

PRODUCT, DESCRIPTION AND EVIDENCE

REFERENCE: FS8-18-1

PUBLISH DATE: 23/08/2023

ZAP

BLEMISH CONTROL PEN

A meticulously crafted targeted gel formula to harness the potency of scientifically proven ingredients, including salicylic acid, myristoyl Hexapeptide-23, glycolic acid, phytic acid, lactic acid, mandelic acid, witch hazel, chamomile, and a blend of nourishing fruit extracts. Salicylic acid dives deep into pores, swiftly unclogging them, and targeting blemishes effectively to reduce inflammation and redness. Myristoyl hexapeptide-23, a cutting-edge peptide, stimulates collagen synthesis, promoting skin repair and reducing the appearance of blemishes and scarring. Our blend of exfoliating powerhouses, glycolic, phytic, lactic, and mandelic acids, work in harmony to gently remove dead skin cells, eliminating blemish-triggering impurities and refining skin texture. Infused with witch hazel and chamomile, this pen soothes and calms irritated skin, alleviating discomfort and redness associated with problematic skin. Meanwhile, a selection of potent fruit extracts delivers a burst of antioxidants, combating free radicals and supporting overall skin health. Help prevent stubborn blemishes and embrace a luminous and smooth complexion with Zap (Blemish Control Pen). Compact, portable, and easy to use, it's the ultimate weapon in your fight for clear skin, empowering you to face each day with renewed confidence and radiant skin, on the spot.

KEY BENEFITS

- Reduces the appearance of blemished skin
- Regulates sebum production
- Promotes even skin tone
- Helps control excess oil production
- Helps to unclog pores
- Promotes cell turnover
- Stimulates the production of collagen to improve skin firmness and elasticity
- Improves overall skin tone

DIRECTIONS FOR USE

Apply one pen tip size amount to each area of concern and allow to absorb.

WARNINGS

For external use only. An SPF 50+ must be worn whilst using this product. If excessive drying occurs discontinue use for a few days, then continue use. Avoid contact with eyes. If this occurs wash affected area thoroughly with water. If irritation occurs, discontinue use. Store this product below 40°C.

INGREDIENTS

Aqua, Glycerin, Glycolic Acid, Cellulose Gum, Hamamelis Virginiana Water, Vaccinium Myrtillus Fruit Extract, Cocamidopropyl Dimethylamine, Sodium Lactate, Mandelic Acid, Phytic Acid, Lactic Acid, Salicylic Acid, Saccharum Officinarum Extract, Sodium Gluconate, Alcohol, Sodium Benzoate, Inulin, Xanthan Gum, Citrus Aurantium Dulcis Fruit Extract, Citrus Limon Fruit Extract, Anthemis Nobilis Flower Water, Acer Saccharum Extract, Sodium Hyaluronate, Myristoyl Hexapeptide-23, Cellulose, Fructose, Glucose, Potassium Sorbate, Phenoxyethanol, Didecyldimonium Chloride.

ACTIVE INGREDIENTS

Salicylic Acid 0.8%

Myristoyl Hexapeptide-23 100mg*

Glycolic Acid 2.8%
 Phytic Acid 1%
 Lactic Acid 0.88%
 Mandelic Acid 1%
 Vaccinium Myrtillus Fruit Extract (Bilberry Extract) 1.4%
 Saccharum Officinarum (Sugar Cane) Extract 0.6%
 Citrus Aurantium Dulcis (Orange) Fruit Extract 2000mg*
 Citrus Limon (Lemon) Fruit Extract 2000mg*
 Acer Saccharum (Sugar Maple) Extract 750mg*
 Hamamelis Virginiana Water (Witch Hazel) 2%
 Anthemis Nobilis Flower Water (Chamomile) 1000mg*
 Sodium Hyaluronate 300mg*
 Glycerin 3%

