NEW "in vitro" STUDY

liboost®

Improving sexual life

A NOVEL DAMIANA EXTRACT FOR SEXUAL LIFE IMPROVEMENT

PHARMACTIVE
BIOTECH PRODUCTS

a natural difference

liboost®

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liboost® CHARACTERISTICS

- Phyto-therapeutic product made of 100 % natural Damiana leaves extract.
- 100 % traceability. Premium quality *Turnera diffusa* W. raw material from Mexico. Manufactured in Spain.
- Bioactive compounds analyzed by High Performance Liquid Chromatography (HPLC) : >1,5% Flavonoids (dry basis).
- 100 % stable, 3 years shelf life when stored in the dark and in dry condition at room temperature.
- Non-irradiated, non-GMO product.
- No significant side effects or drug interaction have been reported.
- Multiple galenic applications.
- Designed to enhance sexual health naturally.

liboost® MECHANISM OF ACTION

liboost® is a sexual enhancer which causes excitement in the genital area thereby **increasing sexual appetite**. This pro-sexual effect of the extract is attributed to the mechanism of action of the bioflavonoids, an invigorating active compound present in Damiana leaves.

Damiana leaves directly affect sexual functions, by increasing **vasorelaxation** of cavernosum smooth muscle cells as the **NO-cGMP pathway** is activated or as there is an interaction with central pathways participating in libido or sexual arousal.

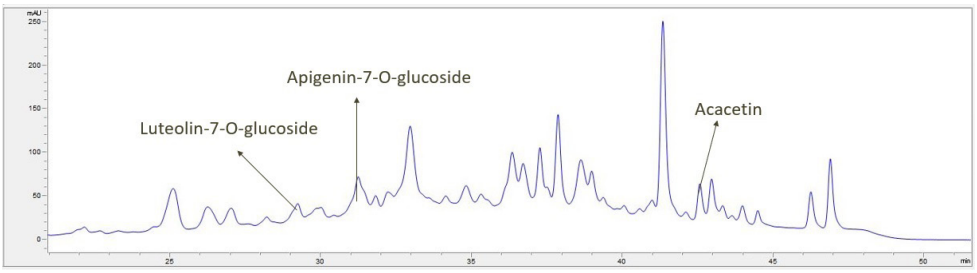
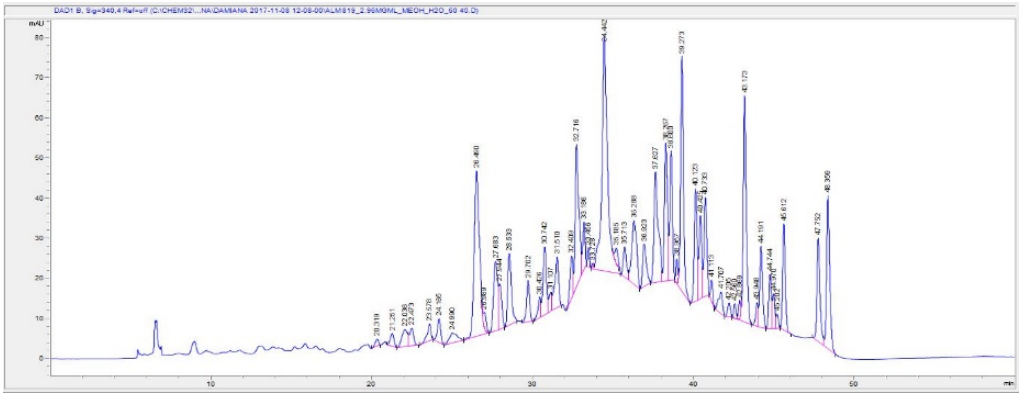


