LIFTMODE

LIFTMODE
47 W. Polk St. STE 100-241
Chicago, IL 60605

liftmode@liftmode.com
www.liftmode.com

CERTIFICATE OF ANALYSIS

Phenibut HCL

(β-phenyl-γ-aminobutyric acid HCl)

Material Lot #: 20170601
Country of Origin: China

Manufacture Date: 05/02/2017
Expiration Date: 05/02/2020

Analysis	Claim	Result
Phenibut HCL	≥99.5%	99.74%

Test	Specification	Result
Appearance	Almost White Crystal	Complies
Related Substances	≤0.1	Complies
Clarity of Solution	1#	Complies
Iron %	≤0.005%	Complies
Melting Point	194.0-202.0°C	195.6-196.8°C
pH	2.3-2.7	2.47
Loss on Drying	≤0.5%	0.05%
Residue on Ignition	≤0.1%	0.06%
Mesh Size	15-30 Mesh	Conforms
Heavy Metals (µg/g)	≤10 ppm	Conforms

Phenibut HCl should be stored at or below room temperature in a tightly sealed durable container.
Phenibut HCl should be protected from excess heat, direct sunlight, excess humidity and moisture.
Phenibut HCl has a stable shelf life of 3 years from the date of manufacture when properly stored.

LIFTMODE

LIFTMODE
47 W. Polk St. STE 100-241
Chicago, IL 60605

liftmode@liftmode.com
www.liftmode.com

CERTIFICATE OF ANALYSIS

Product Name	Phenibut HCl	Product Lot #	20170601
Report Date	11/02/2017	Lab #	9367

Description	Test Method	Results
Identification	1H-NMR	Conforms
Assay	HPLC	101.0%
Lead	ICP-MS USP<730>	0.033ppm
Arsenic	ICP-MS USP<730>	<0.001ppm
Cadmium	ICP-MS USP<730>	<0.001ppm
Mercury	ICP-MS USP<730>	0.002ppm

Peter Yoho PhD
QA Auditor

11/02/2017
Date
11/2/17

Phenibut HCl

- **Reduces stress**
- **Promotes healthy sleep**
- **Creates a feeling of well-being**
- **Phenibut is a nootropic substance that acts as a GABA agonist to treat stress and anxiety and promote restful sleep.**
- **The primary effects of phenibut use include pain-reduction, promoting calmness and a feeling of well-being, reduction of stress and promotion of restful sleep at higher doses.**
- **Recommended dosage of phenibut is 500-1500mg per day, in two to three separate servings, depending on the desired effect.**
- **Mild side effects may include dizziness and lethargy with higher doses and withdrawal symptoms are rare but can occur after prolonged use.**

Background

Phenibut, also known as β-Phenyl-γ-aminobutyric acid or noofen, has been used significantly in Russia since the 1960s as a nootropic supplement for treating anxiety and stress, for the promotion of a feeling of well-being and to promote good sleep. GABA is the primary inhibitory neurotransmitter molecule in the brain, and is divided into three groups: GABA-A, –B, and –C. Each GABA group has different functions. Targeting GABA-A subtypes produces sedative, anxiolytic, muscle-relaxing, and alcohol-potentiating effects as well as nootropic effects (GABA-A subtype 5). Targeting GABA-B subtypes reduces pain signals and has positive effects on memory, learning and mood. Phenibut (or fenibut / phenybut) acts primarily as a GABA-B agonist and also plays a role in activating some GABA-A receptors and is nonselective in the two. Its use as a GABA agonist is important because it is not possible to supplement with GABA alone due to the chemical structures of the molecules. The phenyl group on phenibut (note the name!) allows the chemical to cross the blood-brain barrier, while GABA itself cannot do this. It should be noted that other commonly used substances are also GABA agonists and these include alcohol as well as other commonly prescribed anti anxiety and sleep-inducing drugs.[1]

