HELLENIC REPUBLIC
National and Kapodistrian University of Athens
FACULTY OF PHARMACY
Department of Pharmacognosy and Natural Products Chemistry
Professor Skaltsounis A.L.

PharmaGnose

Sample nature:	SOAP
Botanical species:	
Origin:	Aeghio, Achaia, GREECE
Part:	
Producer:	ELEAMED
PharmaGnose reference:	
Date of reception:	1/12/2016
Date analysis:	19/12/2016
Packaging:	
Analysis:	Fatty Acid Methyl Esters (FAMEs) preparation GC-MS

Comments and conclusions:

Major compounds identified:

- **Oleic acid: 40.56%**
- **Stearic acid: 29.29%**

GAS CRHOMATOGRAPHY

ANALYSIS CONDITIONS

Apparatus: Thermo Trace DSQ GC-MS

Column: TR-5 MS

Detector voltage (eV): 70

Sample name: Sapon_01

Carrier gas: Helium

Sample conc. (mg/ml): 1

Flow rate (mL/min): 1

Sample solvent: Dichloromethane

Injection volume (μL) / Split ratio: splitless

Oven temperature program	Oven ramp.	ºC / min	Next ºC	Hold (min)	Run Time (min)
	Initial	0	120	0	0
	Ramp. 1	3	190	0	0
	Ramp. 2	1	210	0	
	Ramp. 3	3	290	10	80

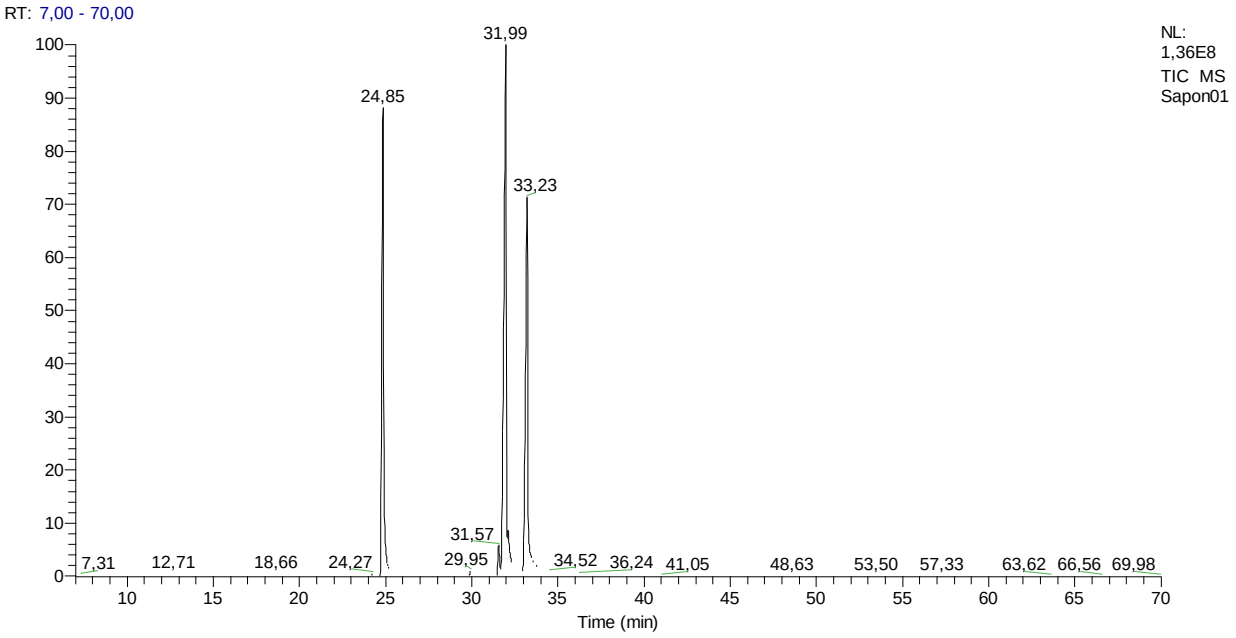

Table 1: Identification results (Soap).

Peak	RT (min)†	Component name*	%
1	12.76	Lauric acid (12:0)	0.19
2	18.68	Myristic acid (14:0)	0.36
3	24.27	Palmitoleic acid (16:1)	0.19
4	24.83	Palmitic acid (16:0)	27.54
5	31.57	Linoleic acid (18:2)	1.40
6	31.94	Oleic acid (18:1)	40.56
7	33.20	Stearic acid (18:0)	29.29
		TOTAL	**99.53**

†*RT refers to the retention time of fatty acid methyl ester derivatives.*
**Oil components are identified by a combination of bibliographic references and mass spectra libraries Wiley275 and NIST.*

Table 2: Total fatty acid profile of the sample analyzed.

Fatty acids (%)*		
Monounsaturated (MUFAs)	**Polyunsaturated (PUFAs)**	**Saturated (SFAs)**
40.75	1.40	57.38

**Percentage of the total compounds identified.*

According to the literature (Aburjai & Natsheh, 2003), since ancient times people have used *Olea europea* fruit and oil; the ancient Greeks used to bathe with olive oil. It has been used to moisturize dry skin, and as lip balm, shampoo, hand lotion, soap, massage oil and dandruff treatment (Bruneton, 1999). Olive oil contains fatty acids, triglycerides, tocopherols, squalene, carotenoids, volatile and flavor compounds. The extracts of olive fruits, leaves and stems show anti-inflammatory and active oxygen scavenging effects (Tehara & Hatchimaki, 2002).

The anti-inflammatory effect is exerted by both unsaponifiable and polar compounds (De la Puerta *et al*., 2000), while the free radical-scavenging effect of virgin olive oil is due to the presence of polyphenols (Perricone, 2001; Manna *et al*., 1999). It is applied topical to treat skin damage, such as contact dermatitis (particularly diaper dermatitis), atopic dermatitis, xerosis, rosacea, seborrhea, psoriasis, thermal and burns, other types of skin inflammation and aging (Perricone, 2001).

Literature

ABURJAI T., NATSHEH F.M. Plants used in cosmetics. *Phytoth Res*, **17**, 987-1000 (2003).

BRUNETON J. 1999. *Pharmacognosy, Phytochemistry, Medicinal Plants.* Lavoisier Publishing: Paris.

DE LA PUERTA R., MARTINEZ-DOMINGUEZ E., RUIZ-GUTIERREZ V. Effect of minor components of virgin olive oil on topical anti-inflammatory assays. *J Biosci*, **55**, 814-819 (2000).

PERRICONE N.V. Treatment of skin disorders with olive oil polyphenols. *PCT Int Appl*, **16**: WO0176579.

TEHARA T., HACHIMAKI H. Antiallergic cosmetic or topical compositions containing olive extracts. *Jpn Kokai Tokkyo Koho*, **11**: JP2002332238.

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