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## Certificate of Analysis

**Product Name:** Chondroitin Sulfate Sodium  
**Batch #:** CS20161002  
**Product Code:** C1385  
**Manufacture Date:** September 24, 2016  
**Expiration Date:** September 23, 2018  
**Country of Origin:** China

| <u>Physical</u>               | <u>Specification</u>         | <u>Result</u> | <u>Method</u> |
|-------------------------------|------------------------------|---------------|---------------|
| Appearance                    | White to light yellow powder | Conforms      | Visual        |
| Specific rotation             | -20° ~ -30°                  | -25.76°       | USP           |
| pH                            | 5.5 ~ 7.5                    | 6.5           | 1 in 100      |
| Clarity and color of solution | < 0.35                       | 0.138         | USP           |
| <b><u>Composition</u></b>     |                              |               |               |
| Assay (ODB)                   |                              |               |               |
| Chondroitin Sulfate Sodium    | > 90.0%                      | 92.66%        | CPC           |
| Loss on drying                | ≤ 10%                        | 9.20%         | USP           |
| Residue on ignition           | 20% ~ 30%                    | 24.66%        | USP           |
| Protein                       | ≤ 6.0%                       | 2.85%         | USP           |
| Chloride                      | ≤ 0.5%                       | < 0.5%        | USP           |
| <b><u>Safety</u></b>          |                              |               |               |
| Heavy metal                   | < 20 ppm                     | < 20 ppm      | USP           |
| <b><u>Microbiology</u></b>    |                              |               |               |
| Total plate count             | ≤ 3,000 cfu/g                | < 1,000 cfu/g | AOAC          |
| Yeast and mold                | ≤ 300 cfu/g                  | < 100 cfu/g   | AOAC          |
| E. coli                       | Negative                     | Negative      | AOAC          |
| Salmonella                    | Negative                     | Negative      | AOAC          |

*Lucy Zhang*

Approved by: Lucy Zhang  
1/6/2017, 5:22 pm

Source: Porcine

This material does not contain milk, egg, fish, crustacean shellfish, tree nuts, peanuts, wheat and soybean.

Storage: keep in tightly sealed container, away from excess heat and light.

This is to confirm that the above COA results are derived from manufacturer's original COA.