


**A NuLiv Proprietary All Natural Absorption Enhancing Ingredient**

(A NuLiv Proprietary Pharmaceutical Extraction and Formulation from Astragalus Membranaceus and Panax Notoginseng)

**Certificate of Analysis**

<b>Product Name</b>	<b>AstraGin™</b>	<b>Manufacturing Date</b>	2017/10/09
<b>Batch No.</b>	C20171009	<b>Sampling Date</b>	2017/10/19
<b>Batch Quantity</b>	1,375 kg	<b>Expiration Date</b>	2020/10/08
<b>Country of Origin</b>	China	<b>Animal Origin</b>	None

Item	Specification	Result	Method
<b>Marker Compounds</b>			
Total saponin	≥1.5%	3.09%	NLS-Complex-002 (UV)
<b>Identifications</b>			
TLC profile	Identical with reference standard	Conform	NLS-Complex-002 (TLC)
<b>Organoleptic Data</b>			
Appearance	Powder	Conform	NLS-QCS-1008
Color	Beige to light brown yellow	Conform	NLS-QCS-1008
Odor	Characteristic	Conform	NLS-QCS-1008
Taste	Characteristic	Conform	NLS-QCS-1008
<b>Process Data</b>			
Plant Name & Part Used	Panax notoginseng (root) Astragalus membranaceus (root)	Conform	
Method of Processing	Extraction/Ethanol & Water	Conform	
Carrier	None	Conform	
Drying Method	Vacuum Dried	Conform	
Excipient	Tapioca Maltodextrin	Conform	
<b>Physical Characteristics</b>			
Particle Size (80 mesh)	≥80% pass through	100.0%	GB/T 5507-2008
Loss on Drying	≤8.0%	3.9%	ChP 2010, App. IXG
Ash Content	≤5.0%	0.4%	AOAC 942.05, 18 <sup>th</sup>
Bulk Density	0.30~0.60g/ml	0.53 g/ml	NLS-QCS-1013
Solubility in Water	Soluble (1g in 30ml)	Soluble	NLS-QCS-1009
<b>Pesticide Residues</b>			
195 kinds	No More Than Detection Limits	Conform	NLS-QCS-1010(GC/MS/MS, LC/MS/MS)
<b>Heavy Metals</b>			
Total Heavy Metals	≤10 ppm	<10 ppm	USP <231>, Meth. II
Arsenic	≤0.5 ppm	< 0.10 ppm	ChP 2010, App. IXB (ICP-MS)
Lead	≤0.5 ppm	< 0.10 ppm	ChP 2010, App. IXB (ICP-MS)
Mercury	≤0.025 ppm	0.02 ppm	ChP 2010, App. IXB (ICP-MS)
Cadmium	≤0.1 ppm	< 0.01 ppm	ChP 2010, App. IXB (ICP-MS)
<b>Other Residues</b>			
Organic solvent	≤0.5% (ethanol)	Conform	NLS-QCS-1007(GC-MS)
Gluten	≤5 ppm	< 5 ppm	NLS-QCS-1020(ELISA)
<b>Microbiological Tests</b>			
Total Plate Count	≤10,000cfu/g	930 cfu/g	ISO 4833-1
Total Yeast & Mold	≤1,000cfu/g	<520 cfu/g	FDA (BAM) Chapter 18, 8 <sup>th</sup> Ed.
Enterobacteriaceae	≤500cfu/g	350 cfu/g	ISO 21528-2:2004
Coliforms	≤3,000cfu/g	<10 cfu/g	FDA (BAM) Chapter 4, 8 <sup>th</sup> Ed.
E. Coli	Negative/25g	Negative/25g	AOAC 997.11, 18 <sup>th</sup>
Salmonella	Negative/375g	Negative/375g	FDA (BAM) Chapter 5, 8 <sup>th</sup> Ed.
Staphylococcus aureus	Negative/25g	Negative/25g	GB 4789.10-2010
Sum of Aflatoxins (B1,B2,G1,G2)	≤10 ppb	< 0.4 ppb	GB 5009.22-2016
Aflatoxin B1	≤5 ppb	< 0.1 ppb	GB 5009.22-2016

We do hereby certify that this product is GMO and BSE/TSE free, is not gamma irradiated, contains no melamine, silica gel,

milk, or milk derivatives and preservatives and conforms to EU regulations EC 1829/2003 and 1830/2003.

