

Micro-Snap A new light on Pathogen Detection

The Micro-Snap Enrichment Swab is a rapid test for enumeration of Coliforms and E.coli. This is a 2 step procedure and results are obtained in 7 hours. Swab a 10 x 10 cm area or prepare a suspension and transfer to the Enrichment swab as per instructions and incubate for 7 hours. After incubation, transfer 100ul from the Enrichment Swab to the fill line on the Detection Device (Part#: MS-CC100 for Coliforms or MS-EC100 for E.coli). Activate Detection Device with a snap and a squeeze. Incubate for 10 minutes at +37°C. Insert the Detection Device into the SystemSure Plus or Ensure meter and interpret the results. The System uses a novel bioluminogenic test reaction that generates light when enzymes that are characteristic of specific bacteria react with specialized substrates to produce light. The light generating signal is then quantified in our SystemSure Plus or EnSURE Luminometer.

Features & Benefits:

- 100 swabs per case
- Self contained devices provide ease of use
- Unique liquid-stable reagent provides high sensitivity and repeatability
- Uses proven conventional diagnostic properties
- Independent of sample effects
- No special sample preparation required
- 2 step procedure
- Simple pass/fail result at desired specification
- Quantitative result by kinetic measurement
- Results obtained between 3 - 7 hours
- Equivalent results to other cultural methods
- Low level detection (1 - 5 organisms)
- Repeat testing on same enrichment sample
- Faster quality assurance response and product release.

Applications Include:

- Surface swabbing
- Raw material and finished product testing
- Solids, liquids and filterable products
- Food & Beverage; dairy, cosmetics & pharma and water
- Indicator and pathogenic bacteria e.g. Part#: ATP-CC100 detects Coliforms, Part#: ATP-EC100 detects E.coli



Part Numbers and Description:

- Part#: ATP-ES100** Enrichment Swab
Part#: ATP-CC100 MicroSnap Detection Device for Coliforms
Part#: ATP-EC100 MicroSnap Detection Device for E.coli
Part#: ATP-201 SystemSure Plus Luminometer
Part#: ATP-205 EnSURE Luminometer
Part#: ATP-600 Incubator, pre-set to +37C, 11 wells
Part#: TM4 Loud Alarm Timer

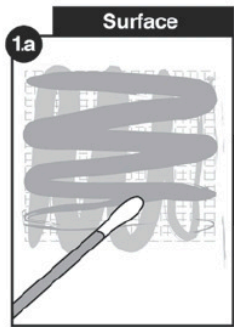
Results in 4-7 Hours

Incubation Time (hours)	Inoculum Detected
1	500,000
2	100,000
3	10,000
4	1,000
5	100
6	10
7	1-5



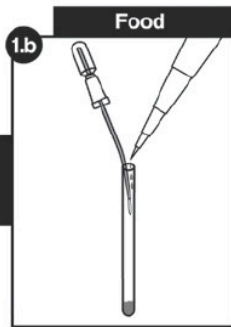
1295 Morningside Avenue, Unit 16-17
Scarborough, ON M1B 4Z4, Canada
Phone: 416-261-4865 Fax: 416-261-7879
www.scigiene.com

How to Use: Product & Environmental Surfaces

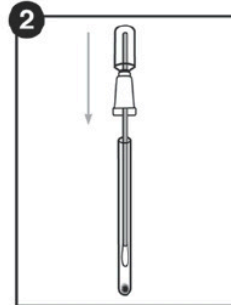


With [Enrichment Swab](#), swab a 10 x 10 cm area

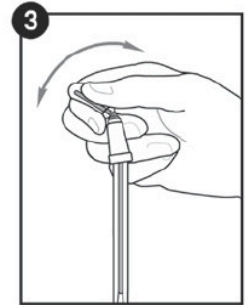
or



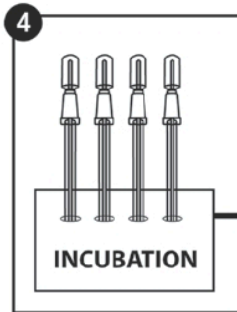
Add 1 ml of a 10% food homogenate (sample) to [Enrichment Swab](#) tube



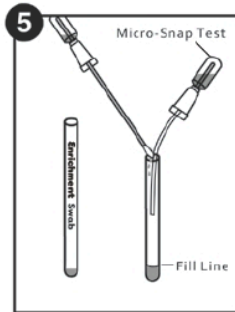
Reinsert Snap-Valve bulb into Swab tube



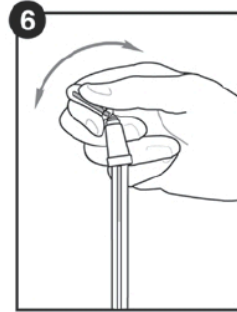
Bend bulb, snapping the snap valve rod and squeeze to release and mix sample



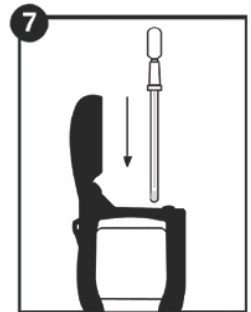
Incubate for 4-7 hours At +37C in [Dry Block Incubator](#)



