

KLIGLER IRON AGAR

Ready to use tubes

INTENDED USE

ready to use tubes for the differentiation of *Enterobacteriaceae*

TYPICAL FORMULA (g/l)

Beef Extract	3.000
Yeast Extract	3.000
Peptocomplex	20.000
Lactose	10.000
Glucose	1.000
Ferrous Sulphate	0.200
Sodium Thiosulphate	0.300
Sodium Chloride	5.000
Phenol Red	0.024
Agar	12.000

Final pH 7.4 ± 0.2

DESCRIPTION

Kligler Iron Agar is a solid medium used to distinguish between *Enterobacteriaceae* on the basis of their ability to ferment lactose and/or glucose and to produce hydrogen sulphide.

The fermentation of the sugars present can occur either aerobically (on the slope surface) or anaerobically (in the butt), with or without gas production (CO₂ + H₂).

TECHNIQUE

Inoculate by stabbing the butt and abundantly streaking the slope with a sterile needle.

After 18-24 hours of incubation at 37°C with the loosened caps, check the colour of the medium both in the butt and at the slope.

Also check for the presence of gas in the butt and the presence of the black precipitate (H₂S). The table below summarises the culture characteristics of some microorganisms on Kligler Iron Agar.

Microorganisms	Slope	Butt	H ₂ S
<i>Escherichia</i>	A/K	A/G or A	V
<i>Klebsiella</i>	A	A/G	-
<i>Enterobacter</i>	A	A/G	-
<i>Citrobacter</i>	A/K	A/G	+
<i>Salmonella paratyphi</i>	A/K	A	-
<i>Salmonella</i> spp.	K	A/G	+
<i>Salmonella arizonae</i>	K	A/G	+
<i>Proteus morgani</i>	NC	A	-
<i>Proteus vulgaris</i>	NC	A	+
<i>Shigella</i>	NC	A	-

KEY

K =alkaline reaction; A = acid reaction; NC =no reaction; V=variable reaction; A/G =acid reaction with gas

LIMITATIONS

Failure to stab the but invalidates this test. The integrity of the agar must be maintained when stabbing; do not use inoculating loop. Caps must be loosened during this test or erroneous results will occur. It is essential that KIA tube be read and interpreted within 18-24 h incubation period.

An organism that produces H₂S may mask acid production in the butt of the medium. However, H₂S production requires an acid environment, thus the butt portion should be considered acid.

PRECAUTIONS

For *in vitro* diagnostic use only. Observe approved biohazard precautions and aseptic techniques. To be used only by adequately trained and qualified laboratory personnel. Sterilize all biohazard waste before disposal.

STORAGE

Store at 2-8° away from direct light - When stored as directed the tubed media remain stable until the expiry date shown on the label. Do not use beyond stated expiry date. Media should not be used if there are any signs of deterioration (shrinking, cracking, discoloration) or contamination.

REFERENCE

• Mac Faddin, J.F. (1976) - Biochemical Tests for Identification of Medical Bacteria. Baltimore: The Williams & Wilkins Company.

PACKAGING

551560 **Kligler Iron Agar,** **20 tubes with sloped medium**