

SELENITE BROTH

Powdered and ready to use enrichment liquid medium
for the detection of *Salmonella* spp. in clinical specimens.

TYPICAL FORMULA (g/l)

Tryptone	5
Lactose	4
Sodium Phosphate Bibasic	10
Sodium Acid Selenite	4

SELENITE BROTH BASE

Powdered enrichment liquid medium base, without sodium selenite,
for the detection of *Salmonella* spp. in clinical specimens.

TYPICAL FORMULA (g/l)

Tryptone	5
Lactose	4
Sodium Phosphate Bibasic	10

DIRECTIONS FOR POWDERED MEDIA

Selenite Broth: Suspend 23g of Selenite Broth in 1000ml of cold distilled water, warm until complete dissolution and distribute into sterile tubes. Do not overheat or autoclave.

After a long storage period of the dehydrated medium, the colour of the prepared broth might change to reddish/red. The microbiological performance however is not affected.

Final pH 7.0 ± 0.1

Selenite Broth Base: dissolve 4g of Sodium Biselenite (REF 4123651) in 1 litre of cold distilled water and then add 19g of Selenite Broth Base. Warm until complete dissolution and distribute into sterile tubes.

Final pH 7.0 ± 0.1

Selenite Broth Base is prepared to minimise any possible risk to laboratory workers.

DESCRIPTION

Selenite Broth is recommended for the selective enrichment of *Salmonella* spp. in clinical specimens. The medium is prepared in accordance with the formula described by Leifson and recommended by the APHA.

Sodium Selenite possesses a high level of toxicity at a neutral pH for *Escherichia coli*, but not for the major part of microorganisms belonging to the *Salmonella* group. A buffer system is present in the medium, which tends to minimise the alkalinising effects induced by the reduction of sodium selenite. These alkalinising effects would notably diminish the selective properties of the medium. The acids produced by the microorganisms from lactose also contribute by neutralising the alkaline reactions of the medium. Selenite Broth is toxic for *Salmonella cholerae-suis* and for *Salmonella abortus-ovis*. The preliminary enrichment of samples to be examined in Selenite Broth followed by inoculation onto plates of one or more selective media considerably increases the number of positive results with regard to the isolation of *Salmonella*.

TECHNIQUE

For faeces examination, inoculate test tubes containing 8-10ml of medium with 1g of faeces, or 1ml of faecal suspension. It is common practice to emulsify 2-3g of solid specimen to 15ml of saline solution and then withdraw approximately 1ml of the supernatant and inoculate 10ml of Selenite Broth. For the examination of urine samples, Selenite Broth must be used at double concentration dispensed in amounts of 5 - 7.5ml for each test tube, and inoculated with an equal volume of sample.

After a vigorous emulsification of the inoculum, incubate for 6-12 and if necessary for 18-24 hours at 35-37° then streak onto two selective plating media: Bismuth Sulphite Agar, MacConkey Agar, Desoxycholate Citrate Agar, SS Agar, XLD Agar, Hektoen Enteric Agar. The plating media should be chosen as a combination of greater and little selectivity. For the isolation of *Salmonella*, including *Salmonella typhi*, it is advisable to use as plating medium Bismuth Sulphite Agar, and to inoculate two

plates, the first by streaking the inoculum on the surface and the second with a poured plate technique. Selenite Broth, after the growth of *Salmonella*, presents a pink colour.

USER QUALITY ASSURANCE (37°C - 24hrs, subculture on TSA)

Productivity Control

S.typhimurium ATCC 14028*: growth

Selectivity control

E.coli ATCC 25922*: partially or completely inhibited

*NCCLS M22-A2 recommended strains

STORAGE

Selenite Broth, dehydrated medium: 2-8°C

Selenite Broth Base, dehydrated medium: 10-30°C

User prepared tubes: 7 days at 2-8°C

REFERENCES

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- Chattopadhyay, B. and J.N. Pilfold (1976. Med. Lab. Sci. 33, 191-194.
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- Leifson, E. (1936) Am. J. Hyg. 24, 423-432.
- NCCLS document M22-A2, 1996. Quality Assurance for Commercially prepared Microbiological Culture Media-Second Ed.; Approved Standard.
- Price, T.H. (1976) J. Hyg. Camb. 77, 341-348.
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PACKAGING

4020252	Selenite Broth	500g (21.7 l)
4020254	Selenite Broth	5kg (217 l)
552025	Selenite Broth	20 x 9 ml ready to use tubes
5120252	Selenite Broth	6 x 100ml ready to use flasks
402025B2	Selenite Broth Base	500g (26.3 l)
402025B4	Selenite Broth Base	5kg (263 l)