MULLER-KAUFFMANN TETRATHIONATE-NOVOBIOCIN BROTH (MKTTn)

CODE: CM1048

Muller-Kauffmann Tetrathionate-Novobiocin Broth (MKTTn) is a selective enrichment medium for the isolation of Salmonella when used with Novobiocin Selective Supplement (SR0181).

Typical Formula*	**gm/litre**
Meat extract	4.3
Enzymatic digest of casein	8.6
Sodium chloride	2.6
Calcium carbonate	38.7
Sodium thiosulphate (anhydrous)	30.5†
Ox bile	4.78
Brilliant green	0.0096
pH 8.0 ± 0.2 @ 25°C	

*** Adjusted as required to meet performance standards**
† Equivalent to 47.8g of sodium thiosulphate pentahydrate

Directions
Suspend 89.5g of MKTTn in 1 litre of distilled water, mix well and bring to the boil. Cool to below 45°C. Immediately before use add 20ml of iodine-iodide solution prepared by dissolving 25g of potassium iodide in 10ml of water, adding 20g of iodine and then diluting to 100ml with sterile water. Also add the contents of four vials of Oxoid Novobiocin Selective Supplement SR0181 reconstituted as directed. Mix well and aseptically dispense into sterile containers.

Description
MKTTn was developed by Muller[2] and later modified by Kauffmann[3,4] with the addition of ox bile and brilliant green to improve selectivity. The addition of novobiocin at 40mg per litre was later described by Jeffries[5] to improve inhibition of *Proteus* species.
MKTTn is a selective enrichment medium for the isolation of *Salmonella*; the formulation conforms to ISO 6579:2002[1].

Technique
After the sample has been incubated in BPW (ISO) CM1049, transfer 1ml of the broth to 10ml of MKTTn Broth and 0.1ml into 10ml of RVS Broth CM0866. Incubate the MKTTn Broth at 37°C ± 1°C for 24 hours ± 3 hours and the RVS Broth at 41.5°C ± 1°C for 24 hours ± 3 hours. Subculture the incubated MKTTn and RVS broths onto XLD Agar CM0469 and a second agar medium of choice and incubate for a further 24 hours ± 3 hours at 37°C ± 1°C. Presumptive Salmonella should be confirmed using appropriate biochemical and serological techniques. For the complete method please refer to ISO 6579:2002[1].

Storage conditions and Shelf life
Store the dehydrated medium at 10-30°C and use before the expiry date on the label.

Store the prepared media at room temperature. The prepared medium in its final form containing iodine/iodide solution + Novobiocin Selective Supplement SR0181 should be used immediately.

Appearance
Dehydrated medium: Pale green, free-flowing powder
Prepared medium: Pale green, opaque suspension which on standing gives a heavy deposit

Quality control

Positive control:	**Expected results**
Salmonella typhimurium ATCC® 14028 *	Good growth†
Negative controls:	
Escherichia coli ATCC® 25922 *	Inhibited
Enterococcus feacalis ATCC® 29212 *	Inhibited

*** This organism is available as a Culti-Loop®**
† CM1048 is an opaque solution therefore turbidity cannot be used as a growth indicator.