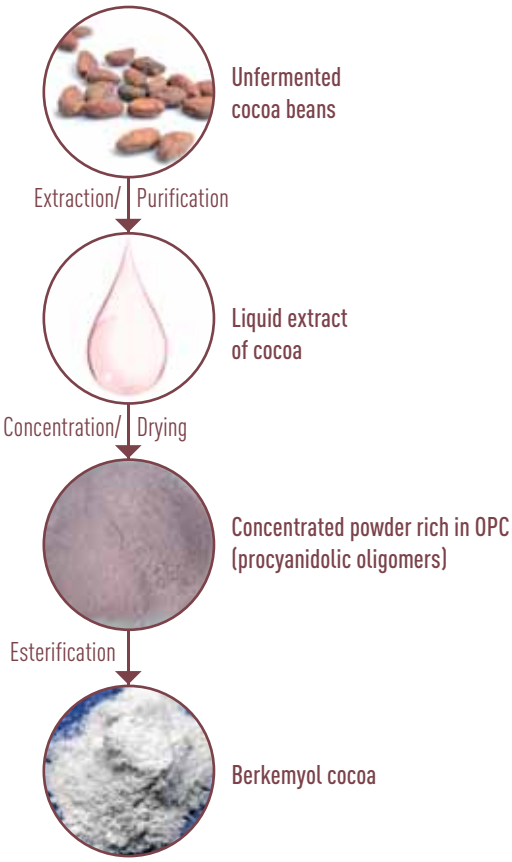
berkemyol®
COCOA

Preserving youthful skin



STABILISED COCOA OPC
Plant polyphenols content >95%

KEY BENEFITS

- Protects elastin
- Combats oxidative stress
- Anti-photoaging

Innovation :

- The first plant polyphenols to be vectorized for use in cosmetics*

by berkem®
Active by principle

*Berkem patents: FR 2723943 / US 5808119

berkemyol® CACAO

Natural bioavailable antioxidant active ingredient derived from cocoa beans - >95% polyphenols

Description :

berkemyol® cocoa is obtained by esterification of a polyphenolic extract of cocoa beans. The beans of unfermented cocoa are very rich in active polyphenols. The extract used to make berkemyol cocoa contains more than 70% flavanols. The flavanols of cocoa possess high antioxidant power, they are part of the most powerful family of antioxidants in the plant kingdom.

PROPERTIES OF OPC IN COSMETICS

Ageing is characterised by an accumulation of oxidised compounds that induce cellular dysfunction and senescence. Free radicals inflict oxidative damage on the cells, proteins, and lipids of the skin, which are altered to such an extent that they can no longer fulfil their function. They are primarily induced by the sun's rays, and to a lesser extent pollution and stress. Furthermore, with age, our enzymatic defences tend to decrease; the synthesis of superoxide dismutase, glutathione peroxidase, and catalase is reduced.

berkemyol® cocoa boasts an exceptional combination of properties that enable the skin to effectively combat the effects of ageing and the damages caused by free radicals, and by exerting a global action on the components of the papillary dermis, a major target in the fight against cutaneous ageing :

- Protection against oxidative stress
- Protects the functionality of the skin's proteins and lipids that have suffered free radical damage
- Stimulates the activity of fibroblasts thanks to synergistic action with Vitamin C[1]
- Stimulates collagens and glycosaminoglycans
- Stabilises elastin
- Anti-elastase, anti-collagenase, and anti hyaluronidase activity
- Improvement in the cutaneous microcirculation via strengthening of the capillary walls
- Antiglycation[2] activity

TECHNICAL DATA

Composition : Esterified procyanidolic compounds of cocoa, mostly epicatechin.

Preservative free

Appearance : white to beige powder with an oily texture

Melting point : around 50°C

APPLICATIONS

SKIN CARE
Anti-ageing products
Products for the treatment and prevention of wrinkles
Daily protection products

SUN CARE
Synergy with filters in the photoprotection products

MAKE-UP
Facial care make-up

FORMULATION

Mix with the oily phase.
Recommended concentration 0,3 to 0,7%
pH range between 3 and 8

TOLERANCE - SAFETY

- Evaluation of ocular irritation potential (modèle HCE SKINETHIC™) ..... *not irritant*
- Evaluation of cutaneous irritation potential (modèle EPISKIN™) ..... *not irritant*

REGISTRATIONS

Nom INCI/CTFA	Palmitoyl cocoa seed extract
CAS Number	1215122-82-9
Europe	Approved
USA	Approved
Status of the product in other zones	Please consult us

1.Frank, J., & al, Dietary flavonoids with a catechol structure increase a-tocopherol in rats and protect the vitamin from oxidation in vitro. J. Lipid Res. 47, 2718–2725, 2006

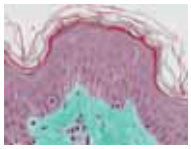
2.Urios P & al, Flavonoids inhibit the formation of cross-linking AGE pentosine in collagen incubated with glucose according to their structuren Eur.J.Nutr, 46, 139-146, 2007

Efficacy tests for Berkemyol® cocoa

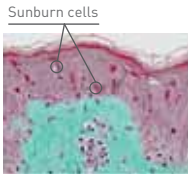
EX-VIVO ANTIOXIDANT EFFECT

The antilipoperoxidative effect of berkemyol® cocoa was determined by measuring malondialdehyde (MDA) generated in response to a UV treatment on human skin explants maintained alive. The level of MDA reflects the oxidation of lipids.

