THE VALORIFICATION OF THERAPEUTIC POTENTIAL OF GREEN SEAWEEDS FROM THE AQUATIC BASINS OF THE ROMANIAN SEASIDE

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Introducere

- *Ulva Lactuca* - Green seaweed from the Romanian seashore
- Application fields
  - In alimentary fields
  - In medical research
  - In cosmetic field
  - In dietetic field
  - Algas bath

Tabel 1. Green,macrobiatics seawoods speading along Black Sea seashore.

Species	Sulina	Sutori	Mila 23	Mamaia	Vapsa	Olaul nou	Olaul vechi	Tuzla	Costin sat	Corbu vechi	Corbu nou	Mang vechi	Mang nou	Vama veche	Marin a - sat vechi
Chlorophyta															
Ulotrichacae															
Ulothrix pseudoflacca Mukka	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–
Cladophoraceae	–	–	–	–	–	–	–	–	–	–	–		–	–	–
Cladophora vindis Reinke	–	–	–	+	–	–	+	–	–	–	–		–	–	–
Ulvaceae															
Enteromorpha intestinalis (Batt.) J. Ag	–	–	–	–	–	–	–	–	–	–	–		–	–	+
E. compressa (L) Grev	–	–	–	+	–	–	–	+	–	–	–		–	–	+
E. flexuosa (Wulf.) Ag	–	–	+	+	+	+	+	–	–	+	+	+	+	+	+
E. intestinalis (L.) Link	–	–	+	+	+	+	+	+	–	+	+	+	+	+	+
E. Linza (L) J. Ag	–	–	+	+	+	+	+	+	+	+	+	+	+	+	+
E. Ringiana J. Ag	–	–	+	+	–	–	–	–	–	–	–		–	–	–
E. Prolifera (O. Müll.) J. Ag	–	–	+	–	+	–	–	–	–	+	–		+	+	+
E. Torta (Reinke) Reinb.	–	–	+	+	–	–	–	–	–	–	–		–	–	–
Ulva lactuca L.	–	–	–	+	+	–	–	–	–	+	+	+	+	+	–
Ulva Rigida Ag															+

ULVA LACTUCA –Green seawood from the Romanian seashore

General aspect

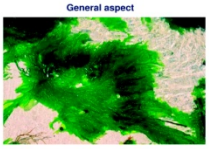

Fig.1. General aspect of Green seawood

Morfologic and citologic characters from Ulva Lactuca

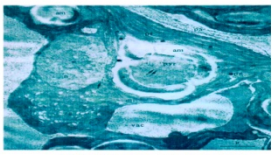

Fig. 2. Celular structure of ULVA LACTUCĂ

Reproduction.

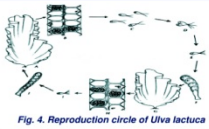

Fig. 4. Reproduction circle of Ulva lactuca

A-Mature gametophyl, B –Marginal segment from the thal, C- isogamets,D- Isogamets merge, E-Zigot, F-Young filament of sporophyt, G-Mature sporophyt, H-Thal marginal, 1-zoospors ,I-Young gametophyl filament.

Table 2.
Exemple: "Clarins" products that contain Ulva Lactuca extract

Sveltonyl	Used for body care
Masvelt cold creme	Used for body care
Super hydratant multi-confort fluide	Used for skin care
Super hydratant multi-confort SPF15 fluide	Used for skin care
Normalisant masks	Used for skin care
Other products like vial (day and night creme for normal, dry or oilly skin, anti-wrinkle creme, solar cremes;emulsions; milk,lotions, masks,gels). Other products for bath like: dry seaweeds in envelopes; powders, pastas, liquids, crems for massage and loose weight and solar shower gels and loose weight gels	Used for skin care

Experimental section

- ***Chemical structure in Ulva Lactuca***
  - Ingathering of a seaweed: *Ulva Lactuca*
  - The determination of the composition
  - Hashing and drying
  - Burning
  - **Dry distilation**
- **Pharmacologycal activity**

Chemical composition in Ulva Lactuca

Pigmy content in Ulvaceae

Chlorophyll and carotenoids content in Ulva Rigida

Chlorophyll a and b raport 4 :3	0,77

Table 4. Obtaind values for the vitamins in Ulva Lactuca

Type of vitamin	Number of analised sample	Obtained values
Tiamină (B1)	4	0,68 µg/g
Riboflavină (B_2)	4	13,8 µg/g
Piridoxină (B_6)	4	2 µg/g
Niacină (PP)	4	36,2 µg/g
Acid ascorbic	5	35 mg/100g

Table 5. Haloids content in Ulva Rigida

Ulva Rigida species	
Lemn at 1050c	12,3
Ashes	23,4
Chlorine mg/g	13,6
Bromine mg/g	0,169
Iodine mg/g	0,033

Chemical composition in Ulva Lactuca

Table 6. Metals content reported to dry material at 105C from Ulva Rigida

Loss 105°c %	12,3
Ashes %	23,4
Insoluble residue in HNO_3 %	0,7
Na mg/g	3,8+/-0,2
K mg/g	16,6+/-0,3
Ca mg/g	10,6+/-0,6
Mg mg/g	38,1+/-0,9
Cr	1,2
Mn	17,0+/-0,2
Fe	77,0+/-1,3

Co	4,6
Ni	3,5
Cu	9,4+/-0,5
Zn	32,8+/-0,5
Sr	85+/-1
Mo	22
Pb	9,4
Loss 105°c %	12,3
Ashes %	23,4

Pharmacologycal activity

- **Experimental.**
- **Antiinflamatory action.**
- **Microbial activity.**

Table 7. Local antiinflamatory activity of 3-O-β-D-glucopyranosyl clerosterol component

Dose (µg/ureche)	Edema (mg) Average- SE	Edema Inhibition (%)
Control 5 µg derivate phorbol	15.1±1.4	
500	10.5±0.8	30.46
1000	$5.7±0.4^{b1b}$	62.25
1500	$4.2±0.3^{b1b}$	72.18
Indometacine (1000 µg/ureche)	$0.9±0.8^{a}$	94.03

Table 8. The inhibitory response of 3-O-β-D-glucopyranosyl clerosterol on tested microbes comparing with microbien standard and fungicide substances.

	Diameter of inhibition zone (mm)				
	Isolated steroid (µg/disc)			Ampicilin 200 µg/disc	Canestin 100 µg/disc
Microorganismes	50	100	200		
Bacterias					
Streptococcus lactus (G+)	10	25	25	25	
Bacil subtilis (G+)	–	12	15	12	
Pseudomonas pufida (G-)	–	10	12	12	
E. coli (G-)	–	10	14	25	
Fungess					
Fusarium oxysporium	8	14	17		14
Rhizoctonia solani	–	7	12		28
Helminthsporium turicum	–	–	10		25
Penicilina digitatum	–	10	12		18
Grega					
Saccharomyces cerevisiae	12	16	17		15
Kluveromyces lactis	10	11	14		25

Conclusion

*Biomase marine alga represented by green weeds is a very important naturale source for terapeutical chemistry because of mineral, vitamines and sterols content .

*Green algas can be used in nutrition, but mostly in treating inflamatory and microbiene affections because of their antiinflamatory, antifungeis and antimicobiene action.

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