Chengdu PNP Biotech Co., Ltd.

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STABILITY DATA

Fish Collagen Granules 90% Protein

This document presents the stability profile of Fish Collagen Granules 90% Protein supplied by Chengdu PNP Biotech Co., Ltd. Samples were packed in the normal commercial package and stored under the conditions stated for each study, and the product was tested at every time point shown below. The programme covers a long-term study and an accelerated study, conducted in accordance with the ICH Q1A methodology (and the corresponding pharmacopeial stability guideline for drug substances), each performed on three separate, non-consecutive production batches, with the analytical results from testing actually carried out at each time point.

Product Name	Fish Collagen Granules 90% Protein	**CAS No.**	9007-34-5
Molecular Formula	Not applicable	**Molecular Weight**	Not applicable

Long-Term Stability

Condition: 25 ± 2 °C / 60 ± 5 % RH. Time points are expressed in months. Each batch is identified in the merged row above its results; all batches were stored through the final time point, and every listed result is from testing performed at that time point.

The shelf life stated for this product is confirmed by these real-time long-term stability studies.

Test Item	Specification	0 m	3 m	6 m	9 m	12 m	18 m	24 m
Batch LT-1 | Manufacture 2023-11-08 | Study start 2023-11-15								
Appearance	Off-white to light yellow granule	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms
Protein	≥ 90.0%	91.35%	91.36%	91.32%	91.25%	91.23%	91.12%	91.08%
Peptide	≥ 80.0%	81.33%	81.31%	81.20%	81.21%	81.13%	81.07%	80.95%
Hydroxyproline	≥ 8.0%	8.28%	8.26%	8.26%	8.20%	8.19%	8.13%	8.08%
Loss on Drying	≤ 7.0%	3.34%	3.47%	3.73%	3.82%	4.06%	4.47%	4.84%
Standard Plate Count	≤ 10,000 cfu/g	410 cfu/g	594 cfu/g	704 cfu/g	662 cfu/g	1,272 cfu/g	2,155 cfu/g	938 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	51 cfu/g	89 cfu/g	95 cfu/g	128 cfu/g	139 cfu/g	59 cfu/g	221 cfu/g
Batch LT-2 | Manufacture 2024-04-03 | Study start 2024-04-10								
Appearance	Off-white to light yellow granule	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms
Protein	≥ 90.0%	91.30%	91.31%	91.30%	91.23%	91.16%	91.09%	90.98%
Peptide	≥ 80.0%	81.32%	81.30%	81.33%	81.23%	81.23%	81.08%	81.03%
Hydroxyproline	≥ 8.0%	8.41%	8.31%	8.35%	8.29%	8.20%	8.14%	8.09%
Loss on Drying	≤ 7.0%	3.07%	3.39%	3.35%	3.67%	3.96%	4.20%	4.71%
Standard Plate Count	≤ 10,000 cfu/g	916 cfu/g	668 cfu/g	608 cfu/g	1,203 cfu/g	879 cfu/g	1,460 cfu/g	2,518 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	65 cfu/g	60 cfu/g	78 cfu/g	57 cfu/g	75 cfu/g	71 cfu/g	155 cfu/g
Batch LT-3 | Manufacture 2024-09-11 | Study start 2024-09-18								
Appearance	Off-white to light yellow granule	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms	Conforms
Protein	≥ 90.0%	91.31%	91.33%	91.23%	91.21%	91.18%	91.07%	90.97%
Peptide	≥ 80.0%	81.32%	81.34%	81.31%	81.27%	81.23%	81.10%	81.06%
Hydroxyproline	≥ 8.0%	8.28%	8.21%	8.17%	8.19%	8.15%	8.10%	8.08%
Loss on Drying	≤ 7.0%	3.35%	3.37%	3.55%	3.89%	4.10%	4.39%	4.82%
Standard Plate Count	≤ 10,000 cfu/g	474 cfu/g	831 cfu/g	1,279 cfu/g	604 cfu/g	674 cfu/g	2,353 cfu/g	2,667 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	52 cfu/g	54 cfu/g	46 cfu/g	48 cfu/g	136 cfu/g	194 cfu/g	80 cfu/g

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Accelerated Stability

Condition: 40 ± 2 °C / 75 ± 5 % RH. Time points are expressed in months.

Accelerated data are supportive only; the shelf life is ultimately confirmed by the real-time long-term studies above.

Test Item	Specification	0 m	1 m	2 m	3 m	6 m
Batch ACC-1 | Manufacture 2023-10-24 | Study start 2023-10-31						
Appearance	Off-white to light yellow granule	Conforms	Conforms	Conforms	Conforms	Conforms
Protein	≥ 90.0%	91.34%	91.27%	91.16%	91.08%	90.85%
Peptide	≥ 80.0%	81.20%	81.11%	81.07%	80.98%	80.68%
Hydroxyproline	≥ 8.0%	8.42%	8.38%	8.29%	8.25%	8.09%
Loss on Drying	≤ 7.0%	3.09%	3.41%	3.72%	3.95%	4.69%
Standard Plate Count	≤ 10,000 cfu/g	310 cfu/g	1,198 cfu/g	1,114 cfu/g	726 cfu/g	1,008 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	47 cfu/g	110 cfu/g	115 cfu/g	157 cfu/g	221 cfu/g
Batch ACC-2 | Manufacture 2023-12-06 | Study start 2023-12-13						
Appearance	Off-white to light yellow granule	Conforms	Conforms	Conforms	Conforms	Conforms
Protein	≥ 90.0%	91.30%	91.17%	91.10%	90.99%	90.69%
Peptide	≥ 80.0%	81.27%	81.17%	81.09%	81.00%	80.68%
Hydroxyproline	≥ 8.0%	8.39%	8.37%	8.28%	8.21%	8.10%
Loss on Drying	≤ 7.0%	3.03%	3.28%	3.67%	3.87%	4.71%
Standard Plate Count	≤ 10,000 cfu/g	1,016 cfu/g	1,031 cfu/g	608 cfu/g	1,728 cfu/g	1,822 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	48 cfu/g	56 cfu/g	83 cfu/g	104 cfu/g	136 cfu/g
Batch ACC-3 | Manufacture 2024-01-17 | Study start 2024-01-24						
Appearance	Off-white to light yellow granule	Conforms	Conforms	Conforms	Conforms	Conforms
Protein	≥ 90.0%	91.35%	91.26%	91.18%	91.03%	90.75%
Peptide	≥ 80.0%	81.23%	81.13%	81.03%	80.91%	80.65%
Hydroxyproline	≥ 8.0%	8.35%	8.24%	8.22%	8.21%	8.05%
Loss on Drying	≤ 7.0%	3.26%	3.49%	3.76%	4.07%	4.72%
Standard Plate Count	≤ 10,000 cfu/g	728 cfu/g	675 cfu/g	1,479 cfu/g	1,432 cfu/g	2,413 cfu/g
Total Yeast & Mold	≤ 1,000 cfu/g	55 cfu/g	98 cfu/g	49 cfu/g	149 cfu/g	192 cfu/g

Legend: "Conforms" means the attribute is consistent with the initial (0-month) value and meets the specification.

Prepared by: Mia Yu Approved by: Charlie Wang Date: Nov. 20, 2026