The present invention concerns a cosmetic composition counteracting the harmful effects of exposure to the sun and principally actinic ageing of the skin.

The present invention more particularly concerns a cosmetic composition containing, as an active ingredient, an extract of sunflower oil cake (helianthus annuus).

The sunflower, helianthus annuus, of the asteraceae family, is a plant having a height varying from 1 to 1.5 metre, very well known in Europe for its seeds which provide, when they are gathered ripe, an edible oil (sunflower oil) and a residue which is called oil cake, used as an animal feed.

Certain authors found valuable properties for use in cosmetology, for a proteinaceous isolate derived from sunflower oil cake (Raymond et al. - Parfums, Cosmétiques, Arômes - n°56, April-May 1984, p.57), but did not envisage using a fraction rich in polyphenols such as that used in the invention.

Moreover, these same authors found these proteins to have emulsifying properties, but did not find novel biological properties in the fraction derived from sunflower oil cake used in the present invention.

Still others (Nedeczky et al., FR-A-2 487 674) have considered it possible to use the extracts of sunflower stalks, and not seeds, as a raw material in cosmetology.

It is obvious, in view of the results given later, that the extract of stalks, carried out under the same conditions as the extraction of sunflower oil cake, does not have the same biological properties.

Certain authors (Malvoisin, FR-A-2 207 652) also considered it possible to use, as a raw material in the cosmetics industry, seeds which are useful in foodstuffs, which would enable turbid liquid bases to be obtained.

The extract used in the present invention is characterized in particular by its clarity, since it is certainly not an emulsion and, unlike other extracts, the extract used is obtained from a raw material derived from a seed rich in fatty matter from which fatty matter has in fact been removed, the proteins have been precipitated and remaining substances have been extracted

with an alcohol such as methanol, so as to obtain an extract rich in polyphenols.

Finally, a patent of invention (L-Oréal, GB-A-2 067 899) mentions the possibility of using, as a raw material for cosmetology, the residue of the medicinal plant after extraction of various ingredients : essential oils, colouring materials and active ingredients. It should be noted however that this patent specifies the use of the residue without any preparation.

Now, the extract used in the present invention is obtained in fact as a result of two successive extractions. The first extraction consists of removing the oil from the sunflower seed and the second extraction consists of extracting the residues resulting from the first extraction.

The extract used in the present invention is an alcoholic extract of sunflower oil cake. It may be obtained from sunflower oil cake from which the oil has been extracted, by powdering the cake and extracting with an alcohol, in particular methanol.

Extraction may be carried out at ambient temperature with prolonged stirring (for example 24 hours) using a ratio of oil cake/alcohol of approximately one part by weight of oil cake for 10 to 50 parts by volume of alcohol.

The following example illustrates the preparation of the extract.

Example of preparation

Sunflower oil cake obtained from an oil extraction operation is ground until a particle size is obtained such that the residue on a 500 micrometre sieve is less than 5%. 2 litre of methanol are added to 100 g of the powder thus obtained and the whole is stirred for 24 hours at ambient temperature. It is filtered and the filtrate is evaporated to dryness. 10 g of residue are obtained which are taken up again in 30 g of 1,2-propanediol. An extract is obtained having a polyphenol content of 2.5 % by weight.

The applicants have discovered that the sunflower oil cake extract used in the present invention possesses activity in inhibiting photochemical reactions (peroxidations) and that consequently, cosmetic compositions containing this extract at

a concentration of 0.01 to 1 % by weight of polyphenols, preferably 0.1 to 0.5 % by weight, are able to counteract the harmful effects of exposure to sunlight and particularly to actinic ageing of the skin.

When the skin is exposed to sunlight, not only ultraviolet light, but also radiation in the visible spectrum, are capable of inducing photochemical phenomena in its various layers leading, by radical chain reactions to adverse tissue changes comparable to those produced by ageing.

It is recognized that chronic exposure to sunlight accelerates skin ageing. The prevention of this actinic ageing is only partly achieved by the application of ultraviolet filters, the latter having a limited absorption spectrum. The visible radiation absorbed by endogenous molecules such as flavin derivatives are also liable to induce photochemical reactions which contribute to the harmful action of excessive exposure to sunlight.

Ageing of a tissue may be revealed by the accumulation within it of the products of lipidic peroxidation known as lipofuscin or "ageing pigment" resulting from radical reactions induced by enzymatic phenomena (oxidasic) or non-enzymatic phenomena (photochemical).

The applicants have demonstrated that the extract used in the invention counteracts the lipidic oxidation process.

The present invention consequently concerns a cosmetic composition counteracting ageing of the skin, characterized in that it contains an alcoholic extract of sunflower oil cake, at a concentration expressed as 0.01 to 1 % by weight of polyphenols, in a suitable cosmetic base.

