

## [News story: Government Chemist and IGFS review key quantitative techniques](#)

The methods of standard additions and of internal standards are regularly used and regarded as self-evident to modern analytical chemists. We seldom, if ever, wonder how they arose.

Prompted by this lacuna, Professor Duncan Thorburn Burns of the Institute for Global Food Security, Queens University Belfast and [Dr Michael Walker](#) collaborated to study the origins and history of these concepts.

The two methods are related by the addition of analytes to the sample prior to their quantitative determination but they are quite different. The method of standard additions measures the analytical responses to a series of known additions of the same analyte from which the amount of the endogenous compound can be calculated.

The method of internal standards adds a known amount of an analogue of the compound of interest that is essentially absent from the sample. Its determination alongside the analyte of interest allows the results to be corrected for inevitable losses of analyte in the measurement process.

The origin of both procedures is missing from current texts on instrumental methods of analysis. They stem from the original work of several chemists whose priority should be properly acknowledged but has been inadvertently misattributed.

In a recent open access feature article in the prestigious journal *Analytical and Bioanalytical Chemistry* Burns and Walker set the record straight on priority and review the recorded applications. These range from flame spectroscopy in 1877 and polarography in 1937 through to current use in NMR and in hyphenated techniques.

Burns, D.T. and Walker, M.J., 2019. Origins of the method of standard additions and of the use of an internal standard in quantitative instrumental chemical analyses. *Analytical and bioanalytical chemistry*, 411, 2749 – 2753, <https://doi.org/10.1007/s00216-019-01754-w>