



CERTIFICATE OF ANALYSIS

Issued by an ISO/IEC 17025-accredited laboratory · raw data appended (page 2)

PASS

QC released for dispatch



Scan to verify

Cartalax — 50mg

Cartilage Bioregulator

1. PRODUCT IDENTIFICATION

Synonym	Cartilage Bioregulator	Label claim	50mg
Sequence / structure	Ala-Glu-Asp	Lot / Batch	ZX260512-359 / B61925
Mol. formula	C12H19N3O8	Manufacture date	21 May 2026
Mol. weight	333.29 g/mol	Date of analysis	27 May 2026
CAS number	No CAS assigned	Storage	-20 °C, dark, desiccated
Salt form	Acetate salt		

2. ANALYTICAL TEST RESULTS

Test	Method	Specification	Result	Verdict
Appearance	Visual	White/off-white powder	White to off-white lyophilized powder	PASS
Identity (ESI-MS)	LC-MS	Matches 333.29 Da	333.29 Da (Δ 0 ppm)	PASS
Purity	RP-HPLC, UV 220 nm	$\geq 98.0\%$ area	99.10%	PASS
Related substances	RP-HPLC	Single ≤ 1.0 / Total $\leq 2.0\%$	0.62 / 0.90%	PASS
Water content	Karl Fischer (USP <921>)	$\leq 8.0\%$	2.2%	PASS
Counter-ion: acetate	Ion chromatography	Report (3.0–15.0%)	5.1%	PASS
Net peptide content	Amino-acid analysis	$\geq 80.0\%$	92.0%	PASS
Bacterial endotoxin	LAL kinetic (USP <85>)	< 5.0 EU/mg	0.12 EU/mg	PASS
Heavy metals	ICP-MS (ICH Q3D)	Conforms	Conforms	PASS

CONCLUSION

All tested parameters CONFORM to the acceptance specifications. The batch is of high chromatographic purity ($\geq 98\%$) with an impurity profile, identity and residual/contaminant results meeting pharmaceutical-grade quality requirements. Material released. Supporting RP-HPLC chromatogram and ESI-MS spectrum are appended on page 2.

DLW.

Dr. Li Wenhua

Analyst · 27 May 2026 · Zhongxi Research Institute

DFH.

Dr. Fang Hong (QC Manager)

