

# MID-WEST NUTRITION

Address: 925 W 6<sup>th</sup> St., Fremont, NE 68025 Tel: 402-721-7347 Fax: 415-329-1920

<b>Product Name</b>	<b>Chondroitin Sulfate (Porcine)</b>
<b>Batch Number</b>	<b>CS20190731</b>
<b>MFG. Date</b>	<b>Jul. 31, 2019</b>
<b>EXP. Date</b>	<b>Jul. 30, 2022</b>
<b>Country of Origin</b>	<b>China</b>

Items of Analysis	Specification	Results
Assay by CPC (dry basis)	≥ 90%	98.45%
Assay by CPC (as is)	Report (as is)	88.6%
Assay by EHPLC (dry basis)	≥ 90%	104.0%
Assay by EHPLC (as is)	Report (as is)	93.7%
Loss on drying	≤ 10%	9.9%
Description	White to off-white powder	Complied
Particle Size	Pass 80 mesh	80 mesh
Limit of Protein	≤ 6.0%	2.23%
Heavy Metals	≤ 10 µg/g	Complied
pH	5.5 – 7.5	6.8
Specific Rotation	-20.0° – -30.0°	-23.5°
Residue on Ignition	20.0% – 30.0%	25.4%
Chloride	≤ 0.5%	Complied
Sulfate	≤ 0.24%	Complied
Total Bacterial Count	≤ 1,000 cfu/g	Complied

Conclusion: This batch of product meets **USP41** standard.

ANALYST: GAO PING

CHECKER: LI JIE

## Certificate of Analysis

<b>Sample Name:</b>	<b>RW00B38-Chondroitin Sulfate_Porcine</b>	<b>Eurofins Sample:</b>	<b>9103377</b>
<b>Project ID</b>		<b>Receipt Date</b>	13-Dec-2019
<b>PO Number</b>	120467	<b>Receipt Condition</b>	Ambient temperature
<b>Lot Number</b>	00089636_CS20190731	<b>Login Date</b>	13-Dec-2019
<b>Sample Serving Size</b>		<b>Date Started</b>	13-Dec-2019
		<b>Online Order</b>	20

Analysis	Result
<b>Loss on Drying</b>	
Loss On Drying	8.2 %
<b>Determination of Chondroitin Sulfate by Enzymatic-UPLC</b>	
Chondroitin disaccharide di-4S sodium salt	70.8 % (on Dry Basis)
Chondroitin disaccharide di-6S sodium salt	15.3 % (on Dry Basis)
Chondroitin disaccharide di-0S sodium salt	4.89 % (on Dry Basis)
Total Chondroitin Disaccharides	91.0 % (on Dry Basis)
Chondroitin Sulfate A (Equivalent to USP Chondroitin Sulfate Reference Standard)	82.0 % (on Dry Basis)
Chondroitin Sulfate C (Equivalent to USP Chondroitin Sulfate Reference Standard)	17.8 % (on Dry Basis)
Nonsulfate Chondroitin (Equivalent to USP Chondroitin Sulfate Reference Standard)	5.67 % (on Dry Basis)
Total Chondroitins (Equivalent to USP Chondroitin Sulfate Reference Standard)	105 % (on Dry Basis)

Method References	Testing Location
<b>Determination of Chondroitin Sulfate by Enzymatic-UPLC (OC_CHENZ_S)</b>	<b>Food Integrity Innovation-Brea</b>
AOAC 2015.11 (modified)	
<b>Loss on Drying (OC_LOD_S)</b>	<b>Food Integrity Innovation-Brea</b>

Testing Location(s)	Released on Behalf of Eurofins by
<b>Food Integrity Innovation-Brea</b>	<b>Robert Grahn - Manager</b>

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**These results apply to the sample as received and only to the items tested. This certificate of analysis shall not be reproduced, except in its entirety, without the written approval of Eurofins.**