Phenibut effects/benefits

GABA transmitters are found throughout the CNS and specifically in regions of the spinal cord that are known to be associated with pain. The GABA neurotransmitters are also found outside of the spinal cord and in areas of the CNS that are known to coordinate the response to and perception of pain. They are inhibitory molecules and are able to regulate the amount of information that reaches the CNS. In a very simplified explanation, GABA transmitters are able to modulate the perception of pain and since they are inhibitory, a greater concentration of GABA will inhibit the perception of pain to an extent. Since phenibut acts as a GABA agonist, it is also able to reduce pain to an extent, along with creating other effects that include mood-lift and euphoria associated with anxiolytics.[2]

It is important to remember the different GABA-receptors and subtypes and that they all have different effects on the human body. While GABA-B agonists have a very strong potential to work as pain and anxiety relief, the problem is in dose and their being unselective in the different GABA-receptor groups. In most cases of tried chemicals, when the dose is high enough to provide pain-relief, other effects start setting in like sedation. This is because of interactions with other GABA-receptor groups.

One benefit of phenibut is that the dose can be altered according to what effect is desired. For simple anxiety relief and mood lift a lower dose is used. When the dose is increased, the chemical can become a hypnotic, ie can be used as a sedative and for treatment of sleep apnea. This is because of the nature of GABA molecule. As explained before, GABA is an inhibitory molecule and is able to 'filter out' information from the CNS. This is why it acts as a regulator for the perception of pain – it is able to stop too much information from entering our brains and allows us to only feel the necessary amount of pain to react. Often when we lie awake at night we are thinking about a lot of things and feeling a lot of things in our bodies and are generally restless. Phenibut is able to block out these perceptions and act as a sedative to improve sleep.[3]

A lot of research has gone into the use of phenibut as a neuroprotector and it has been found to be able to protect the brain from stress, especially when the brain is deprived of oxygen. This can occur during drowning, injury or during extreme physical exertion and can result in overheating.

Phenibut has also been found to have profound cardioprotective effects which include protecting the heart from injury.

"Scientists have concluded from these studies that Phenibut results in higher cardiac contraction and relaxation rates, higher left-ventricular pressure during functional tests, and increased indexes of oxidative phosphorylation."[4]

Phenibut recommended usage

The recommended dose of phenibut is 500-1500mg per day, in two to three separate servings. A lower dose should result in more of a mood-lift, anxiety relief and euphoric effect whereas a higher dose it acts more as a sedative and results in better sleep. It is not recommended to exceed the daily dose as overdosing is possible. Also take note that tolerance can build up through continuous use but it is still not recommended to exceed the daily recommended dose.

Phenibut side effects and warnings

Phenibut is a great substance with multiple calming and mood-enhancing effects and, as with all GABA agonists, it can have some side effects.

Mild side effects can include gastrointestinal issues, dizziness, tiredness, memory reduction and lethargy and these are common with the use of all GABA agonists.[1]

Withdrawal effects from phenibut use have also been reported on rare occasions. For this reason it is recommended to reduce dosage of phenibut before stopping entirely. Withdrawal effects can include negative thoughts, lethargy and irritability. There is a reported case of a 25-year old man in Russia who became hospitalised for psychosis from withdrawal after long high-dose use of phenibut.[5] The man was dosing at 20grams phenibut per day, which is a huge amount and creates massive risks of overdosing. The symptoms he experienced are not uncommon in alcohol-dependant withdrawal as well as withdrawal from Baclofen, GHB, benzodiazepine which are also GABA agonists.

"Phenibut **should NOT** be taken with **benzodiazepenes or alcohol** as it may result in respiratory depression that may lead to unconsciousness or even death".