SALICYLIC ACID

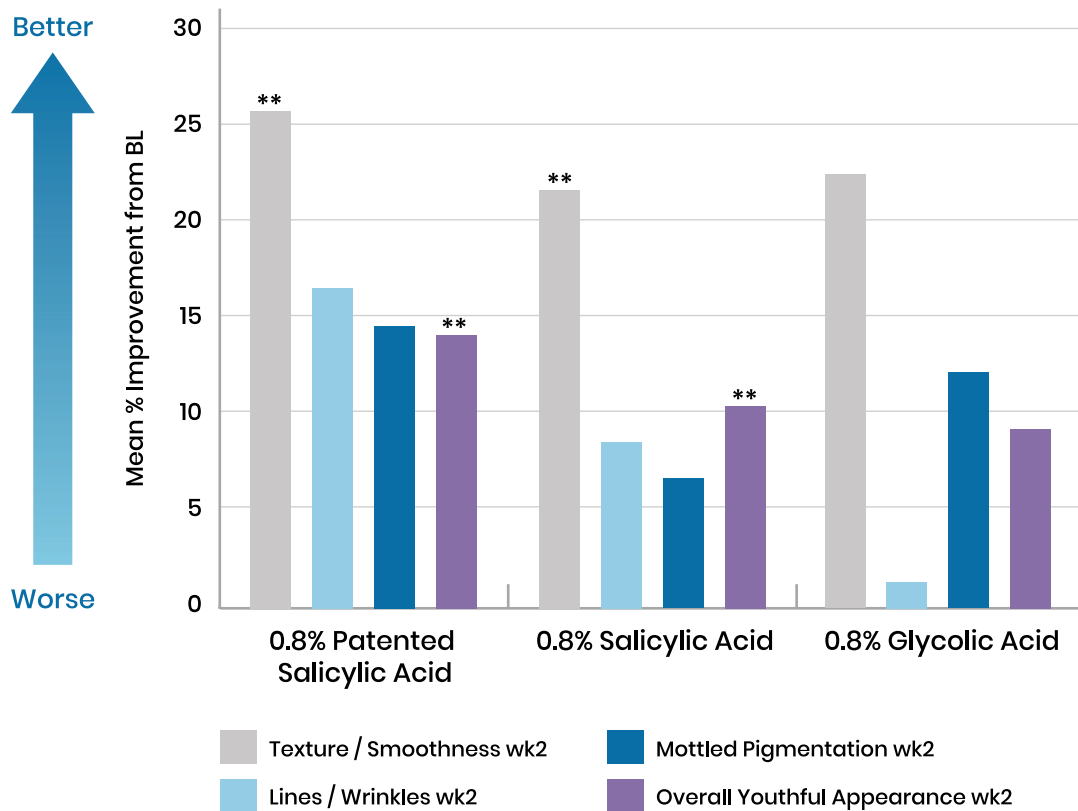
Ingredient Claims

Gently exfoliates the skin to remove old skin cells	Skin appears brighter and smoother
Regulates sebum production	Helps to unclog pores
Improves skin texture	Improves skin barrier function
Promotes collagen synthesis	Improves overall skin tone
Promotes cell turnover	Skin brightening effects

Salicylic Acid is a type of beta hydroxy acid extracted from willow bark. Salicylic Acid is used in skincare products for the following benefits:

- Exfoliation:** As salicylic acid is a beta-hydroxy acid (BHA), it can penetrate the pores and exfoliate the skin. It works as a keratolytic by exfoliating the skin, causing the cells of the epidermis to shed more readily, preventing pores from clogging up, and allowing room for cell growth. It is considered especially effective because of its ability to penetrate the follicle, clearing the pores of debris at a deeper level and reducing blockage. It works by loosening and breaking down dead skin cells, helping to unclog pores. This exfoliating action promotes a smoother and clearer complexion.
- Acne treatment:** Salicylic acid is particularly effective in treating acne-prone skin. It helps to reduce acne by unclogging pores, reducing inflammation, and preventing the build-up of excess oil. It also has antibacterial properties that can help combat the bacteria associated with acne.
- Oil control:** Salicylic acid can regulate oil production in the skin. By reducing the production of excess sebum, it can help mattify the skin and minimise the appearance of oily skin.
- Anti-inflammatory properties:** Salicylic acid is considered to have aspirin-like, anti-inflammatory properties, which can help soothe and calm irritated or inflamed skin. It can be beneficial for conditions such as acne, rosacea, and general skin redness.
- Skin texture improvement:** The exfoliating action of salicylic acid helps to smooth out the skin's texture, reducing the appearance of roughness and unevenness. It can also help to minimise the appearance of enlarged pores. Salicylic acid can also improve skin thickness, barrier functions, and collagen production.
- Brightening and even skin tone:** Regular use of salicylic acid can help to fade dark spots, hyperpigmentation, and post-inflammatory hyperpigmentation (PIH). By promoting exfoliation and cell turnover, it can contribute to a more even skin tone and a brighter complexion.

Clinical study of 5 female subjects per group between the ages of 35-59. Each product was applied 2x/day for 2 weeks. Visual assessments of the face using a 10cm VAS scale were performed by an expert grader at Baseline and Week 2. Evaluations included Texture/Smoothness, Mottled Pigmentation, Lines/Wrinkles and Overall Youthful Appearance. The grader was blinded to product assignment.



Links:

- <https://pubmed.ncbi.nlm.nih.gov/1535287/>
- <https://pubmed.ncbi.nlm.nih.gov/30173582/>
- <https://pubmed.ncbi.nlm.nih.gov/34480884/>

MYRISTOYL HEXAPEPTIDE-23

Ingredient Claims:

Effective against blemished skin	Minimises the prevalence of blemish-causing bacteria
Regulates sebum production	Reduces the appearance of pores
Promotes even skin tone	Reduces skin inflammation

Myristoyl Hexapeptide-23 is a synthetic peptide linked to a fatty acid chain. The fatty acid chain aids in absorption of the peptide into the skin. Myristoyl Hexapeptide-23 is highly effective against blemished, problematic skin. *P. acnes* is the most commonly associated bacterium with acne.

P. acnes bacteria live deep within follicles and pores, away from the surface of the skin. In these follicles, *P. acnes* bacteria use sebum, cellular debris and metabolic byproducts from the surrounding skin tissue as their primary sources of energy and nutrients. Elevated production of sebum by hyperactive sebaceous glands (sebaceous hyperplasia) or blockage of the follicle can cause *P. acnes* bacteria to grow and multiply. *P. acnes* bacteria secrete many proteins, including several digestive enzymes. These enzymes are involved in the digestion of sebum and the acquisition of other nutrients. They can also destabilize the layers of cells that form the walls of the follicle. The cellular damage, metabolic byproducts and bacterial debris produced by the rapid growth of *P. acnes* in follicles can trigger inflammation. This inflammation can lead to the symptoms associated with some common skin disorders, such as folliculitis and acne vulgaris. Myristoyl Hexapeptide-23 has broad spectrum antimicrobial, especially on *P. acnes*.

Like with a lot of peptides, Myristoyl Hexapeptide-23 can also promote collagen formation to reduce the signs of ageing. In addition, Myristoyl Hexapeptide-23 helps to improve skin texture and minimises the appearance of pores.

Links:

<https://pubmed.ncbi.nlm.nih.gov/36301760/>

<https://onlinelibrary.wiley.com/doi/full/10.1111/j.1473-2165.2009.00416.x>

GLYCOLIC ACID

Ingredient Claims:

Gently exfoliates dead skin cells	Unclogs pores to help reduce their size
Improves skin texture	Strengthens the skin barrier
Reduces the appearance of blemishes	

Glycolic Acid occurs naturally in sugar cane and has the best track record of all the Alpha Hydroxy Acids. Glycolic Acid is an alpha hydroxy acid (AHA) which has an effect on the epidermis by dissolving the bonds of thickened dead skin cells on the surface of the skin causing exfoliation of the upper surface to reveal newer hydrated healthy skin. AHAs have also been shown to affect the deeper layers of the skin by increasing the gel matrix and creating plumper looking skin, they also reduce pore size and fine lines and wrinkles and can have an effect on reducing the signs of acne prone skin.

It also has significant effects on the process of keratinisation and stratum corneum exfoliation and has demonstrated anti-ageing benefits by increasing synthesis of dermal matrix components including collagen and glycosaminoglycans (e.g., Hyaluronic Acid). Additional beneficial effects on skin include antioxidant effects, skin barrier strengthening and MMP inhibition. It is the most researched AHA and studies show that glycolic acid, demonstrates the most impressive results for all ages and skin types. Glycolic Acid is special because of its small molecule size which enables it to easily penetrate through the top layers of skin and reveal healthier-looking skin.

Glycolic Acid also can hydrate skin and to 'teach' skin to retain its natural moisture. When used in concentrations of 5% and upwards, Glycolic Acid can also improve firmness and resilience while lessening other signs of sun damage. Glycolic Acid has also been shown to show an effect on cell proliferation, thus thickening and strengthening the feel and appearance of the skin.

Studies demonstrated that topical glycolic acid provides a photoprotective effect to Pre-treated skin yielding an SPF of

approximately 2.4. In addition, when Glycolic Acid is applied to irradiated skin, it accelerates resolution of erythema. The data obtained from both studies support the hypothesis that glycolic acid acts as an antioxidant.

Links:

- <https://www.ncbi.nlm.nih.gov/pubmed/8634805>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6017965/>
- <https://www.ncbi.nlm.nih.gov/pubmed/9563274>
- <https://www.ncbi.nlm.nih.gov/pubmed/26032934>

LACTIC ACID

Ingredient Claims:

Improves skin texture	Improves hydration levels in the skin
Reduces the appearance of fine lines and wrinkles	Stimulates the production of collagen to improve skin firmness and elasticity
Balances the skin's pH to help reduce inflammation and irritation	Helps to improve overall skin health

Lactic acid is an alpha-hydroxy acid (AHA) found naturally in dairy products as well as certain fruits and vegetables. Lactic Acid is a skincare ingredient that quickly delivers numerous benefits such as:

- **Exfoliation:** Lactic Acid works by breaking down and removing dead skin cells from the surface of the skin. This helps to improve skin texture, reduce the appearance of fine lines and wrinkles, and unclog pores, which can help to prevent acne breakouts.
- **Hydration:** Lactic Acid is a humectant, which means it helps to attract and retain moisture in the skin. This can help to improve the skin's hydration levels and reduce dryness and flakiness.
- **Brightening:** Lactic Acid can help to brighten the skin by reducing the appearance of hyperpigmentation, such as age spots or sun damage. It works by inhibiting the production of melanin, the pigment that gives skin its colour.
- **Stimulates collagen production:** Lactic Acid can stimulate collagen production in the skin, which helps to improve skin elasticity and firmness. This can help to reduce the appearance of fine lines and wrinkles.
- **pH balance:** Lactic Acid can help to balance the skin's pH level, which is important for maintaining healthy skin. A balanced pH level can help to reduce inflammation and irritation and improve overall skin health.

Links:

- <https://pubmed.ncbi.nlm.nih.gov/30270529/>
- <https://pubmed.ncbi.nlm.nih.gov/31916515/>
- <https://pubmed.ncbi.nlm.nih.gov/22916351/>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6017965/>

MANDELIC ACID

Ingredient Claims

Gentler than most alpha-hydroxy acids	Suitable for sensitive skin
Exfoliates the skin to reveal smoother, more radiant skin	Improves overall skin complexion and skin tone
Helps improve the appearance of acne scars	Protects the skin from oxidative damage

Mandelic Acid is an α -hydroxy acid derived from bitter almonds with clinically proven benefits to improve the appearance of uneven skin tone. It can also improve the viscoelasticity of skin so that it appears tighter and more youthful. With continued use the signs of ageing may slowly reverse.

It has been mostly studied for use with acne and has a more gentle action on the skin. Mandelic acid is a type of gentle alpha hydroxy acid (AHA). It may help reduce acne, fine lines, and wrinkles and improve the appearance of uneven skin. As a person ages, skin renewal slows down, causing the skin to lose elasticity, discolor, and develop fine lines and wrinkles.