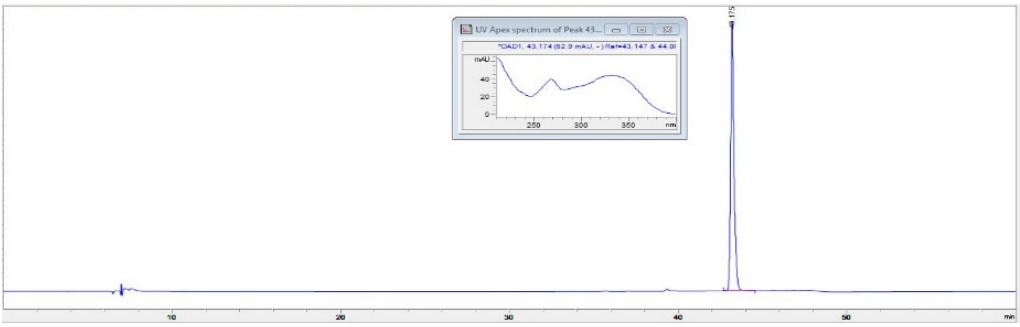
Figure 1. HPLC chromatogram of *liboost®* registered at 340nm

liboost® HPLC CHARACTERIZATION

Chromatographic comparison by HPLC between ***liboost®*** and other "Damiana" extracts on the market:



Chromatogram 1. ***Liboost®***



Chromatogram 2. Other "Damiana**" extract in the market**

Liboost® chromatogram (Chromatogram 1) corresponds to a typical chromatogram of *Turnera diffusa* leaves.

There are many adulterated "Damiana" extracts on the market (Chromatogram 2), made from cheaper sources such as *Sophora japonica* (enriched with rutin).

Liboost® is the first Damiana commercial extract, standardized to flavonoids by HPLC. It induces the release of nitric oxide in HUVEC cells, which in turn is related to vasodilation, thereby showing potential preventive effect on erectile dysfunction.

» First "in vitro" study performed with a 100 % natural *Turnera diffusa* W. extract, standardized to flavonoids by HPLC

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liboost® "in vitro" STUDY RESULTS

The main objective of this research work was to study the release of nitric oxide from HUVEC endothelial cells in vitro in the presence of ***liboost®***, the first commercial Damiana (*Turnera diffusa* W.) leaves extract standardized to characteristic Damiana bioflavonoids by HPLC (High Performance Liquid Chromatography).

Table 1. ***Liboost®*** flavonoids composition

HPLC				Spectrophotometer
LUTEOLIN-7-O-GLUCOSIDE	APIGENIN-7-O-GLUCOSIDE	ACACETIN	TOTAL FLAVONOIDS	TOTAL POLYPHENOLS BY FOLIN CIOCALTEU
mg/g	mg/g	mg/g	(as rutin, %)	(as gallic acid, %)
0.15±0.01	0.25±0.02	0.15±0.01	1.52±0.02	1.41±0.03

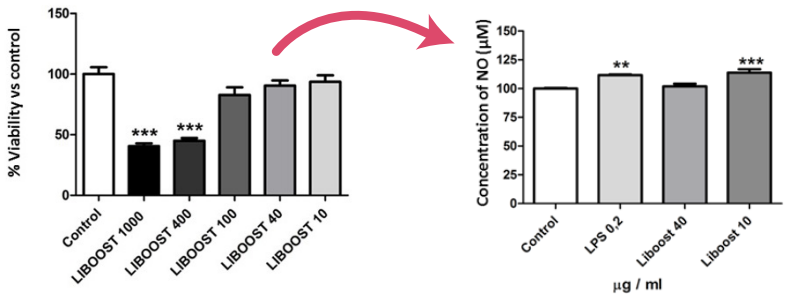

Figure 2. Percentage of cell viability and Concentration of NO

The release of nitric oxide in HUVEC cells was measured after treatment with ***liboost®*** using those concentrations that did not cause cell death, 40 and 10 µg/ml. Treatment of HUVEC cells with ***liboost®*** compound at 10 µg/ml increased the concentration of nitric oxide with respect to the control.

Therefore, in vitro studies suggest the use of ***liboost®*** at a concentration of 10 µg/ml because, in addition to not showing a cytotoxic effect, it can promote the release of nitric oxide, which plays a major role in the vasodilation process.

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liboost® RECOMMENDED DOSAGE

Recommended daily dosage is 300 mg.

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