

# PINETonina®

**PROMOTES  
RELAXATION  
THROUGH THE  
MODULATION OF  
THE LEVELS OF  
GLUTAMATE**

**Pinetonia®** is a phytocomplex that promotes the balance of emotions, decreasing the symptoms of stress and improving the quality of sleep.

With its technology in nasal spray, **Pinetonia®** accesses regions of nervous central system modulating activities in excitatory neurotransmitters.

## Advantages

QUICK EFFECT BY  
USE VIA NASAL  
MUCOUS MEMBRANE

IMPROVES QUALITY  
OF SLEEP, WITHOUT  
CAUSING DAY  
SOMNOLENCE OR  
SEDATION

MODULES THE  
CONCENTRATION OF  
GLUTAMATE

PROMOTES THE  
RELAXATION OF  
BODY AND MIND

100% NATURAL  
SOURCES, THERE'S  
NO TOXICITY

**Dose Indicated: Dilution in 30 to 50%.  
One jet in each nostril, once or twice a day.**



**infinity®**  
pharma

# Mechanism of Action

The inhibitory and excitatory neurotransmitters regulate a series of processes in behavior, including sleep, learning, memory and sensation of ache.

The phytocomplex **Pinetonina®**, through the nasal mucous membrane, reaches regions of the central nervous system able to control the levels in intracellular calcium, what consequently causes a reduction of two levels in glutamate.

Being glutamate the main excitatory neurotransmitter of the central nervous system, there are proved benefits at the control of the states of insomnia, stress, and anxiety.

## Clinical Results

### EVALUATION OF SALIVARY CORTISOL

Salive collection was performed in 30 volunteers, after using 15 days of **Pinetonina®**. The evaluated groups were divided in group control (without application), group saline (placebo) and group **Pinetonina®**.



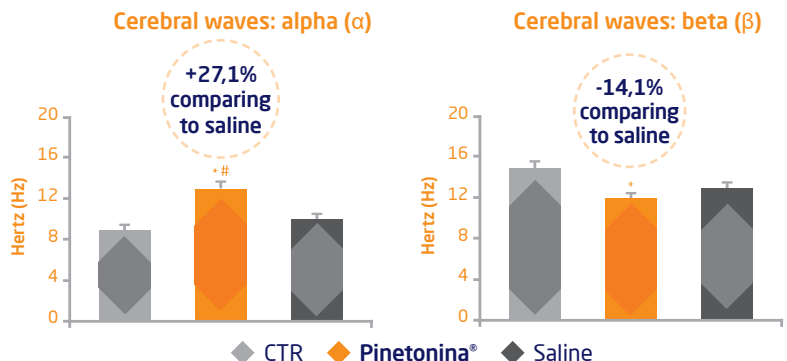
REDUCTION IN 12.8% \* OF THE LEVELS IN CORTISOL IN ONLY 15 DAYS!  
\*COMPARED TO SALINE (PLACEBO)

The chart shows the significant reduction ( $P < 0.05$ ) in levels of salivary cortisol in the group that has received **Pinetonina®**. The groups that were treated with saline (placebo), at the same scheme, haven't presented any significant reduction.

### ELETRORENCEPHALOGRAM EVALUATION

To get the waves registered in the electroencephalogram, 30 volunteers were evaluated, in ages between 18 and 35, divided in three groups: control (without application), saline and **Pinetonina®**.

The evaluation of electroencephalogram of the volunteers who received **Pinetonina®** and saline, besides the ones that haven't received any type of product, showed that the use of **Pinetonina®** influenced in the pattern of waves alpha ( $\alpha$ ) and waves beta ( $\beta$ ). Volunteers treated with **Pinetonina®** had a significant increase ( $P < 0.05$ ) in frequency (Hz) of waves alpha, that are waves related to relaxation. Also, the volunteers who received **Pinetonina®** presented a reduction in frequency of waves beta, waves related to alert, which is also important for the effective cognitive operation during all day, and can bring stress, anxiety and restlessness.



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BIBLIOGRAPHIC REFERENCES:

