

Solus One *Salmonella*

PROTOCOL: Detection of *Salmonella* in Raw Poultry and Meats

Solus One *Salmonella* is a highly efficient assay for the next day detection of *Salmonella* in food and environmental samples. The immunoassay has been developed alongside dedicated selective enrichment media and can be automated using the Dynex DS2 for a complete pathogen detection system.



■ What Can We Detect:

PerkinElmer extended the scope of the Solus One *Salmonella* ELISA method using a dedicated enrichment protocol, into a new category: Meat Products.

Within this category, the method was able to detect:

- ♦ Raw meat products, including frozen, non-frozen, seasoned (pork, beef, lamb)
- ♦ Raw poultry, including frozen, non-frozen, seasoned (chicken, turkey)
- ♦ Cured products (cured lardons, sausage, merguez, dry cured ham, salami)

■ **Certification:**

The Solus One *Salmonella* protocol for Meat products was certified against validation protocol EN ISO 16140-2 (2016): Microbiology of the food chain – Method Validation and Reference Method EN ISO 6579-1/A1 (March 2020): Microbiology of the food chain.

- ♦ Horizontal method for the detection, enumeration and serotyping of *Salmonella* spp.

■ **Application:**

The development of a dedicated enrichment protocol for the isolation and growth of *Salmonella* spp. from meat products is a significant stride in the competitiveness of Solus One *Salmonella* ELISA test scope.

Foods such as meat and poultry are most susceptible to *Salmonella* contamination with poultry accounting for 29% and meats 20% of *Salmonella* outbreaks based on the CDC National Outbreak Reporting System, 2004 - 2008.

25 g sample portions using a 1 in 10 dilution scheme were enriched with 225 ml BPW (ISO) media pre-warmed to 37 °C and supplemented with half-strength Solus One supplement, for 22 – 24 hours at 41.5 °C.

Positive results were confirmed using the conventional tests described in the standardised methods by CEN or ISO. The confirmation step must start from the non-heat-inactivated supplemented BPW sample stored at 41.5 °C or 2-8 °C. Supplemented BPW sample (10 µL) are streaked onto one agar plate (XLD or a chromogenic agar for *Salmonella* such

as Colorex *Salmonella* from Chromagar). Incubate agars as specified by standard *Salmonella* cultural protocols then perform confirmation tests: latex test F42 from Microgen or biochemical identification gallery.

Or additionally subculture the non-heat-inactivated sample (0.1 ml + 10 ml) in RVS broth and incubate for 21 - 27 h at 41.5 °C ± 1°C. Streak onto XLD or a chromogenic agar for *Salmonella* such as Colorex *Salmonella* from Chromagar. Incubate agar as specified by standard *Salmonella* cultural protocols and then perform confirmation tests e.g. Microgen latex test F42 or biochemical identification gallery directly on isolated colonies without purification step or by performing the tests described in the standardized methods (CEN or ISO).

■ **Automation:**

A single DS2 processes two 96-well plates simultaneously. As a self contained unit the Solus DS2 Automated Laboratory ELISA can process 186 samples (plus controls). The DS2 has a small footprint and fits discretely into any lab environment. The software takes the user through the procedure one step at a time, with on-screen instructions guiding them through from loading of samples to seeing test results.

All Solus assays can be fully automated, meaning you can walk away from the test once it is set up. Three units can be operated by a single technician.

The DS2 enables increased traceability and security, allowing barcode sample ID entry and electronic transfer of results to LIMS.

For more information please visit our [website](#) or email us [directly](#).