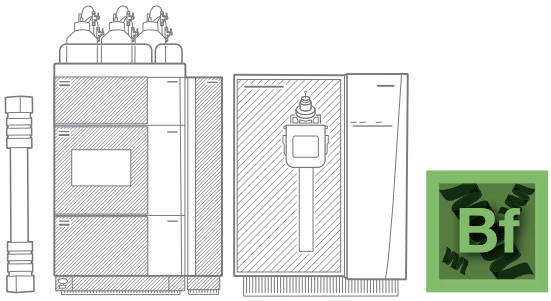
GLP-1 drug analysis

Enhancing GLP-1 analysis: Accurate impurity detection and detailed structure elucidation

Therapeutic peptides are an innovative class of pharmaceutical products, composed of precisely structured amino acids and widely used in modern medicine. With over 100 peptide-based medications approved worldwide, their application in treating diseases like type 2 diabetes and obesity continues to grow. A leading example is semaglutide, a GLP-1 receptor agonist that became the third best-selling drug globally in 2023, revolutionizing diabetes and weight management treatment. As patents for several GLP-1 receptor agonists near expiration, pharmaceutical companies are racing to develop generic peptide drugs, driving the next wave of pharmaceutical innovation.

Characterization



Thermo Scientific™ Vanquish™ Flex UHPLC system
Thermo Scientific™ Orbitrap Exploris™ 240 MS
Thermo Scientific™ Hypersil GOLD™ Peptide Column
Thermo Scientific™ BioPharma Finder™ software

The high sensitivity, resolution, and high mass accuracy of Orbitrap Exploris 240 mass spectrometer enabled confident and sensitive impurity profiling, especially for accurately identifying low abundant, co-eluting impurities in an excessive amount of API is demonstrated.

Value-added workflow benefits

- By leveraging both full scan and ddMS2 spectra, the peptide coverage map in BioPharma Finder software ensures confident impurity identification and structure elucidation, even at trace levels below standard identification thresholds
- BioPharma Finder software simplifies the detection of degradation products in stressed samples with its built-in comparative analysis tools, allowing seamless monitoring of key attributes across different conditions or treatments

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