Transfer 100 µl or 3 drops from [Enrichment Swab](#) to fill line on the [Micro-Snap Test](#), #ATP-CC100 For Coliforms & #ATP-EC100 For E.coli

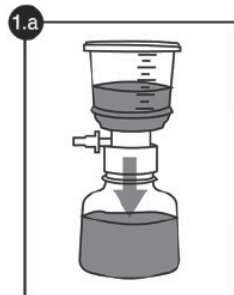


Bend Micro-Snap bulb to break Snap-Valve rod and squeeze. Incubate at +37C for 10 minutes in [Dry Block Incubator](#)



Read RLU in [EnSURE](#) Interpret the results at Pass/Fail thresholds

How to Use: Water & Filterable Liquids

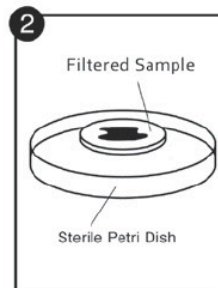


Filter sample through a 0.45 micron filter

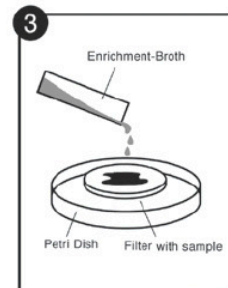
or



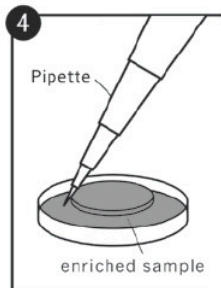
Filter sample through a 0.45 micron syringe Filter



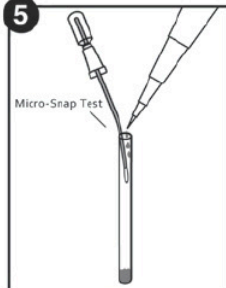
Aseptically remove the filter after filtration and place it in a sterile Petri Dish



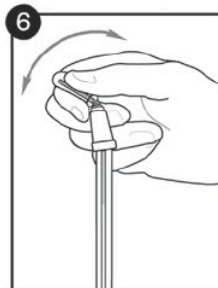
Add 2 ml of Enrichment Broth to the Petri Dish



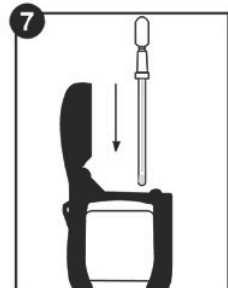
Incubate for 4-7 hours at +37C in [Incubator](#) and aseptically remove 100 µl



Transfer 100ul of enriched sample to the [Micro-Snap test](#), [ATP-CC100](#) or [ATP-EC100](#)



Bend Micro-Snap bulb to break Snap-Valve rod and squeeze. Incubate at +37 for 10 minutes in [Dry Block](#)



Read RLU in [EnSURE](#) Interpret the results at Pass/Fail thresholds

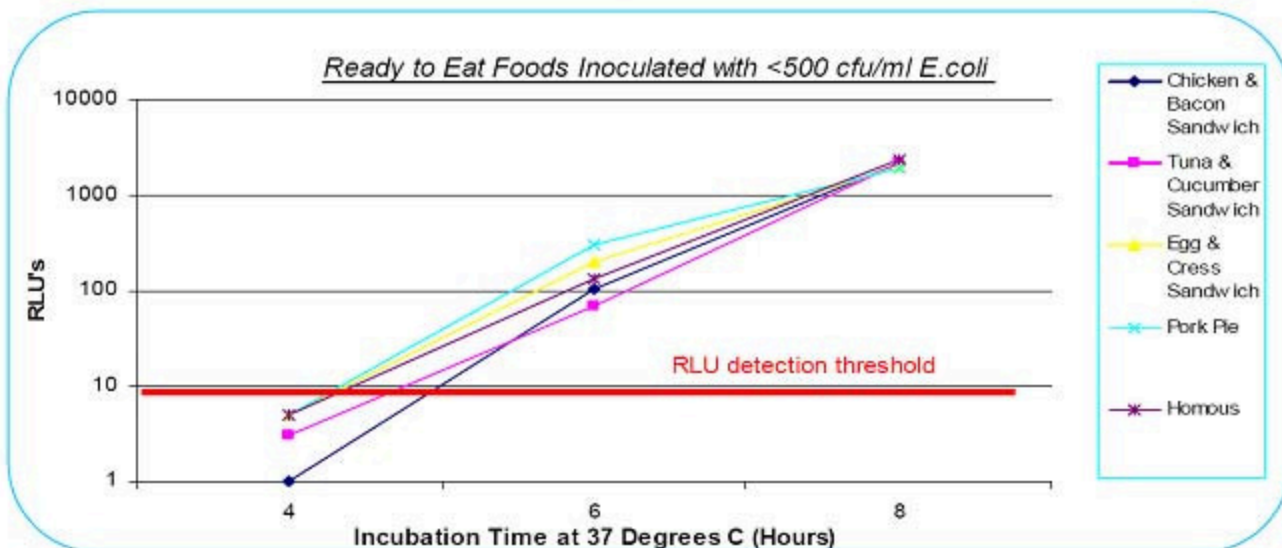
Results & Interpretation

Incubation Time (37C)	Lowest Possible Inoculum Level Detected*
1 hour	500000
2 hours	100000
3 hours	10000
4 hours	1000
5 hours	100
6 hours	10
7 hours	1-5

