

What a certificate is

A certificate of analysis is a lab's report on one lot of one product: what molecule it is, how pure, how much, and whether it is clean enough to inject. It describes the sample tested, on the date tested, and nothing else.

IT IS	A snapshot of one sample from one lot
IT IS NOT	A guarantee about your vial unless the lot numbers match
CANNOT SHOW	Whether the product works, is safe for you, or is legal to sell

THE CERTIFICATE IS NOT THE PRODUCT

A seller who tests one vial and ships another has told you about the one they tested. Ask for the lot number on the certificate, and check it against your vial.

This pamphlet is for adults handed a certificate for a peptide and wondering what it proves. It is not medical advice, and a certificate never replaces a licensed pharmacy or an approved product.

Before you trust a certificate, ask

- ☐ Which lab, and can I contact them to verify this report?
- ☐ What is the lot number, and is it printed on my vial?
- ☐ Was quantity measured, or only purity?
- ☐ Is the salt acetate?
- ☐ Were endotoxin and sterility tested, with limits?
- ☐ Is this certificate for the finished vial I am holding?

SOURCES

1. United States Pharmacopeia. General Chapter <1225> Validation of Compendial Procedures; General Chapter <621> Chromatography; General Chapter <85> Bacterial Endotoxins Test; General Chapter <71> Sterility Tests. Current editions.
2. U.S. Food and Drug Administration. Human drug compounding: sections 503A and 503B of the Federal Food, Drug, and Cosmetic Act; Current Good Manufacturing Practice (21 CFR 210 and 211).
3. Vergote V, et al. Quality specifications for peptide drugs: a regulatory-pharmaceutical approach. J Pept Sci. 2009;15(11):697-710.
4. Cornish J, et al. Trifluoroacetate, a contaminant in purified proteins, inhibits proliferation of osteoblasts and chondrocytes. Am J Physiol. 1999;277(5):E779-E783.
5. United States Pharmacopeia. General Chapter <797> Pharmaceutical Compounding — Sterile Preparations. 2023 revision.

This guide is an educational summary and is not medical advice. A certificate of analysis describes a sample tested at a point in time; it cannot certify the vial in your hand unless the lot numbers match and the chain of custody is documented. An FDA-approved product or a licensed pharmacy's compounded preparation carries these assurances by law; a certificate from a research-chemical seller does not replace them.

Newport Peptide Society

[NEWPORTPEPTIDESOCIETY.COM/GUIDES/CERTIFICATE-OF-ANALYSIS](https://newportpeptidesociety.com/guides/certificate-of-analysis)

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READER'S GUIDE

Reading a Certificate of Analysis

What a real one contains, line by line, and the six ways a bad one gives itself away

Every guide the Society publishes ends with the same advice: ask for the certificate of analysis. This one explains what you are looking at when it arrives. A certificate is a lab's report on one batch of one product. Read properly, it tells you whether the vial contains what the label says, how much, and whether it is fit to inject. Read casually, it is a page of reassuring numbers, which is what most sellers count on.

The tests, and what each answers

TEST	ANSWERS	GOOD
Identity (mass spec)	Is it the right molecule?	Observed mass matches expected
Purity (HPLC)	How much is intact peptide?	Above 95%, chromatogram shown
Quantity (assay)	How many mg in the vial?	90–110% of label
Net peptide content	How much of the weight is peptide?	70–90%, stated
Counter-ion	Acetate or TFA?	Acetate for injection
Endotoxin (LAL)	Bacterial toxins?	Below USP limit
Sterility	Living microbes?	USP <71> passed

Purity and quantity are different questions. A vial can be 99% pure and hold half the labeled milligrams. Quantity governs your dose and is the test most often missing.

Read it in five minutes

- ☐ Independent, accredited lab (ISO 17025), or the seller's own bench?
- ☐ Lot number, test date, and sample description present? Lot matches my vial?
- ☐ Identity by mass spectrometry, with masses printed?
- ☐ Purity with the chromatogram attached, not just typed?
- ☐ Quantity per vial measured, not only claimed?
- ☐ Net peptide content stated?
- ☐ Counter-ion named, and acetate?
- ☐ For injectables: endotoxin and sterility results with limits?
- ☐ Certificate for this finished product, not for raw material later split and re-vialed?

THE QUESTION THAT SETTLES MOST CASES

Ask for the lab's contact details and permission to verify the certificate directly. A real one can be confirmed with the lab that issued it. The seller's reaction is itself an answer.

Six giveaways, and where assurance really comes from

- Purity of 99.9% with no chromatogram. Real peptides carry impurities; real labs show the trace.
- No lot number, or the same certificate reused across products and dates.
- A lab that is the seller under another name, with no accreditation or address.
- Purity without quantity. "99%" is meant to be read as "the full 10 mg."
- No endotoxin or sterility line on something sold for injection.
- TFA as the salt, or no salt listed. Converting to acetate costs money and is the step a cut-rate seller skips.

A CERTIFICATE DOES NOT MAKE A RESEARCH CHEMICAL A MEDICINE

A perfect certificate proves one sample was pure and clean on one day. It does not create a prescriber, a pharmacist, a beyond-use date, or a legal basis for sale. An approved product or a licensed pharmacy provides those by law.