STEC

Shiga Toxin E.coli Scheme

Scheme Description

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Record of issue status and modifications

ISSUE	ISSUE DATE	DETAILS	AUTHORISED BY
1	June 2017	Scheme Description issued	T.Noblett
2	Dec 2017	Typographical error on page 2 amended (QMS to STEC) Sample numbers amended	T.Noblett
3	Jul 2018	Added UKAS Logo	A McCarthy
4	Sept 2018	Amended Methods paragraph as method details no longer included in Appendix	T.Noblett
5	Aug 2019	Removed 'standards' from Page 1	A McCarthy
6	May 2020	Include analyte for detection of E.coli O157 Updated UKAS logo	T.Noblett A McCarthy
7	Sep 2020	Removed fax number and hard copy report info	A McCarthy
8	July 2021	Added sample for 375g meat. Changed sample numbering to be consistent with other schemes. Updated email address and UKAS logo	T.Noblett A Collins
9	Sept 2022	Updated email address and UKAS logo	A Collins
10	Sept 2023	Corrected reporting units	T.Noblett

Notes:
Where this document has been translated, the English version shall remain the definitive version

Scheme Aims and Organisation

The primary aim of the Shiga Toxin E.coli Scheme (STEC) is to enable laboratories performing the microbiological analysis of food and dairy products to monitor their performance and compare with that of their peers. STEC also aims to provide information to participants on technical issues and methodologies relating to testing of food and dairy products.

Further information about STEC, including test material availability, round despatch dates and reporting deadlines, are available on the current application form.

Test Materials

Details of test materials available in STEC are given in Appendix A. The test parameters are continually reviewed to ensure they meet the needs of current laboratory testing and regulatory requirements.

Test material batches are tested for homogeneity for at least one test parameter where deemed appropriate. Details of homogeneity tests performed and results are available in the Scheme Reports.

Some aspects of the scheme, such as test material production, homogeneity testing and stability assessment, can from time to time be subcontracted. When subcontracting occurs, it is placed with a competent subcontractor and LGC is responsible for this work. The planning of the scheme, the evaluation of performance and the authorisation of the final report will never be subcontracted.

Statistical Analysis

Information on the statistics used in STEC can be found in the General Protocol and in the Scheme Report. Methods for determining assigned values and the values for SDPA used for individual samples are given in Appendix A

Methods

Methods are listed in PORTAL. Please select the most appropriate method from the list. If none of the methods are appropriate, then please report your method as 'Other' and record a brief description in the Comments Section in PORTAL.

Results and Reports

Scheme results are returned through our electronic reporting software, PORTAL, full instructions for which are provided by email.

Scheme reports will be available on the website within 10 working days of round closure. Participants will be emailed a link to the report when it is available.

APPENDIX A - Description of abbreviations used

Assigned Value (AV)
The assigned value may be derived in the following ways:

- From the robust mean (RMean). This is the median of participant results after the removal of test results that are inappropriate for statistical evaluation, e.g. miscalculations, transpositions and other gross errors. Generally, the assigned value will be set using results from all methods, unless the measurement is considered method-dependant, in which case the assigned value will be set by method as illustrated in the report tables.
  For some analytes, where there is a recognised reference method for that type of measurement, this may be used as the assigned value for a particular analyte i.e. it would be applied to results obtained by any method.

  Traceability: Assigned values which are derived from the participant results, or a sub-set of the results are not traceable to an international measurement standard. The uncertainty of assigned values derived in this way is estimated from the participant results, according to ISO 13528.

- From a formulation value (Formulation). This denotes the use of an assigned value derived from sample preparation details, where known and exact quantities of analyte have been used to prepare the sample.

  Traceability: Assigned values calculated from the formulation of the test sample are traceable, via an unbroken metrological traceability chain, to an international measurement standard. The measurement uncertainty of the assigned value is calculated using the contributions from each calibration in the traceability chain.

- From a qualitative formulation (Qual Form). This applies to qualitative tests where the assigned value is simply based on the presence/absence of the analyte in the test material.

  Traceability: Assigned values calculated from the qualitative formulation of the test sample are traceable to a certified reference standard or a microbiological reference strain.

- From expert labs (Expert). The assigned value for the analyte is provided by an 'expert' laboratory.

  Traceability: Assigned values provided by an 'expert' laboratory may be traceable to an international measurement standard, according to the laboratory and the method used. The uncertainty of measurement for an assigned value produced in this way will be provided by the laboratory undertaking the analysis. Details of traceability and the associated uncertainty will be provided in the report for the scheme/round.

Range
This indicates the concentration range at which the analyte may be present in the test material.

SDPA
The SDPA represents the 'standard deviation for proficiency assessment' which is used to assess participant performance for the measurement of each analyte. This may be a fixed value (as stated), a percentage (%) of the assigned value or based on the robust standard deviation of the participant measurement results, either across all methods or by method depending on whether the measurement made is method dependent (see assigned value).

Units
This indicates the units used for the assessment of data and in which participants should report their results. For some analytes in some schemes participants may have a choice of which units to report their results, however, the units stipulated in this scheme description are the default units to which any results reported using allowable alternative results will be converted to.

DP
This indicates the number of decimal places to which participants should report their measurement results.

APPENDIX A

Sample PT-SC-01 (A & B)   **STEC detection and identification in 25g dairy or meat matrix**
Supplied as: 2 glass vials (labelled A & B) each containing 2 x lyophilised pellets **PLUS** choice of matrix
      01D 2 x 25g skimmed milk powder
      01M 2 x 25g beef powder

Analyte	Method	AV	Inoculum Range	SDPA	Reporting Units	DP
Detection of *E.coli* O157	Any	Formulation	0 to 1000 cfu g^{-1}	NA	Detected/not detected in 25g	NA
Detection of STEC (O26, O45, O103, O111, O121, O145, O157)	Any	Formulation	0 to 1000 cfu g^{-1}	NA	Detected/not detected in 25g	NA
Identification of STEC serovar (O26, O45, O103, O111, O121, O145, O157)	Any	Formulation	NA	NA	NA	NA

Sample PT-SC-02 (A & B)   **STEC detection and identification in 375g meat matrix representing 'pooled' sample**
Supplied as: 2 glass vials (labelled A & B) each containing 2 x lyophilised pellets **PLUS** matrix
      02M 2 x 375g beef powder

Analyte	Method	AV	Inoculum Range	SDPA	Reporting Units	DP
Detection of *E.coli* O157	Any	Formulation	0 to 1000 cfu g^{-1}	NA	Detected/not detected in 375g	NA
Detection of STEC (O26, O45, O103, O111, O121, O145, O157)	Any	Formulation	0 to 1000 cfu g^{-1}	NA	Detected/not detected in 375g	NA
Identification of STEC serovar (O26, O45, O103, O111, O121, O145, O157)	Any	Formulation	NA	NA	NA	NA