PRODUCT INFORMATION

Product Type: Tubes

Cat No. TT146 - HY ENTEROTEST

Intended Use:

Hy-Enterotest® provides a rapid, simple and economic method for differentiating the *Enterobacteriaceae,* especially the enteropathogenic bacteria.

Principles and uses:

By the classical methods one would need at least three tubes (Kligler or triple sugar iron agar, Urease test broth and SIM) as well as a test for ONPG to arrive at the same result as Hy-Enterotest. Most of the newer methods available on the market are expensive and oblige the user to do a series of unnecessary tests and complicate the whole differentiation procedure, and do not give two essential elements, namely:

a) Motility

b) Bacterial growth for further biochemical or serological tests when necessary. Hy-Enterotest gives seven essential tests:

1. Indole production.
2. ONPG (hydrolysis) degradation.
3. Glucose fermentation (acidity without gas).
4. Glucose fermentation with CO2 gas formation.
5. Hydrogen Sulfide production.
6. Motility
7. Urea (hydrolysis) degradation, as well as -
8. Bacterial growth for further biochemical and serological tests.

Hy-Enterotest requires using the well-practiced method known to microbiologists for many years, namely stabbing a butt and smearing a slant. No gimmicks, no complicated gadgets, just classical microbiological methods are needed.

By Hy-Enterotest all stool cultures are resolved in a short time (18 hours from peaking of suspect colony), specifically the *Salmonellae* and *Shigellae* are differentiated and an indication to the wise and economic use of diagnostic antisera is given.

With Hy-Enterotest, *Yersinia* is not confused with *Proteus*. By Hy-Enterotest, all urine cultures are screened and, in some cases, only one further biochemical test is required for final identification.

By-Hy-Enterotest food microbiologists can determine rapidly the entero-pathogens and some other bacteria contaminating food and food processing areas.

Hy-Enterotest makes the differentiation of *Enterobacteriaceae* simpler at no extra cost to the classical methods and cheaper than the "Over Kill" methods available on the market.

Hy-Enterotest is not only sound microbiology but is also sound economics for the following reasons:

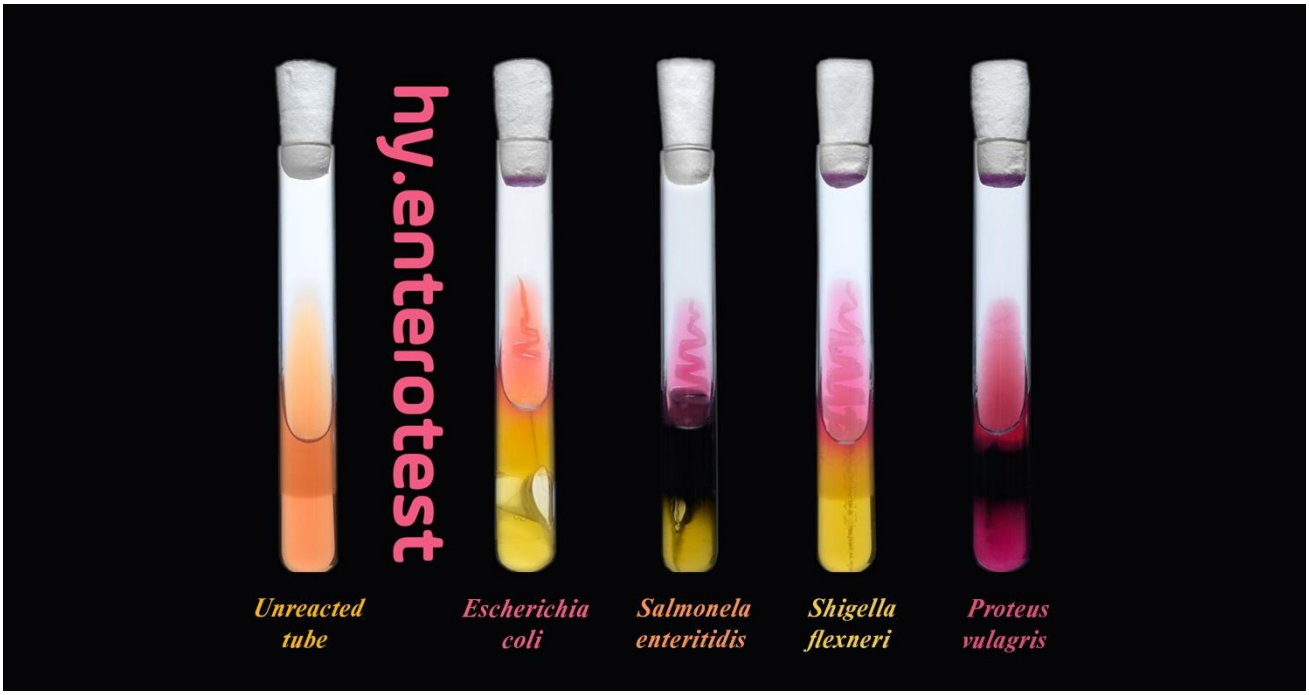
1. Uses one simple tube instead of three by classical methods.
2. Saves labor in marking and inoculating samples-once instead of three times.
3. Saves incubating space - one third, a handy space-saving tray is provided.
4. Saves manpower in reading results - one tube instead of three.
5. Reduces requirements for costly agglutination tests.
6. Minimizes the need for further biochemical tests.