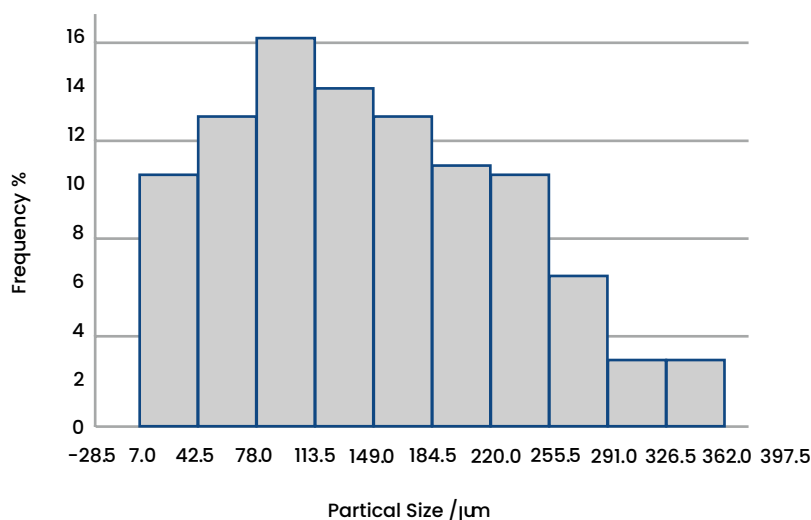
Mandelic acid is an aromatic alpha hydroxy acid with the molecular formula $C_6H_5CH(OH)CO_2H$. It is a white crystalline solid that is soluble in water and polar organic solvents.

- The molecular weight of mandelic acid is about 152.1 daltons which is larger than other alpha hydroxy acids (glycolic acid is 76.0 daltons, for example). This larger size allows mandelic acid to penetrate the skin more slowly which in turn makes it very gentle and suitable for all skin types including the most sensitive skin.
- It is a useful precursor to various drugs. Mandelic acid has a long history of use in the medical community as an antibacterial, particularly in the treatment of urinary tract infections. The drugs cyclandelate (Vasodilator which has spasmolytic effect on vascular smooth muscle) and homatropine (Synthesize anticholine, block acetylcholine, used for ophthalmic examination and optometry) are esters of mandelic acid.
- Mandelic acid has exfoliating properties that help remove dead skin cells from the surface of the skin. This promotes a smoother, more refined skin texture and can improve the appearance of uneven skin tone and roughness.
- Regular use of mandelic acid can help brighten the complexion and even out skin tone. It can reduce the appearance of dark spots, hyperpigmentation, and discoloration caused by sun damage or acne scarring.
- It may also help reduce the appearance of acne scars. Anti-Aging: Mandelic acid stimulates collagen production, which can help improve skin elasticity and reduce the appearance of fine lines and wrinkles. It also has antioxidant properties, protecting the skin against free radicals and environmental damage that contribute to premature ageing.

Features of Mandelic Acid

- More gentle, especially designed AHA for sensitive skin type
- With larger molecular size, No excessive percutaneous absorption, no more irritation
- Gentle Lift off dead skin cells & Even
- Excellent Skin Brightening Properties & Lightening PIH (Post inflammatory hyperpigmentation)
- Excellent inhibiting effect on tyrosinase activity
- With Strong reducing capability, compared with other organic acids
- Complexion Solution to Acne & Comedone Prone Skin
- Antibacterial properties, as a urinary antiseptic & anti-acne agent
- Can improve in acne, skin texture, wrinkles, lentigenes, and melasma
- Third-party approved its safety, skin & eye non-irritation, non-sensitisation.

Features of Mandelic Acid

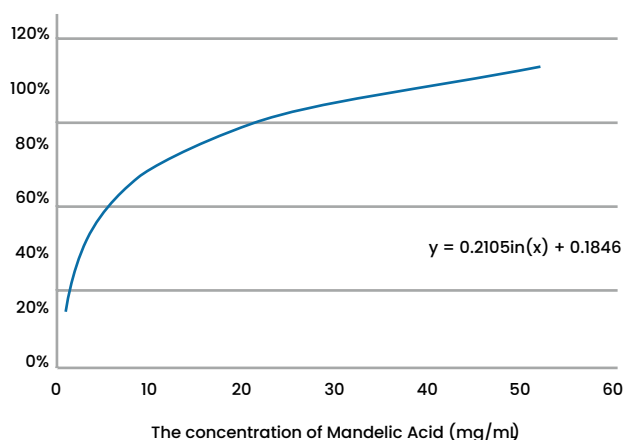


Particle size of Mandelic Acid is normally distributed

Whitening property of Mandelic Acid - Inhibiting effect on tyrosinase activity

The concentration of the pure compound was measured which caused a 50% inhibition of tyrosinase activity.

Whitening property of Mandelic Acid Inhibiting effect on tyrosinase activity (EC50)



- Through determination of tyrosinase activity inhibition, the result shows that Mandelic Acid value is 0.274 mg/mL, very effective inhibiting capability.
- Mandelic Acid is beneficial to reduce skin's melanin production, suitable for skin whitening & lightening application.

The concentration of Mandelic Acid on the Inhibition of Tyrosinase Activity (single phenol enzyme activity)

Links:

<https://pubmed.ncbi.nlm.nih.gov/30513536/>

<https://pubchem.ncbi.nlm.nih.gov/compound/Mandelic-acid>

<https://www.sciencedirect.com/science/article/abs/pii/S0738081X09001564?via%3Dihub>

[Data on file](#)

VACCINIUM MYRTILLUS FRUIT EXTRACT (BILBERRY EXTRACT)

Ingredient claims:

Protects the skin against oxidative damage	Reduces the appearance of fine lines
Reduces skin inflammation and redness	Promotes collagen production and skin firmness
Improves skin hydration	Balances oil production in the skin

Vaccinium myrtillus fruit extract, commonly known as bilberry extract, is derived from the fruit of the bilberry plant, Vaccinium myrtillus. Bilberry is a small, dark-blue, edible fruit native to Northern Europe that belongs to the same genus as blueberries and cranberries. Bilberry extract has been traditionally used in herbal medicine for various purposes, and it is often touted for its potential topical benefits, including:

Antioxidant Protection: Bilberry extract is a potent source of antioxidants, particularly anthocyanins and flavonoids. These antioxidants help neutralise free radicals in the skin, which are molecules that can cause oxidative stress and damage to skin cells. By reducing oxidative stress, bilberry extract can help protect the skin from premature ageing, fine lines, and wrinkles.