Approved by · 27 May 2026 · Zhongxi Research Institute



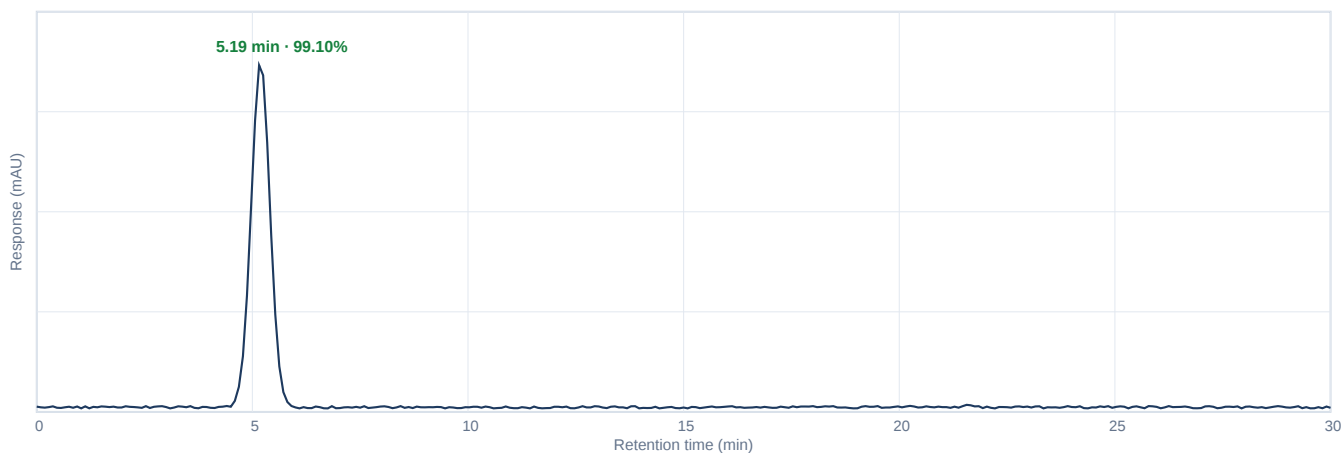
APPENDIX — ANALYTICAL RAW DATA

Cartalax 50mg · Lot ZX260512-359 · Cert. ZXR-COA-2026-11481



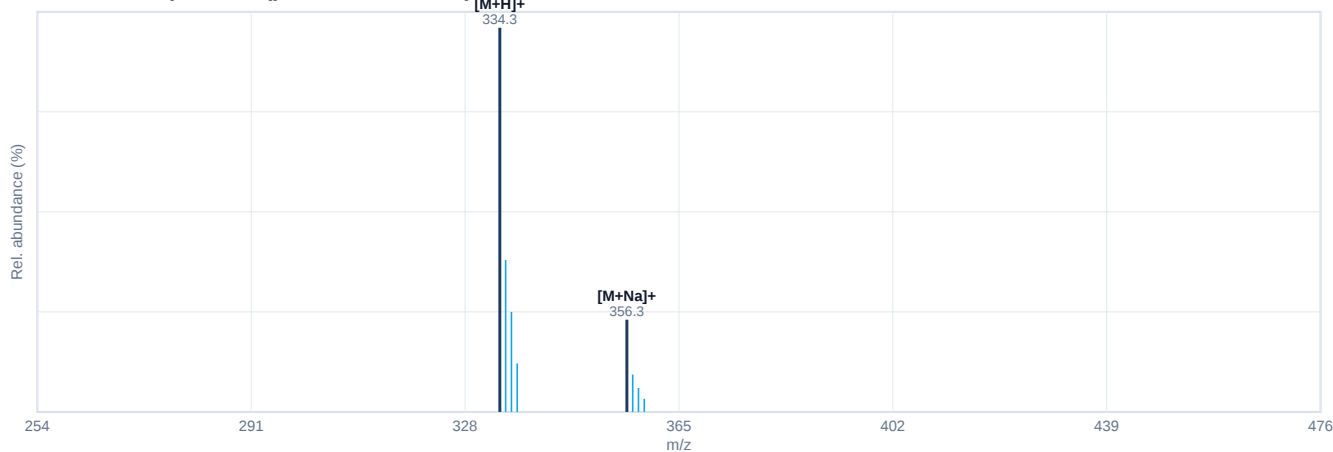
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Figure 1. RP-HPLC Chromatogram (UV 220 nm)



Peak #	RT (min)	Area (μV·s)	Area %	Assignment
1	5.19	1058098	99.10	Main (target)
2	21.60	4400	0.42	Impurity / related substance
3	19.95	2569	0.24	Impurity / related substance
4	17.10	1640	0.15	Impurity / related substance
5	23.03	871	0.09	Impurity / related substance

Figure 2. ESI-MS Spectrum (positive ion mode)



Interpretation

Identity confirmed by ESI-MS. Observed ions [M+H]⁺ 334.3, [M+Na]⁺ 356.3 deconvolute to a neutral monoisotopic-average mass of 333.29 Da (theoretical 333.29 Da; mass error 0 ppm), consistent with Cartalax. No co-eluting species above 0.5% indicative of misidentification.

Methods — RP-HPLC: Agilent 1260 Infinity II; Zorbax SB-C18 4.6×250 mm, 5 μm; A: 0.1% TFA in water, B: 0.1% TFA in MeCN; 10–70% B over 30 min; 1.0 mL/min; 25 °C; 20 μL injection. MS: AB Sciex TripleTOF, ESI⁺, capillary 4.5 kV, deconvolution by Bio Tool Kit. KF: Metrohm 901. IC: Thermo Dionex ICS-6000. ICP-MS: Agilent 7900.