Validation and Application of FLASH Rapid Protein Detection Test

FLASH® is a rapid total protein detection test which serves as verification for adequate removal of proteinaceous matter, including allergens, on manufacturing surfaces.

Monitoring adequate removal after cleaning allows for immediate corrective action and reduces the potential risk for cross-contamination of product and food safety incidents, especially during change-overs.

FLASH is a self-contained sampling device containing a pre-moistened tip and all necessary reagents. It is designed with two levels of sensitivity to accommodate varying industry needs. When used at room temperature, FLASH can detect as little as 20 µg of total protein within 10 minutes. If greater sensitivity is needed, such as prior to processing critical products or when sampling key manufacturing areas, FLASH can be incubated for 10 ± 4 minutes in a dry heat bath at 70 °C for detection down to 3 µg of total protein.

Simple To Use:

SWAB
Sample a 4 x 4 in (10 x 10 cm) surface

ACTIVATE
Activate swab and shake for 5 seconds

READ
Use chart to interpret result (Pass, Caution or Fail)

Sensitivity Validation & Performance

In an in-house study, FLASH was tested against common allergenic proteins covering the Food Safety and Inspection Service's (FSIS) "Big 8", as well as against total proteins such as raw ground beef and raw ground turkey. Refer to Table 1 for study results, which indicate the approximate level where tests began showing a positive (Fail) result. All proteins tested were detected by FLASH with an average detection level of 20 µg at room temperature and 3 ug at 70 °C.

Table 1 – FLASH Detection of Proteins in Foods (µg)

Protein	At Room Temp	Incubated (70 °C)
Milk Powder	13	1.3
Raw Ground Turkey	15	6
Soy Flour	16	1.6
Peanut Butter	17	1.1
Egg Powder	17	1.3
Raw Fish (Cod)	18	5.4
Roasted Almonds	21	2.1
Raw Shrimp	24	4.8
Raw Ground Beef	26	7.8
Gluten Flour	30	3.8
Average	20	3.5

Results Interpretation

FLASH is a qualitative visual test interpreted via color change. All tests are initially green to start. The solution will remain green if no protein is detected. The solution will turn an increasing shade of purple with increasing amounts of protein detected.

If the solution turns grey, trace amounts of protein are detectable. The surface should be re-cleaned and then re-tested per SSOP's before proceeding.

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