In short **Hy-Enterotest** extends the services of the laboratory, without extending the budget.
Shipped in trays of 10 with indole strips ready for immediate use.

Method: Stab and smear in

Instructions for use:

1. Pick a suspect colony from appropriate culture.
2. Stab a tube of HY-Enterotest to the bottom and streak well on the slant.
3. Attach indole strip to the cap.
4. Replace cap lightly to allow free passage of gas
5. Incubate at 37°C for 18-24 hours.
6. Read results and compare to chart provided.



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Implementation Date: 08/12/25
Version Number: 03

Differentiation of Enterobacteriaceae by Hy-Enterotest at 35°±2°C for 18 - 24 h.

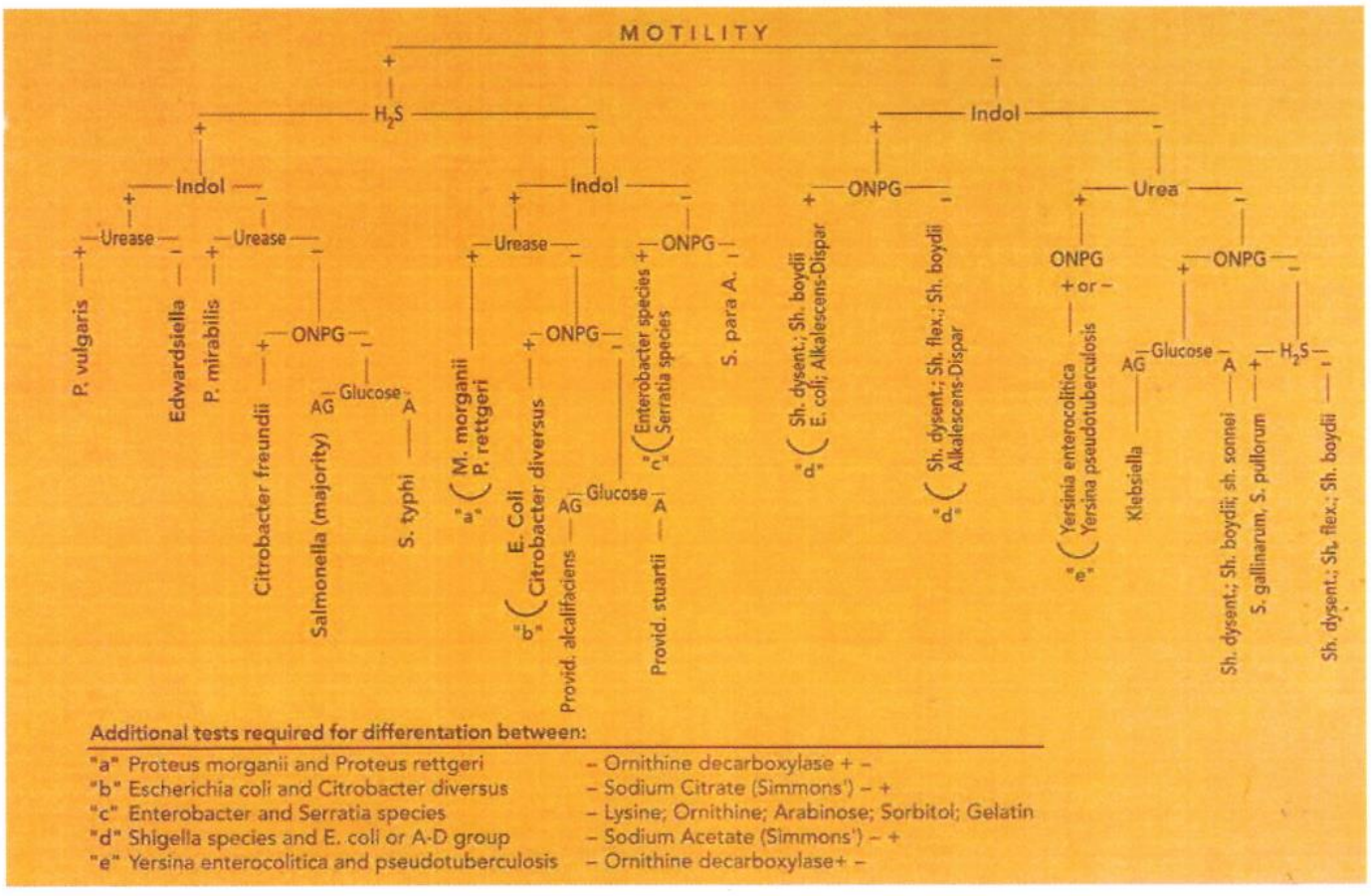
Combined Medium			Citrobacter		Edwardsiella	Enterobacter			Escherichia	Hafnia	Klebsiella		Morganella	Proteus		Providencia			Salmonella				Serratia			Shigella		Yersinia	
			freundii	diversus	tarda	aerogenes	agglomerans	cloacae	coli	alvei	pneumoniae	oxytoca	morganii	mirabilis	vulgaris	alkalifaciens	rettgeri	stuartii	most serotypes	choleraesuis	typhi	paratyphi A	marcescens	liquefaciens	rubidaea	O groups A,B,C	sonnei	enterocolitica	pseudotuberculosis
Stopper	Indol		-or+	+	+	-	-or+	-	+	-	-	+	+	-	+	+	+	+	-	-	-	-	-	-	-	- +	-	-or+	-
	Slant	ONPG	+	+	-	+	d	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-or+	d	+	-	+	+or-	+or-
