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# Metal–organic frameworks in proteomics/peptidomics-A review

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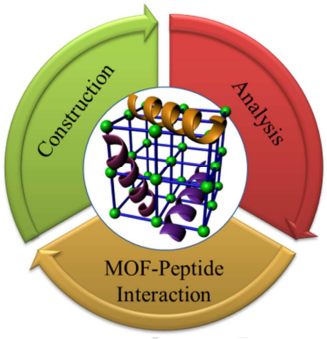
**HIGHLIGHTS:**

- A review on MOFs in proteomics/peptidomics for peptide capture and analysis.
- Constructing MOFs with amino acids/peptides.
- MOFs as solid adsorbents, assisted matrixes, and stationary phases.
- Prospect of MOF-based proteomics/peptidomics.




**ABSTRACT:** Peptides exert essential role in physiological processes. It is yet a big challenge to finish the mapping of global peptides in complex biological systems due to the interference from the matrices. Recently, the metal-organic frameworks (MOFs) have been applied in proteomics/peptidomics since the unique pore structures and versatile surface properties of MOFs. By constructing MOFs with amino acids/peptides, MOFs were endowed characteristics of these biomolecules. Based on some specific interactions, MOFs could be employed as solid adsorbents to capture peptides (such as endogenous peptides, glycopeptides, and phosphopeptides) and to selectively detect peptides, and also could be applied as matrix for peptide ionization in mass spectrometry. In addition, MOFs were developed as stationary phases (including particulate and monolith) for peptide analysis. At last, the