Peak inhibition is when the signal-to-noise ratio (SNR) of an analyte peak is attenuated due to some factor.

A number of causes may be possible depending on the particular situation. One cause can be an increase in the background noise from the mobile phase. If the mobile phase has UV-absorbing impurities, for example, this can make the baseline more noisy in UV detection. In LC-MS, peak inhibition generally points to an issue of ion suppression, whereby components in the mobile phase or sample matrix either compete for ionization with the analyte or attenuate its own ionization.

Because this phenomenon is so common in LC-MS, use of an Internal Standard is often recommended for obtaining Reliable Quantitative Results.

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