Branded Ingredients

MOODREAL®

A tested Selective Serotonin Reuptake Inhibitor for mood and mild depression (*Crocus sativus L., Saffron*)

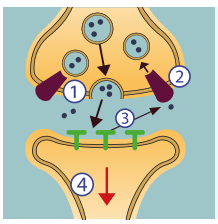
Why MOODREAL®?

- More than 5% of the world population has depression.
- According to the World Health Organization (WHO), depression is the leading cause of disability worldwide. *
- More women are affected by depression than men. *
- Each year, more than 700,000 people die from suicide because of depression. *
- Depression is generally caused by hormonal changes or shifts in brain neurotransmitters such as serotonin. **

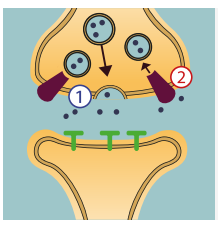
Mechanism Of Action

Selective Serotonin Re-uptake Inhibitors (SSRI)

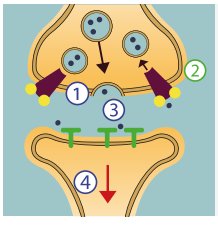
- Serotonin (5HT) is a neurotransmitter that influences mood behaviour.
- Releasing more serotonin in the brain induces mood well-being in most depressed subjects.
- In most depressed people, serotonin is re-uptaked the most after its release. Thus, barely delivering its effects.
- Inhibiting serotonin re-uptake by Selective Serotonin Re-uptake Inhibitors (SSRI) as Imipramine (TOFRANIL®) and Fluoxetine (PROZAC®) is a key mechanism of action to relieve depression in modern medicine.



Non Depressed –
Serotonin is:
1. Released
2. Reuptaked SLIGHTLY
3. Binding its receptors
4. Making effect



Depressed –
Serotonin is:
1. Released
2. Reuptaked MOSTLY
3. **No** Binding its receptors
4. **No** Making effect

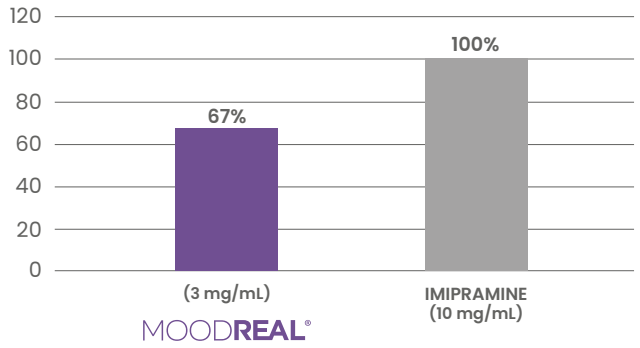


Depressed SSRI treatment –
Serotonin is:
1. Released
2. Reuptaked IS INHIBITED
3. Binding its receptors
4. Making effects

In Vitro Study

- The purpose of this study was to investigate the mechanism of MOOD**REAL®** in a serotonin uptake assay on rat synaptosomes to evaluate Serotonin Re-uptake activity.
- The experiment was chosen because *in vitro* tests on rat synaptosomes are the reference to validate selective serotonin re-uptake activity.
- Imipramine was chosen as the standard since it is a Selective Serotonin Re-uptake Inhibitor, and it is used as the reference compound to inhibit 100% of serotonin re-uptake.

***In vitro* test on rats brain synaptosomes (used for antidepressants)**



Assay	Origin	Tracer	Incubation	Reaction Product	Method of Detection
Amine transporters					
5-HT uptake	rat brain Synaptosomes	[^{3}H] 5-HT (0.2 µCi/ml)	15 min 37 °C	[^{3}H] 5-HT incorporation into synaptosomes	Scintillation counting

Study Results

- MOOD**REAL®** at a concentration of 3 mg/mL demonstrated an inhibition of serotonin re-uptake equivalent to 67% of the inhibition caused by Imipramine (TOFRANIL®) at 10 mg/mL, a "golden standard" selective serotonin reuptake inhibitor (SSRI).
- The >50% Serotonin re-uptake in this test demonstrates a significant effect of selective serotonin re-uptake inhibition in this validated model to test anti depressive medication effects.
- Thus, this study demonstrates the significant activity of MOOD**REAL®** in an *in vitro* study even when compared to anti depressive medication.

info@natacgroup.com

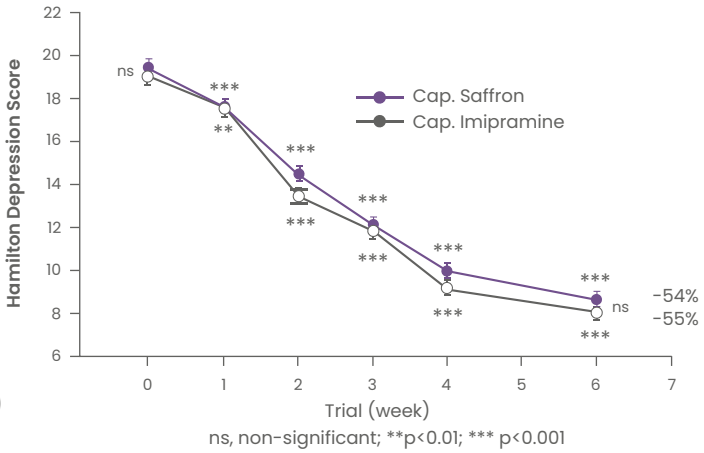
Substantial Equivalence

Imipramine vs Saffron - Clinical Trial (double blind, randomised)