Upper Layer	Butt	Glucose	AG	AG	AG	AG	A or AG	AG	AG	AG	AG	AG	AG* or A	AG*	AG* or A	AG	A or AG*	A	AG	AG	A	AG	AG or A	AG or A	A or AG	A	A	A*	A*
		H_2S	+	-	+	-	-	-	-	-	-	-	-	+	+	-	-	-	+	+ -	(+)	-	-	-	-	-	-	-	-	-
Lower Layer	Motility		+	+	+	+	+or-	+	+or-	+	-	-	+or-	+	+	+	+	+	+	+	+	+	+	+	+or-	-	-	-*	-*
	Urea		-	-	-	-	-or (+)	-or (+)	-	-	-or (+)	-or (+)	+	+	+	-	+	-	-	-	-	-	-	-	-	-	-	+	+

\+ Positive in one day
(+) Positive weekly
\- Negative
d Different

When + or - most organisms are +
When - or + most organisms are -

A - Acid
AG - Acid with gas

* Motility observed at 25°C
* Urease activity masks glucose fermentation. For Yersiniae the color is less red than for Proteae



Additional tests required for differentation between:

"a" Proteus morganii and Proteus rettgeri	– Ornithine decarboxylase + –
"b" Escherichia coli and Citrobacter diversus	– Sodium Citrate (Simmons') – +
"c" Enterobacter and Serratia species	– Lysine; Ornithine; Arabinose; Sorbitol; Gelatin
"d" Shigella species and E. coli or A-D group	– Sodium Acetate (Simmons') – +
"e" Yersina enterocolitica and pseudotuberculosis	– Ornithine decarboxylase+ –

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Formula:
Urea, enrichments, sodium chloride, agar, phenol red indicator, dextrose, ONPG, ferrous sulfate, sodium thiosulfate.

