LAP DISKS
(Leucine Aminopeptidase)

- For in vitro use only - Catalogue No. DL10

Our LAP Disks are intended for the preliminary characterization of catalase negative, gram-positive cocci.

The LAP test is often used in conjunction with PYR and other biochemical tests to help differentiate between catalase, gram-positive cocci. In general, *Streptococcus pneumoniae and Streptococcus pyogenes, Pediococcus, Lactococcus, and Enterococcus species* are all LAP positive, while other beta-hemolytic Streptococci, *Aerococcus* and *Leuconostoc* species are LAP negative.

The disks are impregnated with leucine-ß-naphthylamide, which is hydrolyzed by the enzyme leucine aminopeptidase, produced by LAP positive organisms. This enzymatic activity results in the release of ß-naphthylamine, which couples with *p*-dimethylaminocinnamaldehyde reagent (Dalynn RP95), when it is added, to form a highly visible red Schiff base.

Organism	Cat	LAP	PYR	Esc	NaCl	Van
Streptococcus						
S. pneumoniae	–	+	V	V	–	S
S. pyogenes	–	+	+	+	–	S
S. agalactiae	–	+	–	–	V	S
Other β *Streptococcus*	–	–	–	–	–	S
Enterococcus spp.	–	+	+	+	V+	S
Aerococcus						
A. viridans	–	–	+	V	+	S
A. urinae	–	+	–	V	+	S
Alloiococcus otitis	+	+	+	–	+	S
Gemella						
G. hemolysans	–	V	+	–	–	S
G. morbillorum	–	+	w+	–	–	S
Globicatella sanguis	–	–	+	V	+	S
Helcococcus kunzii	–	–	+	+	V	S
Lactococcus spp.	–	+	+	+	–	S
Leuconostoc spp.	–	–	–	–	V	R
Abiotrophia						
A. adiacens	–	+	V	–	–	S
A. defectiva	–	+	V	–	–	S
Pediococcus spp.	–	+	–	+	V	R
Tetragenacoccus spp.	–	+	–	NR	NR	S
Vagacoccus spp.	–	+	+	+	+	S

NR = No results w+ = Weakly positive V = Variable
Cat = Catalase Esc = Esculin hydrolysis Van = Vancomycin
NaCl = Growth in 6.5% sodium chloride

Recommended Procedure

1. Aseptically place a LAP disk in a sterile petri dish, and allow disk to warm to room temperature.
2. Moisten the LAP Disk with a small amount of sterile distilled water.
3. Inoculate with several colonies from an overnight culture plate.
4. Incubate for five minutes at room temperature.
5. Add one drop of PYR Reagent (Dalynn RP95) and read within one minute.

Interpretation of Results

Positive: Development of a red/pink color

Negative: No change or a slight yellow color

- *Confirm that the test organism is a gram-positive coccus and is catalase negative before performing the LAP test*
- *Ensure that adequate inoculum is used or false negatives may occur*
- *Streptococci should be tested prior to 48-hour incubation or subcultured prior to testing*

Quality Control

Organism	Expected Results	
Enterococcus faecalis ATCC 29212	+ ve	Red color
Aerococcus viridans ATCC 11563	- ve	No color change

Storage and Shelf Life

Our LAP Disks should be stored at -20°C and protected from light. Under these conditions they have a shelf life of 26 weeks from the date of manufacture.

References

1. Colman G, Ball LC. J Appl Bacteriol 1984;57.
2. Murray PR, Baron EJ, Pfaller MA et al. Manual of clinical microbiology. 7th ed. Washington, DC: ASM, 1999.
3. MacFaddin, JF. Biochemical Tests for the Identification of Medical Bacteria, 3rd ed. Philadelphia: Lippincott Williams & Wilkins, 2000.

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