

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



newmind@newmind.com
www.newmind.com

CERTIFICATE OF ANALYSIS

Adrafinil

(2-(benzhydrylsulfinyl)acetohydroxamic acid)

Material Lot#	170717	Manufacture Date:	07/17/17
Country of Origin:	China	Retesting Date:	07/17/20

Analysis	Claim	Result
Assay	≥98%	99.39%

Test	Claim	Result
Appearance	Light red to off white crystalline powder	Complies
Solubility	Soluble in methanol, slightly soluble in ethyl-acetate & methylene chloride, practically insoluble in water	Complies
Identification	IR & HPLC matches standard	Complies

Impurity Test	Claim	Result
Melting Point	148°~150°C	Complies
Total Impurities	≤2.0%	0.30%
Identification	Positive	Complies
Any Single Impurity	≤0.5%	0.21%
Loss on Drying	≤0.5%	0.27%
Residue on Ignition	≤0.1%	0.05%
Heavy Metals	≤20ppm	Complies
Purity (HPCL)	≥98.0%	99.39%

Conforms to Standard

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



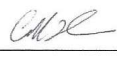
NEWMIND
47 W. Polk St. STE 100-241
Chicago, IL 60605

newmind@newmind.com
www.newmind.com

CERTIFICATE OF ANALYSIS

Product Name	Adrafinil	Client Lot Number	170717
Report Date	10/24/17	Laboratory #	9335

Test	Method	Result
Identification	Proton NMR	Conforms
Assay	HPLC	98.6%
Lead	ICP-MS USP <730>	0.014 ppm
Arsenic	ICP-MS USP <730>	0.154 ppm
Cadmium	ICP-MS USP <730>	<0.001 ppm
Mercury	ICP-MS USP <730>	<0.001 ppm

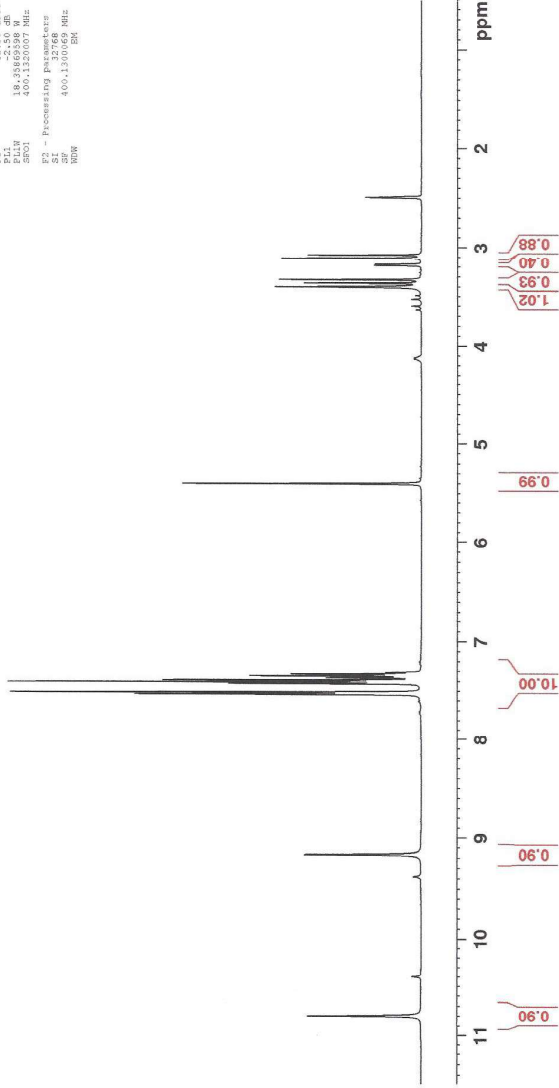
Collin Thomas 
Laboratory Manager

10/24/2017 
Date

The result(s) stated in this report is only for the sample submitted. This report may not be reproduced in whole or in part, nor may any reference be made to the work, the result, or the company in any news release, public announcements or advertising without our prior written consent.