Composition:
Tryptone 59.2 G/L
Beef Extract 61.6 G/L
Meat Peptone 75.6 G/L
Yeast Extract 27.2 G/L
Agar 58.4 G/L
Bacteriological Peptone 123.2 G/L
Plant Propagation Agar 100.4 G/L
Dextrose (Glucose) 8 G/L
Ferrous Sulfate $7h_2o$ 4.8 G/L
Sodium Thiosul.$5h_2o$ 4.8 G/L
Sodium Chloride 74.8 G/L
ONPG* Sol. For TT146 800 Ml/L
Urea Solution 50% 72 Ml/L
Phenol Red Sol. 0.2% 109.5 Ml/L

*** ONPG* Sol. For TT146**

$Na_2HPO_4,2H_2O$ 28.476 g/L
$NaH_2PO_4,2H_2O$ 16.644 g/L
ONPG= 2-Nitrophenyl-beta-D-galactopyranoside 4 g/L

Storage: 15°-25°C
Package contents:

1. 20 test tubes
2. Indole strips
3. instructions for use
4. interpretation of results

Appearance: Light pink orange
pH Range: 6.8 - 7.2
Exp. Date: Printed on label and on the item.
Required materials not supplied: Laboratory equipment as required.

Warning and Precautions:
Warning and Precautions - For professional use only. Follow good microbiological lab practices while handling specimens and culture. Do not use Tubes if they show evidence of microbial contamination, discoloration, drying, cracking, or other signs of deterioration. Avoid freezing and overheating. The Tubes may be used / inoculated up to the expiration date and incubated for the recommended incubation times. After use and prior to discarding, specimen containers and all contaminated material, including the used culture media and contaminated culture containers, must be sterilized or incinerated by validated procedures. Since the nutritional requirements of organisms vary, some strains may be encountered that fail to grow or grow poorly on this medium.

Waste Disposal
After interpretation all items should be destroyed by standard incineration methods.

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Performance Testing Results:

Test	ATCC NO	Incubation Temp. (℃)	Incubation Cond.	Reaction 1	GAS	GLC	H2S	INDOLE	MOTILITY	ONPG	UREA
Escherichia coli	25922	33-37 ℃	Aerobic, 24 hours	Growth	+	+	-	+	+	+	-
Enterobacter aerogenes	13048	33-37 ℃	Aerobic, 24 hours	Growth	+	+	-	-	+	+	-
Klebsiella pneumoniae	13883	33-37 ℃	Aerobic, 24 hours	Growth	+	+	-	-	-	+	- (**)
Salmonella typhimurium	14028	33-37 ℃	Aerobic, 24 hours	Growth	+	+	+	-	+	-	-
Salmonella typhi	W.S	33-37 ℃	Aerobic, 24 hours	Growth	-	+	+	-	+	-	-
Shigella flexneri type 29	29903	33-37 ℃	Aerobic, 24 hours	Growth	-	+	-	+	-	-	-
Shigella sonnei	29930	33-37 ℃	Aerobic, 24 hours	Growth	-	+	-	-	-	+	-
Proteus mirabilis	4630	33-37 ℃	Aerobic, 24 hours	Growth	NA	- (*)	+	-	+	-	+
Proteus vulgaris	33420	33-37 ℃	Aerobic, 24 hours	Growth	NA	- (*)	+	+	+	-	+
Yersinia enterocolitica	9610	33-37 ℃	Aerobic, 24 hours	Growth	-	-	-	+	-	-	+ (***)

(*) Urease reaction masks glucose reaction.

(**) Positive after 48 hours.

(***) Weak reaction.