

InSite *L. mono* Glo Vividly Detects *Listeria* with Color, UV Light

Overview

InSite *L. mono* Glo detects *Listeria* species (*L. spp.*) and *Listeria monocytogenes* (*L. mono*) from surfaces in less than 48 hours. The two-part test changes color in presence of *L. spp.*, while ultraviolet (UV) light reveals pathogens like *L. mono* as well as the rare *L. ivanovii*. InSite *L. mono* Glo was evaluated for its ability to detect *L. spp.* and *L. mono* at low levels (<10 CFU), and to indicate accurate color and fluorescence indications of non-pathogenic and pathogenic *Listeria*. Validation by the Association of Official Analytical Chemists (AOAC) is expected in early 2018.

Method

Cell cultures were diluted using 10 µl volumes. Dilutions 1 through 10 were dried on two sizes of stainless steel surfaces (4" and 12" square). Swabs were incubated at 37 °C and assessed for media color change to grey/black and green UV fluorescence at 24, 30, and 48 hours.

Results

Detection levels (probability of detection, or "PoD%") are good in diluted samples at 24 hours but improve significantly at 48 hours with all levels of dilution detected. The time for negative determination of *L. mono* is 48 hours, while positive detection of *L. mono* can begin at 24 hours, depending on the level of dilution. Interim detection levels are displayed in the table below:

Table 1: Interim Results (Direct Inoculation)

Inoculum per surface	PoD% 24 hrs Black	PoD% 24 hrs Glo	PoD% 30 hrs Black	PoD% 30 hr Glo	PoD% 48 hrs Black	PoD% 48 hrs Glo
2,412,500	100	100	100	100	100	100
241,250	100	100	100	100	100	100
24,125	100	100	100	100	100	100
2,413	83	100	100	100	100	100
241	83	75	100	100	100	100
24	60	50	100	100	100	100
3	33	0	83	75	83	100
0	0	0	12	0	12	25
0	0	0	0	0	0	0

Conclusions

Both *L. spp.* and *L. mono* were detectable below 10 CFUs, making *L. mono* Glo a reliable detection method for *Listeria*.

- The color formed for *L. spp.* is vivid black. Fluorescence under UV light is vivid green, and easier to differentiate from reflected white fluorescence.
- Negative determination of *L. mono* (and possible *L. ivanovii*) is at 48 hours.
- There was no difference in detection between smaller and larger steel surfaces.