



NQAC

Nestlé Quality Assurance Center  
Dublin

# SCREENING TARGET CONCENTRATION (STC)

## What is "Screening Target Concentration"?

Screening Target Concentration (STC) is the concentration at which a screening test categorizes the sample as "Suspect". A "Suspect" result indicates that the samples potentially contain the target analyte(s) and triggers the opportunity for a confirmatory test.

## How is STC determined?

Regulatory authorities have established Maximum Residue Limits (MRLs) or Minimum Required Performance Limits (MRPLs) for numerous compound/matrix combinations. For non-regulated combinations, the level of interest is established at an "As Low as Reasonably Achievable" (ALARA) concentration. A screening method is validated with the STC at a level that should be set at or below the MRL or MRPL for regulated compounds or set "ALARA" for non-regulated ones.

## Does a "suspect" result mean that my sample contains that analyte?

Not necessarily. It means that based upon the data analyzed, there is reasonable confidence, but further evaluation may be required for complete certainty. Given the broad scope of screening methods, there is the possibility of other compounds with similar mass transitions and characteristics being present in the sample. These compounds could lead to false positives or false negatives. This is why we set a cut-off level below the STC and recommend external confirmation for a quantitative value when necessary. A "Suspect" result does not firmly indicate that the analyte is present in the sample at, or even above, the STC.

## What is a "cut-off level" and how is that different from an STC?

Cut-off level is the response or signal from a screening test which indicates that a sample may contain an analyte at or above the STC. During the validation process, the cut-off level is established through analysis of matrix blank samples and corresponding spiked samples at the STC. Cut-off levels must be set to ensure that the highest response in blank/unspiked samples is below the lowest response in spiked samples. The cut-off level is designated at a percentage of the STC and can vary between compounds and methods. They are specified as such to minimize false negatives due to matrix effects, instrument sensitivity differentials, and other potential factors.

I received a “suspect” result from NQAC Dublin but a “<LOQ” result from the external laboratory. Their LOQ is at the same concentration as your STC. What could cause this discrepancy?

It may very well be that neither is inaccurate. While the analyte concentration may be shared between our STC and their LOQ, the results must be interpreted differently. Since we trigger “Suspect” at a cut-off level lower than the STC (at a ratio <1), there will be a range of detections where both results are simultaneously accurate despite seeming contradictory.

I am still confused about STC or have additional questions. Who can I contact?

A Customer Service associate would be more than happy to assist with any further inquiries. Please reach out to our Customer Service team at [nqacdublincustomerservice@us.nestle.com](mailto:nqacdublincustomerservice@us.nestle.com).

### **Applicable Methods:**

- LI-00.041 – Beta-Lactam Residues in Food by LC-MS/MS
- LI-00.055 – Aminoglycosides in Food by LC-MS/MS
- LI-00.172 – Veterinary Drugs in Food by LC-MS/MS
- LI-00.611 – Tetracyclines in Food by LC-MS/MS