Analytical Verification Methods: HPLC & Mass Spectrometry in Peptide Pa

Monograph 02 | How Researchers Audit Lot Documentation & Chromatograms
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1. Reversed-Phase HPLC Peak Integration

High-Performance Liquid Chromatography separates peptide species by hydrophobic interaction on a stationary column. Researchers inspect UV absorbance chromatograms (typically 214 nm or 220 nm) to verify a sharp primary peak and confirm that trace synthesis byproducts stay below documented thresholds.

2. Molecular Weight Confirmation via Mass Spectrometry

Chromatography alone proves uniformity, not identity. Electrospray Ionization (ESI-MS) or MALDI-TOF measures the mass-to-charge ratio (m/z) of ionized peptide chains so labs confirm the measured monoisotopic or average molecular mass matches theoretical sequence calculations.

3. Matching Printed Lot Identifiers to Documentation

Standard laboratory archiving links each printed batch code directly to raw analytical trace metadata, instrumentation calibration logs, and third-party lab verification timestamps so study results remain traceable years after publication.