



CERTIFICATE OF ANALYSIS

PRODUCT: **Berberine . hemisulfate**
[Natural yellow 18; 5,6-Dihydro-9,10-dimethoxy-benzo [g]-1,3-benzodioxolo[5,6-a]quinolizinium]
C₂₀H₁₈NO₄ . 0.5 SO₄, M.W. 336.4 . 48.0, CAS#[633-66-9],
M.I.: 13: 1157

PRODUCT NUMBER: B-1201

LOT NUMBER: A8724

APPEARANCE: Yellow powder

IDENTITY: Identical to standard reference (determined by IR)

WATER CONTENT: 11.2% (by Karl Fischer)

PURITY (TLC): >99.0%

SOLUBILITY: 50 mg/ml soluble in methanol:water (2:1)

OTHER DATA: The alkaloid berberine exhibits relatively weak antibiotic properties, apparently because of its efflux by multidrug resistance pumps. It was described that the antimicrobial action of berberine is potentiated by 5'-methoxyhydnocarpin, a multidrug pump inhibitor. Berberine lowers cholesterol levels through a mechanism different from that of statins, which are the most widely used drugs for hypercholesterolemia and function through inhibiting HMG-

A.G. Scientific, Inc.

6450 Lusk Blvd. Suite E102
SAN DIEGO, CA
92121



CoA reductase. Berberine upregulates the expression of liver low-density lipoprotein receptor (LDLR) resulting in improved clearance of plasma LDL cholesterol through receptor mediated endocytosis. Berberine also possesses anti-inflammatory, anti-diabetic and anti-angiogenic effects.

STORAGE & HANDLING: Store at +20°C.

CAUTION: For research use only. Not for human or drug use. The pharmacological and toxicological properties of this product have not been fully investigated. Use caution when handling. Do not use this compound if you are not fully trained or are unaware of the hazards involved.

Verified:

A handwritten signature in black ink, appearing to be 'JK'.

A.G. Scientific, Inc, AN ISO 9001:2000 COMPANY
PHONE: (858) 452-9925, Toll FREE: (877) 452-9925, FAX: (858) 452-9926
EMAIL: info@agscientific.com, Web SITE: www.agscientific.com