

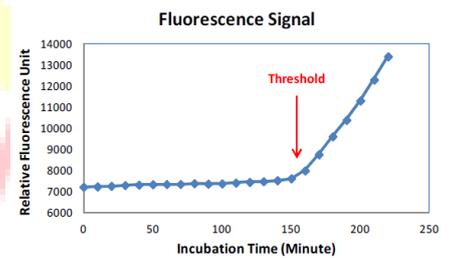
E.coli Handheld Detection Kit

Description:

The convenient E.coli field detection kit utilizing the handheld fluorometer with built-in thermal heater for *in-situ* incubation-and-detection. After the sample is prepared in the 0.5-mL sample tube, it is placed in the handheld fluorometer maintained at 38°C for incubation. During the incubation procedure, the E.coli bacteria release an enzyme which reacts with the incubation media to produce a fluorescence signal and detected by the fluorometer. If the signal growth reaches a pre-defined threshold, a positive test is confirmed. Due to the high sensitivity of the fluorometer, single CFU can be detected within as short as 12 hours of incubation. The *in-situ* detection also provides the early-warning capability for users to identify the presence of E.coli within a shorter time if the quantity of E.coli is higher. By using the “threshold time” of signal growth, one can also quantitatively determine the “equivalent CFU number” of healthy E.coli bacteria in the original sample.

Assay Performance and spec:

- Can be applied to swab surface test, or liquid test (0.5-mL/sample).
- Rapid, convenient, and sensitive. (Semi-quantitative possible.)
- Highly portable field kit using handheld meter for measurement (using AC adaptor or car power supply).
- Sensitivity: 100-CFU/sample after 10 hours of Incubation, or 1-CFU/sample after 12 hours of incubation.
- 2 sets of data can be downloaded to computer through USB interface for analysis.
- Multiple-samples test possible if use separate incubator.



Content of the E.coli Assay Kit (50 tests):

- Growth Media Powder: 1.0 gram
- Sample Plastic Vials: 50 pcs
- Rayon Swab: 50 pcs
- Disposable water transfer pipet: 50 pcs

Assay Procedure:

Turn on the fluorometer to let the internal heater warm up to 38°C.

I. For Preparing Samples Collected from Surface:

1. Prepare incubation media solution: Dissolve 0.013-g of incubation Media Powder into every 1-mL of distilled water in a sterilized container. Mix thoroughly.
2. Pipette 500- μ L of the above incubation media solution into a Sample Plastic Vial.
3. Put a few drops of the incubation media on a sterile rayon swab, and collect the bacteria sample by swabbing the test area surface. (Note: follow proper swabbing techniques to obtain the optimum sample).
4. Place the swab tip into the Sample Plastic Vial. Agitate to mix the solution with the swab, and then squeeze the swab on the Vial wall to release as much liquid as possible. Secure the vial cap. **Go to Step 5.**

II. For Preparing Samples from Water Source:

1. Prepare concentrated incubation media solution: Add 150 mg of Growth Media Powder into 1-mL of distilled water in a sterilized container. Mix thoroughly. The media solution can be stored at 4°C for up to 1 weeks.
2. Pipette 0.45 mL of water sample into a Sample Plastic Vial, then add 0.05 mL of the concentrated incubation media solution into the vial. Mix the content by inversion thoroughly. **Go to Step 5.**

III. Testing Procedures:

5. After the fluorometer warms up to 38°C as indicated on the Main screen, place the Sample Plastic Vial in the fluorometer. Cover the cap and press the “Measure” button.
6. Select [Assay 1], then press [Measure]. The meter will start taking measurement every 10 minutes. (The 4th row shows current reading, and 2th row shows increment.)
7. Wait for 12 hours (or shorter). If the screen shows “Positive” during or at end of incubation, the sample is positive. Otherwise, the screen will show “Negative” at end of 12 hours.
8. If the test is positive, using the “Test Number” as shown on the upper-right corner of the screen, one can refer to the table to the right to semi-quantitatively determine the “equivalent” CFU number of healthy bacteria in the original sample.
9. After the test, one can repeat [Return] all the way back to the Main screen, and then press [Date] to inspect the fluorescence measurement data saved on the selected Assay number.

Test Number	CFU/Sample	Test Number	CFU/Sample
7	18,000,000	41	510
8	12,000,000	42	400
9	8,500,000	43	320
10	5,900,000	44	240
11	4,100,000	45	200
12	2,900,000	46	170
13	2,000,000	47	130
14	1,400,000	48	110
15	1,000,000	49	89
16	710,000	50	74
17	510,000	51	61
18	360,000	52	51
19	260,000	53	42
20	190,000	54	36
21	140,000	55	30
22	99,000	56	25
23	72,000	57	21
24	53,000	58	18
25	39,000	59	15
26	29,000	60	13
27	21,000	61	11
28	16,000	62	9
29	12,000	63	8
30	8,900	64	7
31	6,700	65	6
32	5,100	66	5
33	3,900	67	4
34	2,900	68	3
35	2,300	69	3
36	1,700	70	2
37	1,300	71	2
38	1,000	72	2
39	820	73	1
40	640		

* [Assay 2] is reserved for future purposes, and its reading is 10% of [assay 1] and won't trigger “Positive” as specified. If there is power interruption during test, or user turns off to stop a test, after the power returns, a “Resume” screen will allow the user to abort the test in 10 seconds, or the test will continue from where it stopped.