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Product Information

53275 Hippurate Broth

For the demonstration of hippurate hydrolysis (*Campylobacter jejuni*).

Composition:

Ingredients	Grams/Litre
Hippurate	10.0

Store prepared solution below -15°C. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance:	White, homogeneous, free flowing powder.
Gelling:	Firm
Colour and Clarity:	Colourless, clear solution

Directions:
Dissolve 0.5 g in 50 ml water and sterile filter through a 0.2 μm membrane filter. Dispense aseptically into srew-cap tubes (0.5 ml/tube).

Principle and Interpretation:
Hippurate hydrolysis is the only biochemical test to distinguish *Campylobacter jejuni* and *Campylobacter coli*. (1)
In most cases *C. jejuni* hydrolyses hippurate into benzoic acid and glycine and *C. coli* does not though it has been shown that there are exceptions to this general rule. (2,3)
The hippuricase rapid test was developed by Hwang and Ederer for the identification of group B Streptococci (4).
Later the same principle was applied for *Campylobacter* differentiation by Harvey et al (1).
After having isolated putative *Campylobacte*r cultures for example by means of Karmali Campylobacter Agar (Cat. No. 17152) Hippurate Broth can be used to determine whether a specific strain shows hippuricase activity.

Prepare a 1% sodium hippurate solution, pass it through a sterile filter (0.2 μm) and dispense aseptically in 0.4-0.5 ml portions. This solution can be frozen until needed. Emulsify a large loopful of putative *Campylobacter* culture in the substrate and incubate for 2 hours in a heating block at 37°C. Glycine can be detected by incubating the solution for another 10 min with 0.2 ml of a 3.5% solution of ninhydrine (PNo. 151173) in a 1:1 mixture of acetone and butanol where a deep purple colour indicates the presence of glycine and thus of hippuricase activity.
Alternatively glycine can be identified by thin layer chromatography (1).

Organisms (ATCC)	Hippurate hydrolysis after 2 hours
Campylobacter jejuni (29428)	+
Campylobacter coli (33559)	-

References:

1. S.M. Harvey, Hippurate hydrolysis by Campylobacter fetus, *J. Clin. Microbiol.* 11, 435, (1980)
2. Steinhauserova et al., Identification of Campylobacter spp by phenotypic and molecular methods. J Appl Microbiol. 90-470-5 (2001)
3. Rautelin et al., Identification of hippurate-negative thermophilic campylobacters Diagn Microbiol Infect Dis. 35:9-12 (1999)
4. Hwang and Ederer, Rapid hippurate hydrolysis method for presumptive identification of group B streptococci. J. Clin. Microbiol. 1:114-115 (1975)