BIOCHEMICAL TESTS TO IDENTIFY SELECTED GRAM-NEGATIVE BACTERIA

[+, positive reaction; -, negative (no) reaction] **(OCTOBER 25, 2019)**

Gram-negative Bacterial species (all bacilli)	Lactose Fermentation	IMViC Tests				Motility	Urease	Lysine Dearboxylase	Arginine Decarboxylase	Ornithine Decarboxylase	Phenylalanine Deaminase	SIM Hydrogen Sulfide	TSI Hydrogen Sulfide	TSI Slants Slant/Butt A = Acid K = Alkaline 0 = no gas g = gas
		Indole	Methyl Red	Voges-Proskauer	Citrate									
Alkaligenes faecalis (ATCC 8750)	-	-	-	-	+	-	-	+	+	-	+	-	-	K/A, 0
Chromobacterium violaceum (154931A)*	-	-	-	-	+	+	-	-	+	-	-	-	-	K/A, 0
Citrobacter freundii (ATCC 8090^{T})	+	-	+	-	+	+	-	-	+	-	-	+	+	A/A, g
Edwardsiella tarda (ATCC 15947^{T})	-	+	+	-	+	+	-	+	+	+	+	+	+	K/A, 0
Enterobacter aerogenes (ATCC 13048^{T})	+	+	-	+	+	+	+	+	+	+	-	+	+	A/A, 0
Enterobacter cloacae (ATCC 2335)	+	-	-	+	+	+	-	+	+	+	-	-	-	A/A, g
Escherichia coli (ATCC 25922)	+	+	+	-	-	+	-	+	-	+	-	-	-	A/A, g
Hafnia alvei (PI 342A)	+	-	-	+	+	+	-	+	+	-	-	+	+	K/A, g
Klebsiella oxytoca (ATCC 33496)	+	+	+	-	+	-	+	+	+	+	-	-	-	K/A, g
Klebsiella pneumoniae (ATCC 13883^{T})	+	-	+	-	+	-	+	+	-	-	-	-	-	A/A, g
Morganella morganii (ATCC 25830)	-	+	+	-	-	+	+	+	-	+	+	+	+	K/A, g
Proteus hauseri (ATCC 13315)	-	+	+	-	-	+	+	-	-	+	+	+	+	A/A, 0
Proteus mirabilis (ATCC 43071)	-	-	+	-	+	+	+	-	-	+	+	+	+	K/A, 0

Biochemical Tests to Identify Selected Gram-negative Bacteria (continued)

[+, positive reaction; -, negative (no) reaction] **(OCTOBER 25, 2019)**

Gram-negative Bacterial species (all bacilli)	Lactose Fermentation	IMViC Tests				Motility	Urease	Lysine Dearboxylase	Arginine Decarboxylase	Ornithine Decarboxylase	Phenylalanine Deaminase	SIM Hydrogen Sulfide	TSI Hydrogen Sulfide	TSI Slants Slant/Butt A = Acid K = Alkaline 0 = no gas g = gas
		Indole	Methyl Red	Voges-Proskauer	Citrate									
Providencia stuartii (ATCC 33762)	-	+	+	-	+	+	-	-	-	-	+	-**	-	K/A, 0
Pseudomonas aeruginosa (ATCC 27853)‡	-	-	-	-	+	-	-	+	+	+	+	-	+	K/A, 0
Pseudomonas fluorescens (ATCC 13525)#	-	-	-	-	+	-	+	+	+	+	+	-	-	K/A, 0
Salmonella enterica Typhi (ATCC 6539)	-	+	+	-	-	+	+	-	-	-	+	+	+	K/A, 0
Sal. enterica Cholerasuis (ATCC 10708)	-	-	+	-	+	+	-	+	+	+	-	-	-	K/A, g?
Sal. enterica Typhimurium (ATCC 14028)	-	-	+	-	+	+	-	+	+	+	-	+	+	K/A, 0
Serratia marcescens (ATCC 14756)***	-	-	+	+	+	+	+	+	+	+	-	-	-	K/A, 0
*Shigella flexneri (*ATCC 12022)	-	-	+	-	-	-	-	+	-	+	-	-	-	K/A, 0
Shigella sonnei (ATCC 25931) 29930	-	-	+	+	+	+	-	-	+	+	-	+	+	A/A, g?
Yersinia enterocolitica (ATCC 23715)	-	+	+	-	-	+/-&	+	-	-	+	+	-	-	A/A, 0

*Colonies appear dark purple in color on nutrient agar, brain heart infusion agar, or tryptic soy agar.

**Produces a red-brown pigment that diffuses into the medium from the top of the agar deep.

***Colonies appear reddish/pink in color on nutrient agar, brain heart infusion agar, or tryptic soy agar.

‡Produces a blue-green pigment that diffuses into the agar medium (nutrient agar ,brain heart infusion agar, or tryptic soy agar).

#Does not grow at 37°C. Produces a green fluorescent-like pigment that diffuses into the medium (nutrient agar, brain heart infusion agar, or tryptic soy agar).

&Motile at 25°C; non-motile at 37°C.