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Nano-Flow vs Standard-Flow: which is the more suitable LC/MS method for quantifying hepcidin-25 in human serum in routine clinical settings?

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Abstract

Hepcidin-25 peptide is a biomarker which is known to have considerable clinical potential for diagnosing iron-related diseases. Developing analytical methods for the absolute quantification of hepcidin is still a real challenge, however, due to the sensitivity, specificity and reproducibility issues involved. In this study, we compare and discuss two MS-based assays for quantifying hepcidin, which differ only in terms of the type of liquid chromatography (nano LC/MS versus standard LC/MS) involved. The same sample preparation, the same internal standards and the same MS analyzer were used with both approaches. In the field of proteomics, nano LC chromatography is generally known to be more sensitive and less robust than standard LC methods. In this study, we established that the performances of the standard LC method are equivalent to those of our previously developed nano LC method. Although the analytical performances were very similar in both cases. The standard-flow platform therefore provides the more suitable alternative for accurately determining hepcidin in clinical settings.