Skin Brightening: The presence of anthocyanins in bilberry extract may contribute to skin brightening effects. These compounds may help even out the skin tone and reduce the appearance of dark spots or hyperpigmentation, giving the skin a more radiant and uniform complexion.

Anti-Inflammatory Properties: Bilberry extract has shown anti-inflammatory properties, which can be beneficial for soothing irritated or inflamed skin. It may help calm redness and sensitivity, making it suitable for individuals with sensitive or reactive skin.

Moisturising and Hydrating: Some formulations of bilberry extract may have moisturising properties, helping to hydrate the skin and maintain its natural moisture barrier. This can be particularly useful for dry or dehydrated skin types.

Collagen Support: The antioxidant compounds in bilberry extract may support collagen synthesis in the skin. Collagen is a protein responsible for the skin's elasticity and firmness. By promoting collagen production, bilberry extract can help improve skin elasticity and reduce the appearance of sagging skin.

Protection from Environmental Damage: Due to its antioxidant content, bilberry extract may offer protection against environmental stressors like pollution and UV radiation, which can damage the skin and lead to premature ageing.

Anti-Ageing Effects: The combination of antioxidant, anti-inflammatory, and collagen-supporting properties can contribute to anti-ageing effects on the skin. Bilberry extract may help reduce the visible signs of ageing, such as fine lines and wrinkles.

Links:

<https://pubmed.ncbi.nlm.nih.gov/19747801/>

<https://pubmed.ncbi.nlm.nih.gov/24397884/>

<https://www.mdpi.com/1467-3045/44/10/313>

SACCHARUM OFFICINARUM (SUGAR CANE) EXTRACT

Ingredient Claims

Encourages cellular turnover	Improves overall skin tone
Reduces the appearance of fine lines and wrinkles	Improves skin moisture retention
Reduces the appearance of sunspots and dark spots	Reduces the appearance of blemishes
Promotes collagen formation and wound healing	Reduces skin inflammation and redness

Saccharum Officinatum (sugar cane) extract is an ingredient derived from sugar cane, a tall tropical grass widely cultivated for its sugar content. Sugar cane is the primary source of commercial sugar production, but it also contains various beneficial compounds that are used in skincare and cosmetics. The extract is typically obtained from the stalks of sugar cane and is rich in natural components such as alpha hydroxy acids (AHAs), particularly glycolic acid. Glycolic acid is a type of AHA known for its exfoliating properties and its ability to promote skin renewal. It works by loosening the bonds between dead skin cells, effectively exfoliating the top layer of the skin, and revealing smoother, brighter, and more youthful-looking skin underneath.

The glycolic acid present in sugar cane extract helps to gently exfoliate the skin, promoting the removal of dead skin cells and enhancing skin radiance. Regular exfoliation can also help improve the texture of the skin and reduce the appearance of fine lines and wrinkles. Cell

By encouraging the shedding of dead skin cells, sugar cane extract supports the skin's natural renewal process. This can lead to a fresher, more even-toned complexion. Sugar cane extract may help improve the skin's ability to retain moisture, making it beneficial for individuals with dry or dehydrated skin. The exfoliating action of sugar cane extract can stimulate collagen production in the skin. Collagen is essential for maintaining skin elasticity and reducing the appearance of wrinkles and sagging.

Glycolic acid in sugar cane extract may assist in reducing the appearance of sunspots and pigmentation caused by sun damage. The exfoliating properties of sugar cane extract can help unclog pores, reduce the occurrence of acne, and improve overall skin clarity.

Other compounds such as phenols are also found in sugar cane, phenols which provide antioxidant and anti-inflammatory effects. Phenols also promote wound healing of the skin in addition to promoting the formation of collagen.

Links:

<https://www.sciencedirect.com/science/article/abs/pii/S0926669021003897>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4441162/>

CITRUS LIMON (LEMON) FRUIT EXTRACT

Ingredient Claims:

Rich in citric acid to gently exfoliate the skin and promote skin renewal	Contains vitamin C to brighten skin tone for a more even complexion
Skin feels tighter and smoother	Reduces excess oil production in the skin

Citrus Limon (lemon) fruit extract is an extract derived from the fruit of the lemon tree, it is rich in several beneficial compounds, including vitamins (such as vitamin C and vitamin E), flavonoids, and various phytonutrients. These components contribute to the potential skincare benefits of lemon extract:

- **Brightening and Even-Tone:** Lemon extract contains a high concentration of vitamin C, which is known for its skin-brightening properties. Vitamin C helps inhibit melanin production, reducing the appearance of dark spots, hyperpigmentation, and uneven skin tone. Regular use of products with lemon extract can lead to a more radiant and even complexion.
- **Antioxidant Protection:** Lemon extract is a potent source of antioxidants, including vitamin C and flavonoids. These antioxidants help protect the skin from free radical damage, which can lead to premature aging, such as fine lines, wrinkles, and dull skin.
- **Exfoliation:** Lemon extract contains natural alpha hydroxy acids (AHAs), particularly citric acid. AHAs gently exfoliate the skin, removing dead skin cells and unclogging pores. This exfoliation can lead to smoother, softer skin and may help with issues like acne and rough texture.
- **Astringent Properties:** The natural astringent properties of lemon extract can help tighten the skin and reduce the appearance of pores. This makes it beneficial for those with oily or acne-prone skin.
- **Cleansing and Purifying:** Lemon extract has natural antibacterial and antiseptic properties, making it effective in cleansing the skin and removing impurities. It can be used in facial cleansers and toners to help keep the skin clean and refreshed.
- **Skin Hydration:** Lemon extract can help retain moisture in the skin, providing hydration and preventing dryness.
- **Oil Control:** Due to its astringent properties, lemon extract can help regulate excess oil production on the skin, making it beneficial for those with oily or combination skin.