References

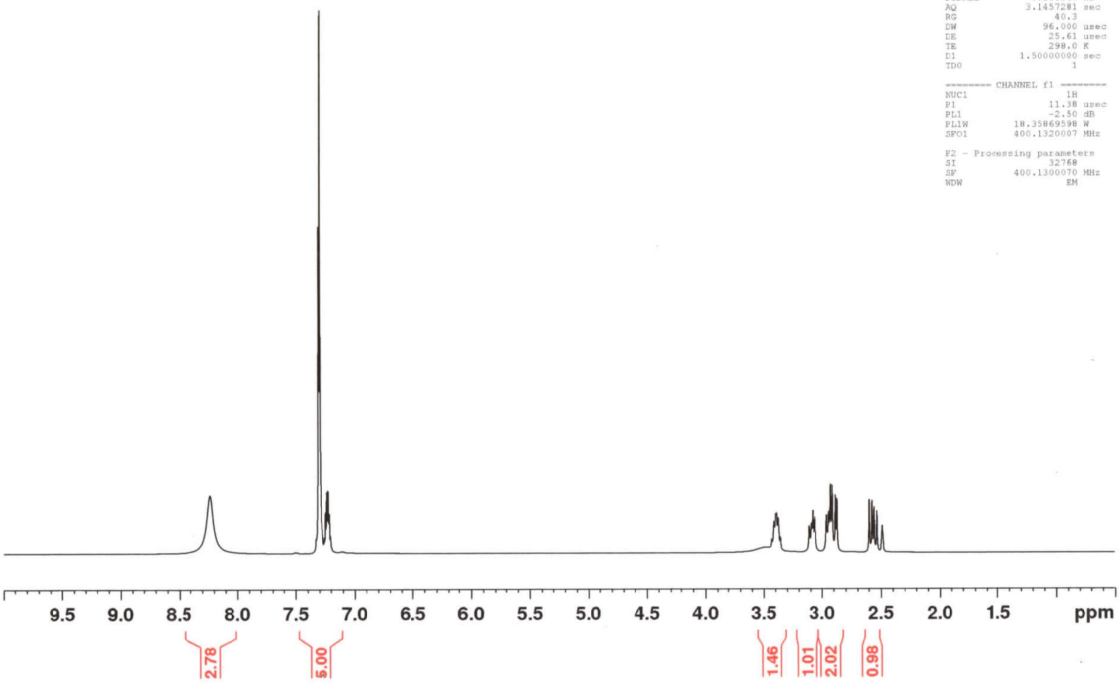
[1] **"Phenibut (β-Phenyl-GABA): A Tranquilizer and Nootropic Drug"** Izondo Lapin, CNS Drug Reviews, Volume 7, Issue 4, pages 471–481, December 2001
[2] **"The role of GABA in the mediation and perception of pain"** Enna SJ1, McCarson KE, PubMed, Adv Pharmacol. 2006;54:1-27.

[3] **"Take Phenibut For an Alternative Source of Anxiety Relief"**, Nootropic Nerd, online article, April 3 2014

[4] **"The Science of Phenibut"**, Phenibut for Anxiety, online article, 2012
[5] **"Phenibut, the Appearance of Another Potentially Dangerous Product in the United States"** Charles W. O'Connell, MD, Kevin B. Schneir, MD, James Q. Hwang, MD, MPH, E. Lee Cantrell, PharmD, The American Journal of Medicine, August 2014

[6] **"Psychotic symptoms during phenibut [beta-phenyl-gamma-aminobutyric acid] withdrawal"**, Lenke Hägberg, Istvan Szabó, and Jean Rusa, Journal of Substance Use, 2011; Vol. 16, No. 4 , Pages 330-338

1H NMR of Phenibut HCl
in DMSO
Lot #9367
Colmaric Analtyical
400 MHz
10-27-17




```
Current Data Parameters
NAME      Oct27-2017-Colmaric
EXPNO                      1
PROCNO                     1

F2 - Acquisition Parameters
Date_              20171027
Time                 15.09
INSTRUM              spect
PROBHD   5 mm PABBO BB-
PULPROG              zg30
TD                  32768
SOLVENT              DMSO
NS                     32
DS                      0
SWH              5208.333 Hz
FIDRES           0.158946 Hz
AQ               3.1457281 sec
RG                    40.3
DW                96.000 usec
DE                25.61 usec
TE                298.0 K
D1             1.50000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                 11.38 usec
PL1                -2.50 dB
PL1W         18.35869598 W
SFO1         400.1320007 MHz

F2 - Processing parameters
SI                  32768
SF           400.1300070 MHz
WDW                    EM
```