



# ANALYTICAL LABORATORIES IN ANAHEIM, INC.

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Mid-West Nutrition Inc.  
925 W. 6th St.  
Fremont, NE 68025  
Tel: 402-721-7347

Attn:  
Receive Date: 10/28/2016  
Report Date: 11/14/2016

Job#: 91161 Sample: Chondroitin Sulfate 90% Porcine  
Lot#: CS20161018

Analysis	Result (as is)	Result (dry base)
Chondroitin disaccharide Δdi-4S sodium salt	48.6%	
Chondroitin disaccharide Δdi-6S sodium salt	17.5%	
Chondroitin disaccharide Δdi-0S sodium salt	8.90%	
Total Chondroitin disaccharide	75.0%	82.8%
(Equivalent to USP Chondroitin Sulfate Reference Standard)		
Chondroitin Sulfate A	57.1%	
Chondroitin Sulfate C	20.6%	
Nonsulfate chondroitin	10.5%	
<b>Total Chondroitins (Enzymatic HPLC)</b>	<b>88.2%</b>	<b>97.4%</b>
Loss on Dry	9.41%	

Method: ALC150A (Enzymatic-HPLC);

Chondroitin disaccharide di-0S sodium salt, Sigma C3920 010M1203

Chondroitin disaccharide di-4S sodium salt, Sigma C4045 010M1206

Chondroitin disaccharide di-6S sodium salt, Sigma C4170 098K1122

USP Reference Standard: cat# 1133570, lot# R039A0

Dry condition: 105 C for 4 hours.

Chemist: *[Signature]*  
*11/14/2016*

Director, David Ji: *[Signature]* *11/14/2016*

# MID-WEST NUTRITION

925 W 6<sup>th</sup> St Fremont NE 68025  
Phone: 402-991-6876 Fax: 415-329-1920

Product Name	Chondroitin Sulfate (Porcine)
Batch Number	CS20161018
MFG. Date	Oct. 18, 2016
EXP. Date	Oct. 17, 2018
Country of Origin	China

Items of Analysis	Specification	Results
Assay by CPC (dry basis)	≥ 90%	95.87%
Assay by CPC (as is)	Report (as is)	86.93%
Assay by EHPLC (dry basis)	≥ 90%	93.41%
Assay by EHPLC (as is)	Report (as is)	84.70%
Loss on drying	≤ 10%	9.32%
Description	White to off-white powder	Complied
Particle Size	Pass 80 mesh	80 mesh
Limit of Protein	≤ 6.0%	2.66%
Heavy Metals	≤ 10 µg/g	Complied
pH	5.5 – 7.5	6.5
Specific Rotation	-20.0° – -30.0°	-27.21°
Residue on Ignition	20.0% – 30.0%	24.32%
Chloride	≤ 0.5%	Complied
Sulfate	≤ 0.24%	Complied
Total Bacterial Count	≤ 1,000 cfu/g	160 cfu/g

Conclusion: This batch of product meets USP39 standard.

ANALYST: GAO PING

CHECKER: LI JIE