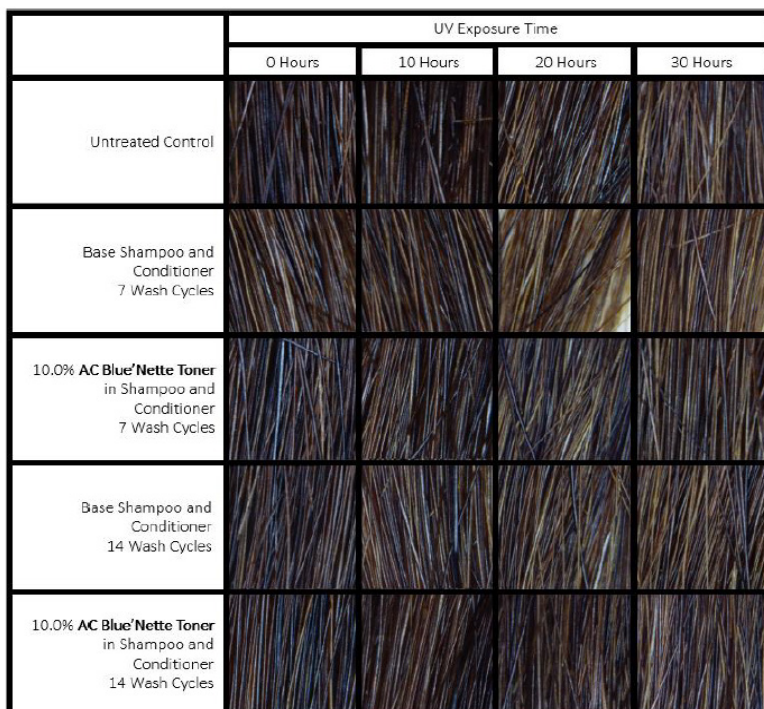
AC Blue'Nette Toner visibly extrudes orange tones from brunette hair
 (-27% tested at 2%)

Toning effect.

Camouflage orange shades & More vibrant and cool color

Color Protection - Microscopy Imaging.

An *ex vivo* Color Protection Assay was performed to determine qualitative and quantitative color fade benefits of AC Blue'Nette Toner on hair. Brunette human hair tresses were dyed red as this shade shows the greatest level of color change from wash-out and UV irradiation. Tresses were treated with test materials for a determined number of wash cycles followed by UV exposure.



The tresses treated with AC Blue'Nette Toner provided anti-fade benefits.
 (tested at 10%)

Less color fade.

Color protection & Brighter dyed hair

Hair Hydration via Gravimetric Analysis.

Human hair tresses were tested to understand the moisturizing capability of a cosmetic product. Tresses are weighed before and after application of the testing materials then subjected to heat treatment for a set period of time to allow for potential evaporation of the products. After heat treatment tresses are reweighed and moisture loss is calculated for each tress.

	Untreated Control	DI water	2.0% AC Blue'Nette Toner	5.0% AC Blue'Nette Toner
Initial Mass	0.979	0.983	1.042	1.173
Initial Mass + Test Product	0.979	1.910	1.995	2.172
Final Mass	0.895	0.935	1.053	1.201
% Moisture	-8.6%	-4.9%	1.1%*	2.4%*

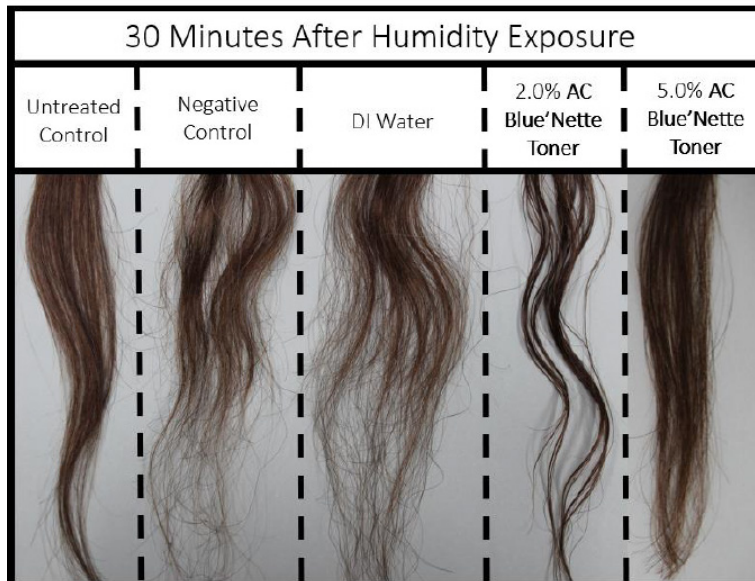
Bleach blonde hair tresses increase in moisture
(+2,4% at 5%)

Moisture Retention.

Protective properties & Moisturizing activity

Humidity Protection Analysis.

A qualitative study was performed to determine the humidity protecting ability of AC Blue'Nette Toner in hair tresses.



Tresses appeared smooth and shiny
(tested at 2% and 5%)

Reduced frizz.

Smooths hair tresses & Humidity protecting ability

References:

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