1H NMR of adrafinil
in DMSO
Lot # 9335
Colmaric Analytical
400 MHz
10-20-17

Current Data Parameters
NAME: C0228-2017-scientific
EXPNO: 1
PROCNO: 1
F2 - Acquisition Parameters
Date_ : 20171028
Time: 20171028
INSTRUM: spect
PROBHD: 5 mm PABBO-400
PULPROG: zgpg30
TD: 32768
SOLVENT: DMSO
NS: 32
DS: 4
SWH: 5208.333 Hz
FIDRES: 0.145846 Hz
AQ: 0.0085
RG: 327.68
GB: 0
PC: 96.57 sec
CDE: 25.64 sec
CEN: 299.613 MHz
D1: 1.5000000 sec
TD0: 1
===== CHANNEL f1 =====
NUC1: 1H
P1: 12.00
PL1: 0.00
PL12: 18.00
SFO1: 400.1460000 MHz
===== CHANNEL f2 =====
F2 - Processing parameters
SI: 32768
SF: 400.1460000 MHz
WDW: EM



Adrafinil (CRL-40028, Olmifon)

Precaution and Disclaimer:
This Material is Sold For Research Use Only. Terms of Sale Apply.
Not for Human Consumption, nor Medical, Veterinary, or Household Uses.

Chemical Information:

CAS Number: 63547-13-7

Purity: ≥98%

Molecular Weight: 289.35 g/mol

Melting Point: 150-160°C (dec.)

Molecular Formula: C₁₈H₁₉NO₅

Synonyms: Olmifon, CRL 40028, 63547-13-7, 2-(Benzhydrylsulfinyl)acetoxyhydroxamic acid, 2-[(Diphenylmethyl)sulfinyl]-N-hydroxyacetanide, 2-[(Diphenylmethyl)sulfinyl]acetoxyhydroxamic acid
3033226

PubChem CID:

SMILES: O=S(C(c1ccccc1)c2ccccc2)CC(=O)NC

Technical Information:

Application: Adrafinil is an eugenolic agent with wakefulness promoting effects in vivo.
Appearance: Pale Pink, Light Pink or Pink Powder
Physical State: Solid
Solubility: Slightly soluble in water. Soluble in methanol and DMSO (>15 mg/mL).
Storage: Store at room temperature or cooler, in a sealed airtight container, protected from heat, light and humidity.
Stability: Stable for at least two years when stored as above.

Biochemical Activity:

Adrafinil is the first discovered eugenolic (eugregonic) agent, founding a family of alertness- and wakefulness- promoting compounds that subsequently yielded modafinil¹. It is used in neuroscience studies and in research related to novel stimulants with reduced side effects. Unlike previously discovered stimulants, Adrafinil produces behavioral activation without typical stimulant side effects such as induction of stereotypy, anxiogenic properties, or addictive properties¹.

Adrafinil rescues peak blood concentrations within one hour, and has an approximate elimination half life of one hour, with perital metabolism into Modafinil.² In typical human clinical studies, Adrafinil has been administered in amounts of 6 mg/kg/d to 12 mg/kg/d.¹

Adrafinil has an oral LD₅₀ of approximately 3400 mg/kg in rats, and does not exhibit mutagenic, peri- or postnatal effects, or teratological effects in chronic high dose studies with dogs at: up to 200 mg/kg/d over 2 months.¹

Some limited research in animal models also indicates that Adrafinil may produce significant improvement in learning.³

References:

- 1. Milgram, D. Callahan H, Sivak C. Adrafinil- A Novel Vigilance Promoting Agent. CNS Pharmacol 2016.
- 2. Meachon G, Clenet M, Lathuere D, Rousselet, F. Pharmacokinetics of adrafinil (adra) and one of its metabolites after single oral dose. IUPHAR 9th International Congress of Pharmacology, London: MacMillan Press, 1984.
- 3. Milgram VM, et al. Oral administration of adrafinil improves discrimination learning in aged beagle dogs. Pharmacol Biochem Behav. 2000 Jun;66(2):301-5.

Precaution and Disclaimer:
This Material is Sold For Research Use Only. Terms of Sale Apply.
Not for Human Consumption, nor Medical, Veterinary, or Household Uses.