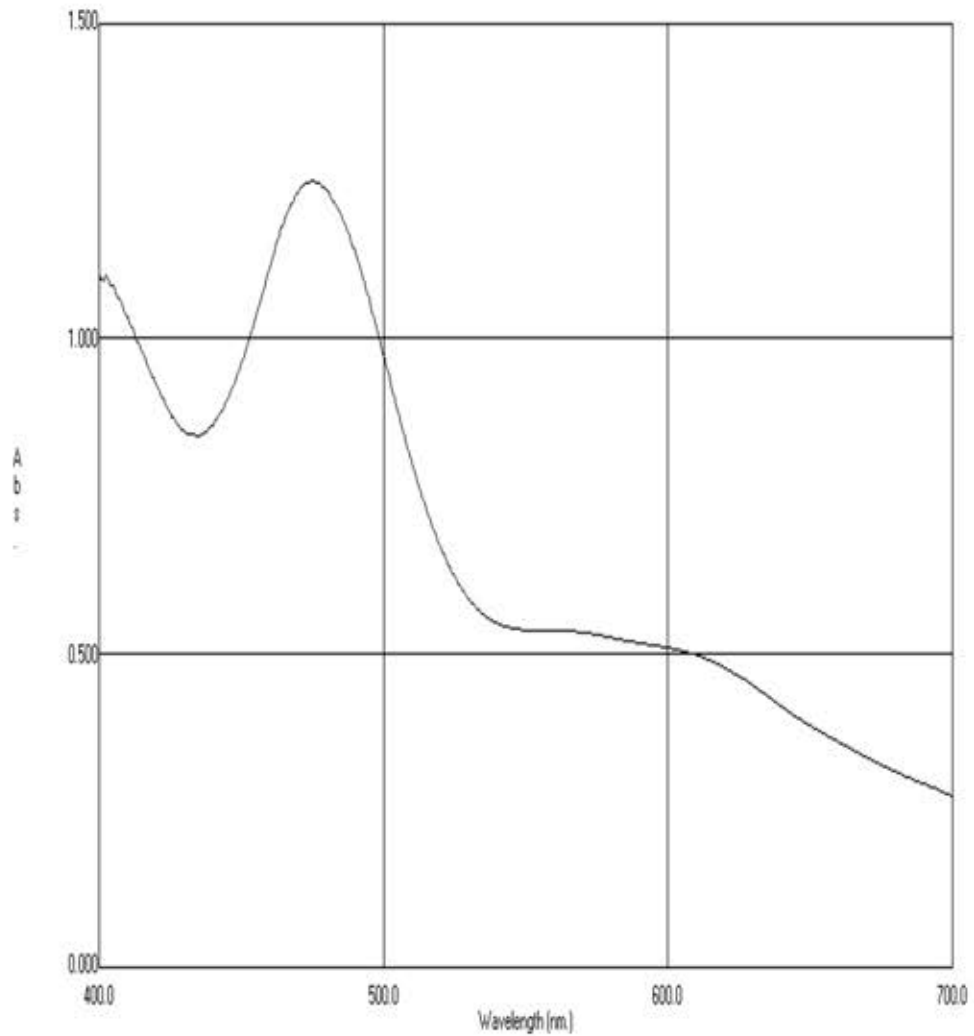


Fig. 1 UV-Vis spectrum for measuring total saponins in AstraGin®

Tested by: Amy Ji

Date: 2017.11.09

Approved by: Sunnie Sun

Date: 2017.11.09