Links:

<https://pubmed.ncbi.nlm.nih.gov/32331689/>

<https://pubs.rsc.org/en/content/articlehtml/2020/ra/d0ra05518b>

https://asrjetsjournal.org/index.php/American_Scientific_Journal/article/view/3805

ACER SACCHARUM (SUGAR MAPLE) EXTRACT

Ingredient Claims:

Contains phenols to help protect the skin from oxidative damage	Contains alpha-hydroxy acids to promote skin turnover
Rich in phytonutrients and minerals to nourish the skin and reduce skin inflammation	Promotes collagen formation, improving skin elasticity
Skin feels softer and soothed	Improves overall skin complexion

Acer Saccharum (sugar maple) extract is an extract derived from the bark or sap of the sugar maple tree, scientifically known as Acer Saccharum. Sugar maple is a deciduous tree native to North America, known for its beautiful fall foliage and its role in the production of maple syrup.

The extract is rich in various bioactive compounds, such as natural alpha-hydroxy acids (AHAs), phenolic compounds, phytonutrients, and minerals. These components contribute to the potential skincare benefits of sugar maple extract:

- **Exfoliation:** Sugar maple extract contains natural AHAs, particularly malic acid. AHAs are chemical exfoliants that help to gently remove dead skin cells from the surface of the skin, promoting a smoother and brighter complexion. Regular exfoliation can also improve the skin's texture and minimise the appearance of fine lines and wrinkles.
- **Moisturising and Hydrating:** Sugar maple extract has humectant properties, which means it can attract and retain moisture in the skin. This can help improve skin hydration and prevent dryness.
- **Antioxidant Protection:** The phenolic compounds present in sugar maple extract provide antioxidant benefits, these include gallic acid, ellagic acid and rutin. Antioxidants help neutralise free radicals in the skin, which are responsible for oxidative stress and can lead to premature ageing. By reducing oxidative damage, sugar maple extract supports a more youthful and radiant appearance. Skin
- **Conditioning:** Sugar maple extract contains various minerals and nutrients such as calcium, potassium and magnesium that can help condition and nourish the skin, promoting a healthy and glowing complexion.
- **Skin Soothing:** Sugar maple extract contains phytonutrients such as quercetin and kaempferol which have soothing and anti-inflammatory properties, making it beneficial for calming irritated or sensitive skin.
- **Collagen Support:** AHAs, such as those found in sugar maple extract, have been shown to stimulate collagen production in the skin. Collagen is essential for maintaining skin elasticity and firmness, which can help reduce the signs of ageing.

Links:

<https://pubmed.ncbi.nlm.nih.gov/29442262/>

<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-2494.1994.tb00103.x>

HAMAMELIS VIRGINIANA WATER (WITCH HAZEL)

Ingredient Claims:

Helps control excess oil production	Alleviates skin redness and inflammation
Reduces the appearance of blemished skin	Rich in antioxidants to reduce oxidative skin damage
Balances skin's pH, improving overall skin tone	Reduces skin puffiness for tighter looking skin

Hamamelis Virginiana water, commonly known as witch hazel, is a natural botanical extract derived from the leaves, bark, and twigs of the witch hazel shrub (Hamamelis Virginiana). Witch hazel has been used for centuries for its medicinal and skincare properties and is still a popular ingredient in many skincare products today. The distillation

process extracts the water from the witch hazel plant, resulting in witch hazel water. It is a clear, colourless liquid with a mild, slightly astringent aroma. Witch hazel water contains several beneficial compounds, including tannins, flavonoids, and other antioxidants, which contribute to its various skincare benefits. The benefits include the following:

- **Astringent Properties:** Witch hazel water is a natural astringent, meaning it can help tighten and constrict the skin's tissues. When applied topically, it can temporarily reduce the appearance of pores and help control excess oil, making it beneficial for those with oily or blemish-prone skin.
- **Soothing and Anti-Inflammatory:** Witch hazel water has soothing and anti-inflammatory properties, which can help calm and relieve irritated or inflamed skin. It is often used to alleviate redness, itching, and minor skin irritations.
- **Antioxidant Protection:** Witch hazel contains antioxidants, such as flavonoids and tannins, which help neutralise free radicals. Free radicals can cause oxidative stress and contribute to premature aging. The antioxidants in witch hazel water help protect the skin from such damage, promoting a more youthful appearance.
- **Gentle Cleansing:** Witch hazel water acts as a gentle cleanser, removing impurities and excess oil from the skin without over-drying. It can be used as a toner or in facial cleansers, providing a mild yet effective cleansing action.
- **Skin Toning:** Witch hazel is often used as a toner to balance the skin's pH and prepare it for other skincare products. It helps restore the skin's natural pH level after cleansing, providing a toned and refreshed feeling.
- **Reduces Swelling and Puffiness:** Due to its astringent properties, witch hazel can help reduce swelling and puffiness, making it beneficial for eye care products and for soothing under-eye bags.
- **Wound Healing Support:** Witch hazel has been traditionally used for its wound healing properties. It helps soothe and protect minor cuts, abrasions, and skin irritations, promoting a faster healing process.