The experiments reported hereinafter demonstrate the activity of the extract, which is the active principle used in the present invention.

Photo-induced epidermal peroxidation

Lipofuscin pigments which accumulate in aged tissues are lipoproteinaceous complexes formed by these lipidic peroxidation products attached to amine residues of membrane proteins. When acute peroxidation is induced in a tissue, an increase in the

peroxidation products may be demonstrated a short while later, due to their property of forming, with thiobarbituric acid, a compound absorbing at 532 nm. Starting with these principles, the applicants have devised an experimental protocol to demonstrate the antiperoxidant activity of sunflower oil cake extract.

Tests were carried out on atrichis mice, photosensitized with rose bengal. After immersion in a solution of rose bengal (0.01M) for 5 minutes, the animals were dried in the dark for 10 minutes, and then an area of dorsal skin was treated by applying 25μl of preparation. Only the excipient was applied to another area serving as a control. The animals were then exposed for 30 minutes to light from a 75 watt Kripton lamp placed at a distance of 25 cm.

The mice were sacrificed by cervical dislocation and samples of skin (treated and control) were removed. The epidermis was collected after being detached at 55°C for 30 seconds. The samples were homogenized in a buffer, clarified with trichloroacetic acid and centrifuged.

A sample of the homogenate was retained for protein analysis. An equal volume of thiobarbituric acid was added to the supernatant obtained such that its final concentration was 0.35 %. After heating at 100°C for 15 minutes, the colour developed was measured by means of a spectrophotometer at 532 nm. The protective effect of the extract against the peroxidizing process is illustrated in Table I.

The products tested were :

- the excipient consisting of 1,2-propanediol,
- the excipient containing 10 % of an extract of sunflower oil cake containing 2.5 % by weight of polyphenols,
- the excipient containing 2 % of the same oil cake extract,
- the excipient containing 10 % of an extract of sunflower stalks (obtained under the same conditions in the above example of the preparation above).

TABLE I

Protective effect of sunflower oil cake extract against photo-induced epidermal peroxidation

Treatment	Thiobarbituric acid reagents (OD/10 mg protein ml^{-1})	Inhibition (%)
Excipient	0.105 ± 0.010	-
10 % oil cake extract	0	100
2 % oil cake extract	0.045 ± 0.010	52
10 % stalk extract	0.003 ± 0.001	3

Cosmetic compositions according to the invention may contain if desired all of the substances known for their beneficial properties in cosmetology and particularly sun filters, moisturizers, hyaluronic acids, lipids, phospholipids, vitamins, perfumes, preservatives and colouring materials.

Cosmetic compositions according to the invention may be offered in all the forms used in cosmetology; creams, gels, milks, lotions in jars, tubes, vials, sprays and sticks.

The various cosmetic forms mentioned above are obtained according to methods used in this field.

Examples of cosmetic compositions are given below (in parts by weight);

1) O/W cream

Extract containing 2.5% polyphenols	0.5 to 10
Wheat germ oil	8
Glycerol stearate	4
Triethanolamine	0.5
Carboxyvinyl polymer	0.5
Methoxycinnamic esters	qs
Benzophenone	qs
Preservatives	qs

	Water	qsp 100
2)	<u>Gel</u>	
	Extract containing 2.5% polyphenols	0.5 to 10
	Glycerol	40
	Sodium alginate	7
	Borax	1
	Thymol	qs
	Preservatives	qs
	Water	qsp 100



CLAIMS

1. Cosmetic composition counteracting ageing of the skin, characterized in that it contains an alcoholic extract of sunflower oil cake at a concentration expressed as 0.01 to 1% by weight of polyphenols, in a suitable cosmetic base.

2. Composition according to Claim 1, characterized in that the extract is a methanol extract.

3. Composition according to Claim 1 or Claim 2, containing the said extract at a concentration expressed as 0.1 to 0.5% by weight of polyphenols.

4. Use of an alcoholic extract of sunflower oil cake for the manufacture of a cosmetic composition counteracting ageing of the skin according to Claim 1.

5. Process for counteracting ageing of the skin, wherein a cosmetic composition containing an alcoholic extract of sunflower oil cake at a concentration expressed as 0.01 to 1% by weight of polyphenols, in a suitable cosmetic base, is applied to the skin.

6. Process according to Claim 5 wherein the extract is a methanol extract.

7. Process for the preparation of a cosmetic composition according to Claim 1, wherein an alcoholic extract of sunflower oil cake is incorporated into a suitable cosmetic base at a concentration expressed as 0.01 to 1% by weight of polyphenols.

8. Process according to Claim 7 wherein the extract is a methanol extract.