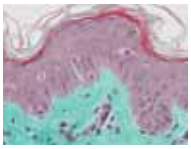
Morphology



Untreated explant D+5



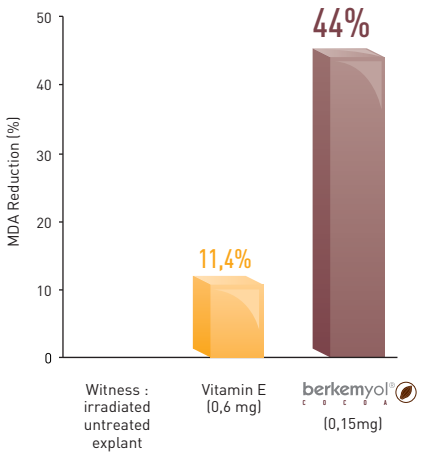
Explant after UV treatment D+5 without Berkemyol® cocoa



Explant after UV treatment D+5 with 0.5% Berkemyol® cocoa

Measurement of MDA

Reduction of lipoperoxidation by Berkemyol® cocoa



44% The berkemyol® cocoa at a concentration of 0.5% significantly reduces the peroxidation of lipid membranes.

- **It is a very powerful antioxidant** compared to vitamin E (antioxidant reference in cosmetology).
- The morphology of the dermis and the epidermis is protected from damages caused by UV with the addition of berkemyol® cocoa.

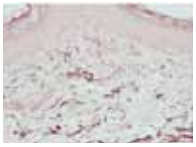
→ **Preserves the integrity of the skin.**

EX-VIVO ANTI-ELASTASE EFFECT

Test carried out on **human skin explants maintained alive.**

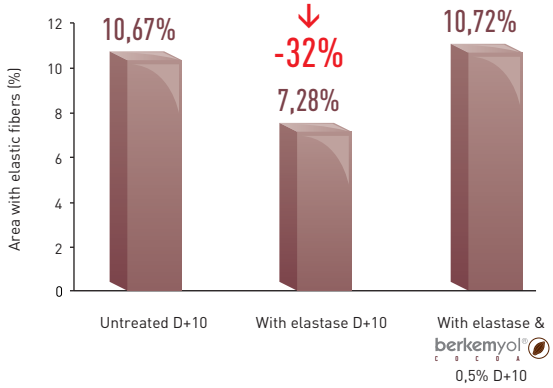
Untreated Explant D+10

Explant with addition of elastase D+10



Explant with addition of elastase + 0.5% Berkemyol® cocoa D+10

Elastase inhibition by Berkemyol® cocoa



- The introduction of elastase on unprotected explants results in a significant decrease in the elastic network (-32%).
- Treatment with elastase and berkemyol® cocoa **allows the elastic fibers to be maintained**.

→ The berkemyol® cocoa inhibits the elastase that is responsible for the destruction of the elastic network. **It helps to preserve the elasticity and the youthfulness of the skin.**

IDEAS OF CLAIMS !

- Antioxidant/Anti-aging
- Protects against oxidative stress
- Fights against photoaging
- Protects membranes and cellular DNA / Protects the components (collagen, elastin) of the extracellular matrix
- Preserves the suppleness and the elasticity of the skin

Another test available for Berkemyol ® cocoa : Effect on collagen I (increase of 14%) for an anti-aging action.

Antioxidant gourmand cream

	INCI	TRADE NAME/ SUPPLIER	QUANTITIES %
PHASE A	Cetyl alcolhol (and) Glyceryl stearate (and) PEG-75 Stearate (and) Ceteth-20 (and) Steareth-20	Emulium Delta/ Gattefosse	3
	Isopropyl palmitate	Palmitate isopropyle/ Stearinerie Dubois	3,75
	Squalane	Squalane/ Laserson	2,5
	PPG-15 Stearyl Ether	Sympatens - ASP/ 150 Kolb	2
	Cetearyl alcohol	Crodacol CS90EP/ Croda	1,75
	Glyceyl Stearate	Sympatens GMS/ Kolb	1,5
	Palmitoyl cocoa seed extract	Berkemyol cocoa / Berkem	0,5
PHASE B	Water (Aqua)	Water	QS
	Hydroxyethyl acrylate/sodium acryloyldimethyl taurate copolymer	Sepinov EMT/ Seppic	0,5
	Propylene glycol	1,2-Propyleneglycol Care/ Laserson	4
	Glycerin	Glycerine/ Cooper	2,5
PHASE C	Phenoxyethanol (and) Caprylyl glycol	Microcare PHG/ Thor	1
	Tocopherol	DL-alpha-tocopherol	0,4

Protocole : Disperse Sepinov EMT in water. Heat A and B separately to 75°C. Add A into B under intensive stirring. At 35°C, add the ingredients from phase C. Keep under slow stirring until room temperature.

Berkem in figures

- An independent SME on a human scale, a specialist in chemical formulation and plant extraction.
- 30 years' experience in the extraction of active principles.
- A 6ha site in the south-west of France in Gardonne.
- 50 000 m2 of plant and buildings, of which 5000 m2 covered.
- Present on the European and international markets, 50% of turnover recorded for exports
- An annual processing capacity of more than 5000 tonnes of plants

berkem®
Plant Extraction

"Marais Ouest" - 24680 GARDONNE - France
Tél. **33 (0)5 53 63 81 00** - Fax. 33 (0)5 53 63 81 01
www.berkem.com

Documents available on request

- Technical specifications
- Data sheet
- Certificate of plant origin
- Non-GMO Certificate
- Extraction method
- Safety data sheet
- Regulatory record / international status