Parameters
- 30 adults
- 6 weeks
- Hamilton Depression scoring > 18

Groups
- A: 10 mgX3/d saffron ext.>2% safranal
- B: 100 mg/d Imipramine

Results
- As efficient as Imipramine (TOFRANIL®) (***p<0.001)



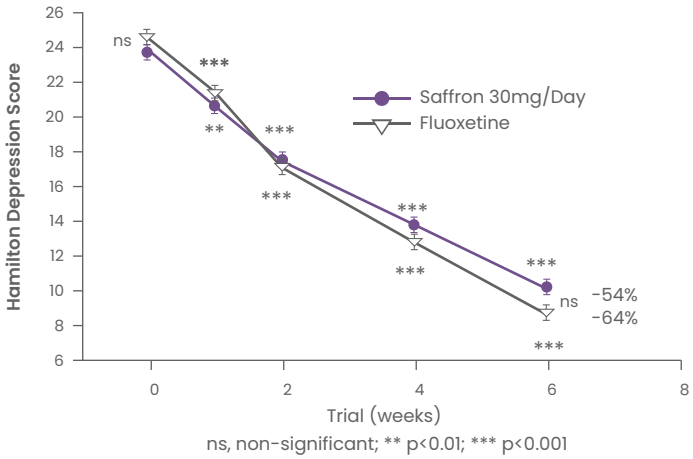
ns, non-significant; **p<0.01; *** p<0.001

Fluoxetine vs Saffron - Clinical Trial (double blind, randomised)

Parameters
- 40 adults
- 6 weeks
- Hamilton Depression scoring > 18

Groups
- A: 15 mgX2/d saffron ext.>2% safranal
- B: 20 mg/d Fluoxetine

Results
- As efficient as Fluoxetine (PROZAC®) (***p<0.001)



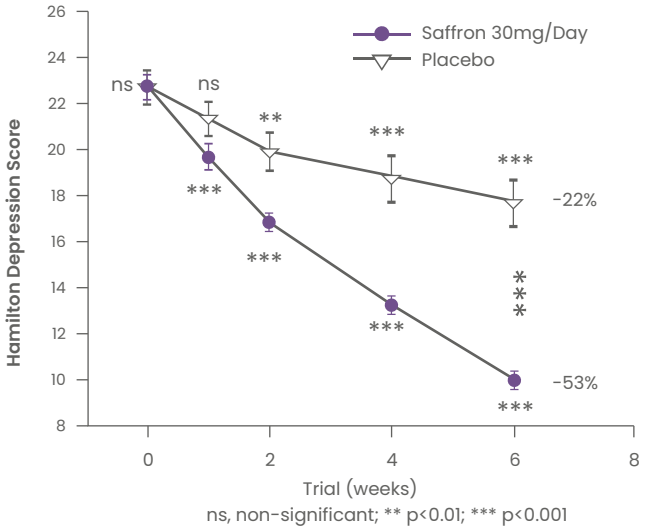
ns, non-significant; ** p<0.01; *** p<0.001

Placebo vs Saffron – Clinical Trial (double blind, randomised)

Parameters
- 40 adults
- 6 weeks
- Hamilton Depression scoring > 18

Groups
- A: 15 mgX2/d saffron ext.>2% safranal
- B: placebo

Results
- More efficient than placebo (***p<0.001)



ns, non-significant; ** p<0.01; *** p<0.001

MOODREAL®

Applications

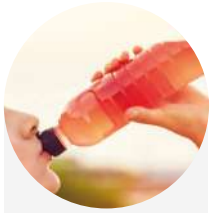
Supplements

Bars

Confectionary

Powders

Shakes


Beverages

Meal Replacements

Functional Foods

Snack Diet Products

Key Points

Contributes to emotional balance

Helps maintain a positive mood

Helps support relaxation

Mechanism of action demonstrated:
67% Serotonin reuptake inhibition compared to imipramine

Rigorous quality control & ISO/Kosher/Halal

Sources:
World Health Organisation* / Clínica Universidad de Navarra**
Akhondzadeh S. and Al., 2004 . BMC Complement Al. Med Vol 4:12
Noorbala AA and Al., 2005 J Ethnormacol Vol97, 2:281-4
Akhondzadeh S. and Al., 2005, Phytother Res Vol 19, 2:148-51

Americas
2825 E Cottonwood Parkway,
Suite 500 Salt Lake City, UT
84121 • USA

Europe (Headquarters)
Avenida Rita Levi Montalcini 14
28906 Getafe • Madrid (Spain)
(+34) 918 276 470

APAC
3 Shenton Way, #08-04
Shenton House • Singapore
068805

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