Links:

<https://pubmed.ncbi.nlm.nih.gov/35740016/>

<https://pubmed.ncbi.nlm.nih.gov/18311930/>

<https://pubmed.ncbi.nlm.nih.gov/36012541/>

ANTHEMIS NOBILIS FLOWER EXTRACT

Ingredient Claims:

Calms and soothes irritated skin	Reduces skin redness
Reduces skin inflammation	Protects the skin from oxidative damage
Maintains skin moisturisation	Promotes wound healing

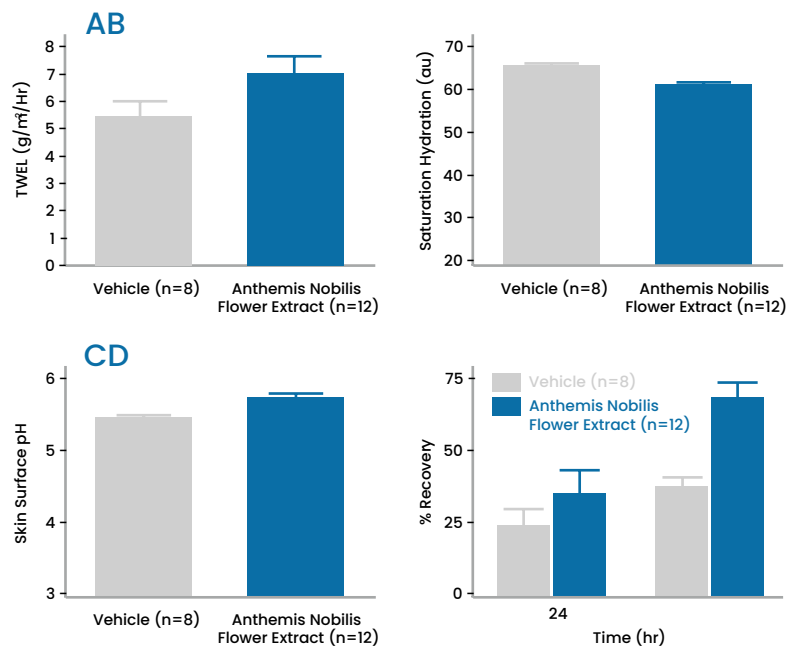
Chamomile refers to a group of flowering plants that belong to the Asteraceae family. Known for its delicate, daisy-like flowers that have a bright yellow centre and white petals, the use of chamomile can be traced back thousands of years to ancient civilisations. The plant's calming and medicinal properties made it highly valued in various cultures throughout history. Chamomile was a popular herb in ancient Egypt, where it was dedicated to the sun god Ra and used in religious ceremonies. Egyptians also used chamomile for its cosmetic properties, incorporating it into skincare preparations. The ancient Greeks and Romans revered chamomile for its therapeutic benefits. Greek physician Dioscorides mentioned chamomile in his influential herbal text, "De Materia Medica." Chamomile was used to treat digestive disorders, fevers, and inflammations.

Topically applied chamomile flower water offers several potential benefits for the skin due to its natural properties:

- **Soothing and Calming:** Chamomile flower water is known for its soothing and calming properties. It can help alleviate skin irritation, redness, and inflammation caused by conditions like eczema, dermatitis, and rosacea.
- **Anti-Inflammatory:** Chamomile contains anti-inflammatory compounds, such as chamazulene and bisabolol, which can help reduce skin inflammation and promote healing. It is beneficial for soothing sunburns, insect bites, and other minor skin irritations.
- **Antioxidant Protection:** Chamomile flower water contains phenolic compounds, primarily the flavonoids apigenin

and quercetin that can help protect the skin from oxidative stress caused by free radicals. This can aid in preventing premature aging and reducing the appearance of fine lines, wrinkles, and age spots.

- **Moisturising and Hydrating:** The hydrating properties of chamomile flower water can help improve skin's moisture levels and prevent dryness. It assists in maintaining the skin's natural moisture barrier, keeping it supple and nourished.
- **Skin Brightening:** Chamomile flower water can help to brighter complexion by reducing the appearance of dark spots and uneven skin tone. It can help lighten hyperpigmentation and promote a more even, radiant skin tone.
- **Antimicrobial and Antiseptic:** Chamomile flower water has antimicrobial and antiseptic properties that can assist in combating bacteria and preventing infections. It is used to cleanse and soothe acne-prone skin, reducing breakouts and promoting clearer skin. **Wound Healing:** Chamomile flower water's anti-inflammatory and skin-soothing effects can aid in the healing process of minor wounds, cuts, and abrasions. It can help reduce redness, swelling, and promote faster tissue repair.



Results indicate that the essential oil of *Anthemis palestina* exhibited substantial antioxidant activities as demonstrated with DPPH, ferric reducing antioxidant power, and hydroxyl radical scavenging activity. In addition, a broad-spectrum antibacterial activity of the oil was revealed with better susceptibility of Gram positive bacteria towards the oil. The MIC values ranged between 6–75 µg/ml. Besides, the oil demonstrated a moderate inhibitory effect on the three *Candida* species examined; with MIC values ranging between 48–95 µg/ml. Potent cytotoxic activities, especially against HeLa cell line; with LD50 of 32 µg/ml, BJAB cell line; with LD50 of 57 µg/ml, and Caco-2 cell line; with LD50 of 61 µg/ml, were observed.

