Neogen® Petrifilm *Salmonella* Express System – AOAC 2014.01

SCOPE

This method is applicable to:

- raw meats, meat products and carcass swabs[1]

PRINCIPLES

The Neogen® Petrifilm *Salmonella* Express (SALX) System provides a qualitative detection and biochemical confirmation of *Salmonella*. The chromogenic culture media is selective and differential for *Salmonella* and the Neogen Petrifilm *Salmonella* Confirmation Disk facilitates the biochemical confirmation of *Salmonella* species.

- **Primary enrichment**
  Raw meat sample (25 g) is enriched in 225 mL pre-warmed Neogen *Salmonella* Enrichment Base containing Neogen *Salmonella* Enrichment Supplement.

  For analysis of processed meat products, 325 g is enriched in 2925 mL of Neogen *Salmonella* Enrichment Base containing Neogen *Salmonella* Enrichment Supplement.

  For carcass sponges, Neogen *Salmonella* Enrichment Base containing Neogen *Salmonella* Enrichment Supplement is added to the moistened sponge to bring the total volume to 225 mL.

  Homogenized matrices for 2 minutes and incubated at 41.5 ± 1°C for 18 - 24 h. A positive control culture must be run through all procedures daily or when testing is carried out.

- **Selective enrichment**
  For samples with high microbial load (e.g. raw meat and carcass swab or sample that gives a total aerobic colony count of $>10^4$ cfu), a 0.1 mL aliquot of the primary enrichment is added to 10 mL of Rappaport-Vassiliadis R10 (R-V R10) broth and incubated 41.5 ±1°C for 8 -24 hours.

- **Plating out and identification**
  Cultures obtained from the selective enrichment or primary enrichment (low microbial load) are streaked in duplicate onto SALX plates and incubated at 41.5 ± 1°C for 24 ±2 hours. *Salmonella* colonies are red to brown with discrete yellow zones and /or gas bubbles.

- **Biochemical confirmation**
  Colonies of presumptive *Salmonella* are confirmed by Neogen Petrifilm *Salmonella* Express (SALX) Confirmation Disk. Circle the presumptive colonies on the plate top film then lift the top film of the SALX plate and insert the disk onto the gel and incubated 41.5 ± 1°C for 4 to 5 hours. Change in the marked colony's colour from red/brown to green blue, blue, dark blue or black or the presence of a blue precipitate is positive for *Salmonella*. No colour change is negative.

- **Confirmation**
  Positive colonies must be definitively confirmed using AS 5013.10. Confirmation must be carried out at a Department approved laboratory. Salmonella isolates must be sent to a reference laboratory for serotyping.

[1] For all other foods see AOAC 2014.01

CHECKLIST

Pre-enrichment	Is the 3M *Salmonella* Enrichment Base pre warmed to 41.5 ± 1°C?	_____
	Is the correct amount of enrichment broth and supplement used for the weight of sample analysed?	_____
	Is primary enrichment at 41.4 ± 1°C for 18-24 h?	_____
	Is a positive control run with each batch of samples analysed?	_____
	Are reference cultures inoculated into primary enrichment broth at a level of 10 to 100 cells?	_____
Selective-enrichment	Is a selective enrichment carried out using R-V R10 broth for high microbial load samples?	_____
	Is R-V R10 broth incubated at 41.5 ±1°C for 8-24 h?	_____
Plating & confirmation	Is SALX plate hydrated with 2 mL of sterile diluent and placed at room temp for at least 2 h in dark before use?	_____
	Are SALX plates incubated in stacks of <20?	_____
	What colonies are identified as presumptive *Salmonella*?	_____
	Are presumptive colonies marked with a fine marker on the top film?	_____
	Is the SALX Confirmation Disk pre warmed to room temperature before use?	_____
	Is SALX System (plate and disk) incubated at 41.5 ± 1°C for 4-5 h?	_____
	What colonies are identified as confirmed *Salmonella*?	_____
	Is media QC carried out on all new batches of 3M Petrifilm *Salmonella* Plates? (see Checklist of *E. coli* Petrifilm for QC checks)	_____
	Is final confirmation carried out using AS 5013.10 at a Department approved laboratory?	_____