*based upon following organisms – mixed Enterobacteriaceae from chicken, mixed Enterobacteriaceae from lettuce, mixed Enterobacteriaceae from minced beef, E.coli ATCC 25922, E.coli ATCC 9001, Klebsiella pneumonia ATCC 13883, Citrobacter freundii ATCC 8090, Enterobacter cloacae ATCC 8168. Assay time based upon 10 minutes post incubation time.

Threshold Verification

	Ensure RLU
Mean of Negatives (n=290)	2.80
SD of Confirmed Negatives	2.72
Threshold Mean Negatives + 3 SD (99.73%) (n=290)	10.00



This graph represents the limit of detection of [MicroSnap](#). A range of ready-to-eat foods were inoculated with 500 cfu/ml of Escherichia coli and tested at given intervals. Results show that significant levels of E.coli were detected after only 5 hours.

Method and Time to Results	MicroSnap 10 cfu.g or ml 7 hours + 10 minutes % positive	Traditional Method (VRBG) ISO 16140 24 hours % positive
50 food types from 5 food groups, (Meat, RTE, Salads, Milk and Dried Food)	99	95

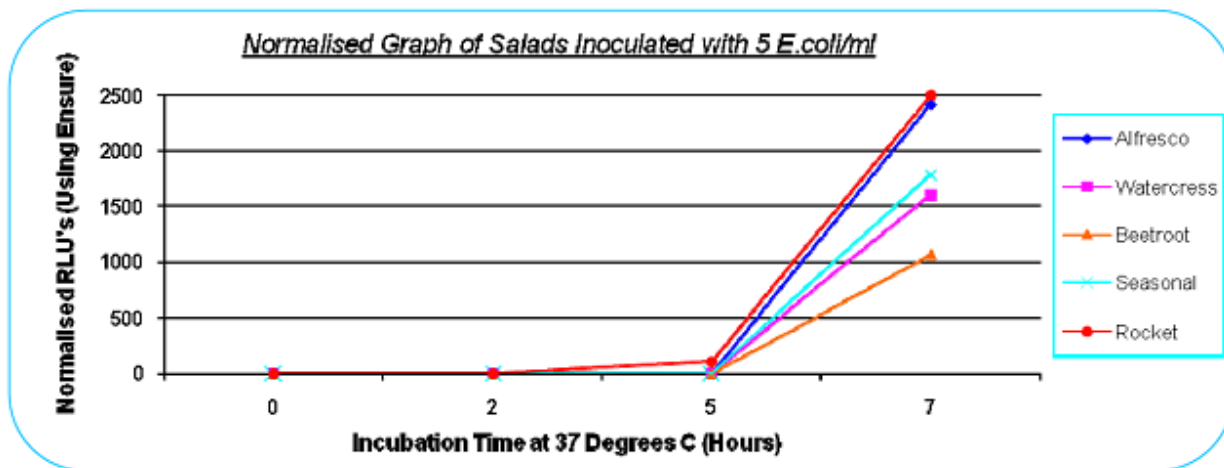
[MicroSnap](#) is more accurate than traditional methods and yields results in significantly less time.

Results & Interpretation

	Coliforms MicroSnap, ATP- CC100	E.coli MicroSnap, ATP- EC100
Sensitivity/NPV (%)	94	89
Specificity/PPV (%)	99	100

Third party validation shows sensitivity and specificity of the [MicroSnap](#) devices is excellent and better than traditional and convenience microbiological methods. **Sensitivity** can be defined as the ability of a method to detect a target organism compared to the ability of the reference method. **Specificity** can be defined as the ability of the method to detect only the target organism, and not suffer interference from non-target organisms, compare to the reference method.

	Testing Method for E.coli detection		
	Petrifilm EC	DryCult Coli	MicroSnap
Sensitivity (%)	40	33	89
Specificity (%)	91	79	100



At very low level contamination Micro-Snap clearly detects the organisms in food matrices.

Summary

The new bioluminogenic technology has been proven to:

- + Detect specific bacteria
- + In low numbers (1-5)
- + In 7 hours
- + In a variety of samples

*Data taken from - Hörman, A., Hänninen, M-L. (2006). *Evaluation of the lactose Tergitol-7, m-Endo LES, Collert 18, Readycult Coliforms 100, Water-Check-100, 3M Petrifilm EC and DryCult Coliform test methods for detection of total coliforms and Escherichia coli in water samples.* Water Research. 40 (17), 3249-3256.



1295 Morningside Avenue, Unit 16-17
 Scarborough, ON M1B 4Z4, Canada
 Phone: 416-261-4865 Fax: 416-261-7879
www.scigiene.com