

Characteristics of Bacteria

| Bacteria | Item # | Medium | Incubation | Gram +/- | Shape | Mobility | Endospores | Fermentation | Gas Production | Enzymes Secreted | Citrate Utilized | Notes |
|---|-------------------------|--|------------|----------|------------|----------|------------|--------------|----------------|------------------|------------------|--|
| <i>Alcaligenes faecalis</i> | 154835A | Nutrient Agar | 37° C | - | Rod | + | - | - | - | C, O | + | Carolina™ MicroKwik Culture®. Pathogen, not recommended for beginners. |
| <i>Aquaspirillum serpens</i> | 154838 | Nutrient Agar | 25-30° C | - | Spiral | + | - | G, M | - | C, O, U | - | |
| <i>Bacillus cereus</i> | 154872 | Nutrient Agar | 30° C | + | Rod | + | + | G, M | - | A, C, L, O | + | Nitrate reduction, gelatinase. |
| <i>Bacillus megaterium</i> | 154900 | Nutrient Agar | 30° C | + | Rod | + | + | G, S | - | A, C, L | + | Nitrate reduction, gelatinase. |
| <i>Bacillus stearothermophilus</i> | 154910 | Tryptic Soy Agar | 55° C | + | Rod | + | + | G, L, S | - | A, C, L, O, U | + | High temperature. |
| <i>Bacillus subtilis</i> | 154921 | Nutrient Agar | 30° C | + | Rod | + | + | G, S, M | - | A, C, L | - | Nitrate reduction, gelatinase. Not all strains ferment glucose and sucrose. |
| <i>Branhamella catarrhalis</i> | 154928 | Tryptic Soy Agar or Brain Heart Infusion Agar | 37° C | - | Cocci | - | - | - | - | C, O | - | |
| <i>Citrobacter freundii</i> | 154941 | Nutrient Agar | 30° C | - | Rod | + | - | G, L, M | + | C | + | Nitrate reduction. |
| <i>Clostridium acetobutylicum</i> | 154960 | Thioglycollate | 37° C | + | Rod | + | + | G, L, S | - | A, L | - | Obligate anaerobe. Ferments a variety of carbohydrates, producing acetone and other products. College level and above. |
| <i>Corynebacterium pseudodiphtheriticum</i> | 155010 | Brain Heart Infusion Agar | 37° C | + | Rod | - | - | G, S | - | C, U | + | Slow growing. |
| <i>Corynebacterium xerosis</i> | 155015 | Brain Heart Infusion Agar | 37° C | + | Rod | - | - | G, S | - | C | - | Slow growing. |
| <i>Enterobacter aerogenes</i> | 155030 | Nutrient Agar | 30° C | - | Rod | + | - | G, L, M, S | + | C | + | Nitrate reduction. Used to culture <i>Dictyostelium</i> and other slime molds. |
| <i>Escherichia coli</i> K-12 | 155068 | Nutrient Agar | 37° C | - | Rod | + | - | G, L, M, S | + | C | - | Nitrate reduction, indole, facultative anaerobe. |
| <i>Lactobacillus acidophilus</i> | 155110 | Tomato Juice/Yeast Extract/Milk Broth | 37° C | + | Rod | - | - | G, L, S | - | - | - | Fermentation produces lactic acid only. pH < 5. College level and above. |
| <i>Lactococcus lactus</i> | 155610 | Tomato Juice/Yeast Extract/Milk Broth or Brain Heart Infusion Agar | 37° C | + | Cocci | - | - | G, L, S | - | - | - | pH < 5. |
| <i>Micrococcus luteus</i> | 155155 | Nutrient Agar | 25° C | + | Cocci | - | - | - | - | C, O | + | Yellow pigment, facultative anaerobe. |
| <i>Micrococcus roseus</i> | 155160 | Nutrient Agar | 25° C | + | Cocci | - | - | G, M, S | - | C | - | Nitrate reduction, pink pigment. |
| <i>Proteus vulgaris</i> | 155240A | Nutrient Agar | 37° C | - | Rod | + | - | G, S | + | C, U | - | Carolina™ MicroKwik Culture®. Nitrate reduction, gelatinase. Pathogen, not recommended for beginners. |
| <i>Pseudomonas fluorescens</i> | 155255 | Nutrient Agar | 25° C | - | Rod | + | - | - | - | C, L, O | + | Nitrate reduction, gelatinase. |
| <i>Rhodospirillum rubrum</i> | 155300 | Tryptic Soy Agar/Nutrient Agar | 25° C | - | Spiral | + | - | G | - | C | + | Pink pigment, photosynthetic. |
| <i>Serratia marcescens</i> | 155450 | Nutrient Agar | 25° C | - | Rod | + | - | G, M, S | +/- | C, L | + | Nitrate reduction, gelatinase, red pigment (variable; order #155542 for stable red). |
| <i>Sporosarcina ureae</i> | 155518 | Nutrient Agar | 25° C | + | Cocci | + | + | - | - | C, O, U | - | Nitrate reduction, high rate of urea hydrolysis. |
| <i>Staphylococcus epidermidis</i> | 155556 | Nutrient Agar | 37° C | + | Cocci | - | - | G, L, M, S | + | C, U | - | Nitrate reduction. |
| <i>Vibrio anguillarum</i> | 155721 | Enriched Nutrient Agar | 25° C | - | Curved Rod | + | - | G, L, M, S | - | A, C, O | - | Nitrate reduction, gelatinase. |

Fermentation Legend

G: Glucose fermented; L: Lactose fermented; M: Mannose fermented; S: Sucrose fermented; -: G, L, M, S not fermented.

Enzymes Secreted Legend

A: Amylase secreted; C: Catalase secreted; L: Lipase secreted; O: Oxidase secreted; U: Urease secreted

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