Links:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2995283/>

https://www.researchgate.net/publication/289263589_Topical_effects_of_Chamomilla_Recutita_in_skin_damage_A_literature_review

<https://pubmed.ncbi.nlm.nih.gov/27790360/>

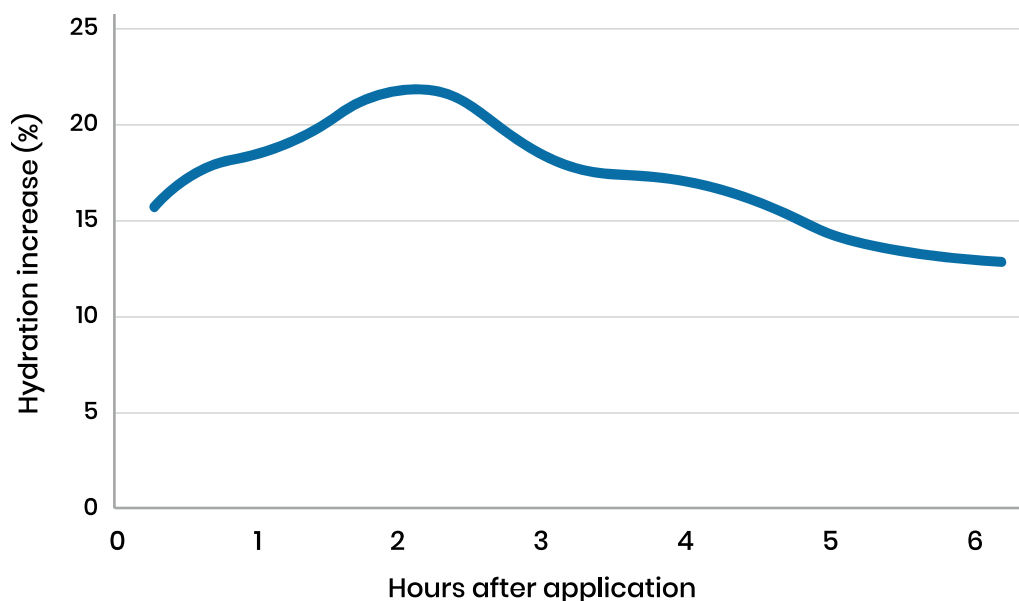
[Data on file](#)

SODIUM HYALURONATE

Ingredient Claims:

Boosts skin hydration	Supports the skin barrier
Promotes wound healing	Protects the skin from environmental damage
Skin feels smoother and tighter	Supports collagen and elastin formation

Results: Up to 25% increase of skin hydration 2 hours after application



In vitro

High-molecular-weight (up to 2000 kDa) Sodium Hyaluronate improves skin hydration and elasticity when compared to placebo.*

Study

0.025% Sodium Hyaluronate (1.4 MDa) in an emulsion vs placebo

8 Volunteers

Parameter: skin hydration (Corneometer CM 820 PC)

Sodium Hyaluronate is the salt form of Hyaluronic Acid, a water-binding ingredient that has the ability to fill the spaces between the connective fibres known as collagen and elastin. Hyaluronic Acid hydrates and separates the skin, allowing it to retain water and create a plumping effect. Sodium Hyaluronate has been used for moisturisation and wound healing since its discovery in the 1930s. It is comprised of small molecules that penetrate the skin easily and can hold up to 1000 their own weight in water. Because the skin naturally loses its water composition as it ages (going from 10% - 20% water to less than 10%).

Hyaluronic Acid and Sodium Hyaluronate can replace some of the water lost in the dermis, and potentially fight wrinkles and other signs of ageing. Because of its relatively high molecular weight it is not absorbed following application to the skin. Instead, it forms a thin, light, permeable, invisible, viscoelastic surface film. This fixes the moisture on the surface of the skin. The Hyaluronic Acid (HA) film supports the skin's natural protective mechanism. Since it is an excellent water reservoir leading to a perceptible and visible improvement in skin condition.

Links:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3583886>

[Data on file](#)

GLYCERIN

Ingredient Claims:

Excellent moisturising properties	Enhances skin elasticity
Calms and soothes irritated skin	Promotes skin barrier function
Reduces trans epidermal water loss	Soothes hot or sunburned skin

Glycerin is a humectant which is present in all-natural lipids. Derived from natural substances by hydrolysis of fats and by fermentation of sugars. This palm-free vegetable Glycerin is widely used in cosmetic products and provides the following benefits:

- **Moisturising:** Glycerin has excellent moisturising properties. It attracts and retains moisture from the environment, helping to hydrate the skin and prevent dryness. It forms a protective layer on the skin, reducing water loss and maintaining its natural moisture balance.
- **Skin barrier repair:** Glycerin can support the skin's barrier function by strengthening the outermost layer of the skin, known as the stratum corneum. This can help improve the skin's ability to retain moisture and protect it from external irritants.
- **Soothing and calming:** Glycerin has soothing properties that can help alleviate skin irritation, itching, and inflammation. It can be beneficial for conditions such as eczema, psoriasis, or dry, sensitive skin.
- **Anti-ageing effects:** Glycerin has the ability to improve the appearance of fine lines and wrinkles. By maintaining skin hydration, it can enhance the skin's elasticity and firmness, giving it a smoother and more youthful appearance.
- **Compatibility with various skin types:** Glycerin is generally well-tolerated by different skin types, including sensitive and acne-prone skin. It is non-comedogenic, meaning it won't clog pores or contribute to breakouts.
- **Enhances product effectiveness:** Glycerin is often used as a key ingredient in skincare formulations because it helps other ingredients penetrate the skin more effectively. It can enhance the delivery of active ingredients, allowing them to work more efficiently.
- **Cooling effect:** Glycerin has a cooling effect on the skin, making it useful in products such as facial mists or soothing gels. It can provide relief for hot or sunburned skin.

Links:

[International Journal of Cosmetic Science, August 2016, ePublication](#)

[British Journal of Dermatology, July 2008, pages 23-34](#)

[Journal of Cosmetic Dermatology, June 2007, pages 75-82](#)

[Proceeding of the National Academy of Sciences, June 2003, pages 7,360-7,365](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8395744/>

* mg/kg

