

## NTM and TB

### M. tuberculosis

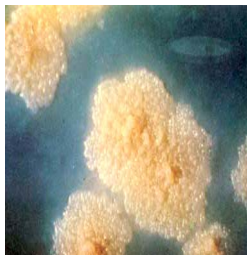


Middlebrook 7H11

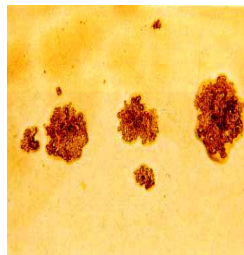


L-J Medium

### M. tuberculosis



(Rough)



(x10)

### M. chelonae



Middlebrook 7H11

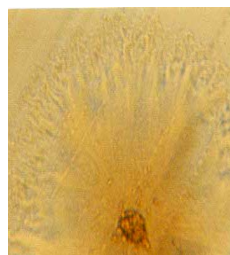


Chocolate medium

### M. avium complex

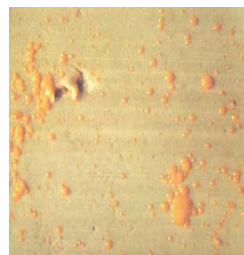


(Smooth)



(x15)

### M. kansasii



Before light After light

M. fortuitum



Middlebrook 7H11



L-J medium

M. fortuitum

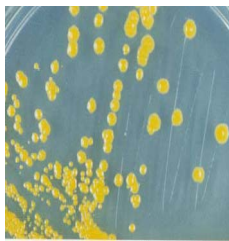


(Rough/Smooth)



(x20)

M. gordonae



Middlebrook 7H11



L-J medium

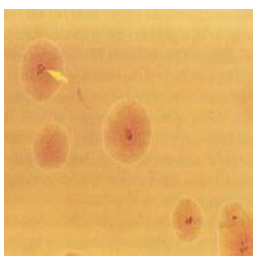
M. gordonae



(Smooth)

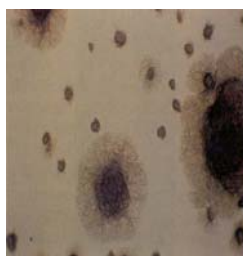


M. malmoense



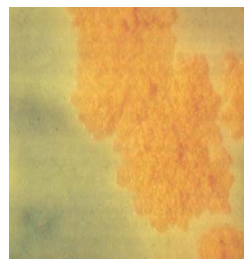
Middlebrook 7H11

M. malmoense

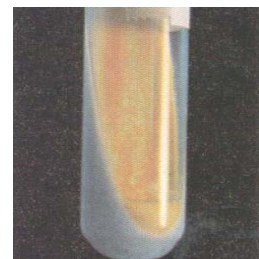


Middlebrook 7H10

M. phlei (rapid growth)

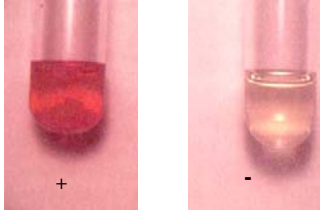


M. scrofulaceum



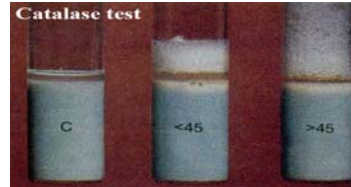
Biochemical Tests - 1

- Arysulfatase test
  - *M. fortuitum* - *Chelonae* complex +



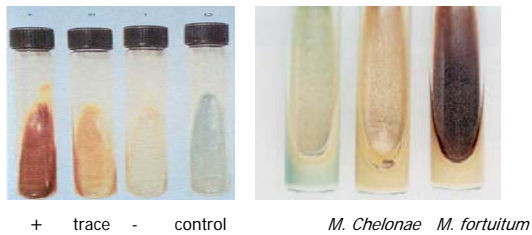
Biochemical Tests - 2

- Catalase activity test (semi-quantitative 45mm)
  - Height  $\geq 45$  mm (strong +);  $\leq 45$  mm (weak +)
  - *M. kansasii* + ; *M. scrofulaceum* + ; *M. simiae* + ; MTB -



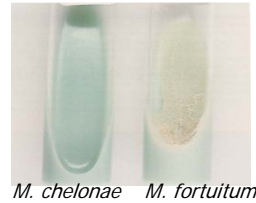
Biochemical Tests - 3

- Iron uptake test
  - *M. fortuitum* +,



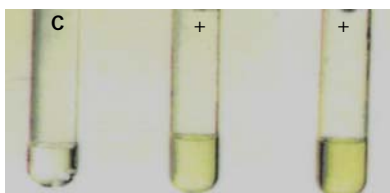
Biochemical Tests - 4

- 5% NaCl tolerance
  - Chromgen- (*M. flavescens* + growth; *M. szulgai* - growth)
  - Nonphoto- (*M. triviale* + growth; *M. terrae* - growth)
  - Rapid grower (*M. chelonae* ss *Chelonae* - growth)



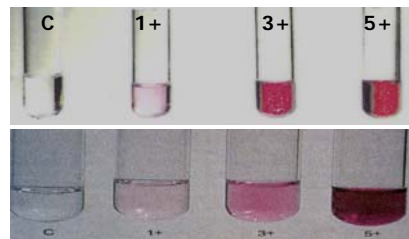
Biochemical Tests - 5

- Niacin accumulation test
  - *M. tuberculosis* +, *M. simiae* -, *M. avium* -



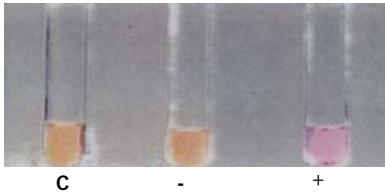
Biochemical Tests - 6

- Nitrate reduction test
  - Rapid growers (*M. szulgai* +; *M. fortuitum* +; *M. smegmatis* +)
  - Slow growers (*M. tuberculosis* +; *M. kansasii* +)



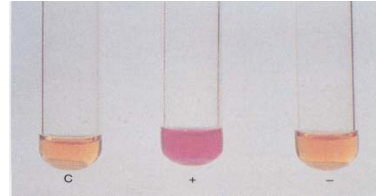
Biochemical Tests - 7

- Tween 80 hydrolysis
  - Photo- (*M. kansasii* +)
  - Scoto- (*M. goodii* +; *M. scrofulaceum* -)
  - Nonphoto- (MAC -; *M. xenopi* -)



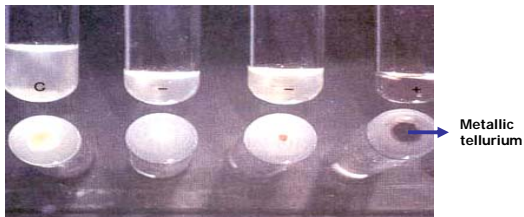
Biochemical Tests - 8

- Urease
  - Scoto- (*M. scrofulaceum* +; *M. goodii* -)
  - Nonphoto- (MAC, pigmented MAC -; *M. gastri* ±)



Biochemical Tests - 9

- Tellurite reduction
  - 3-4 days: *M. avium* complex +, rapid growers +



Biochemical Tests - 10

- Pyrazinamidase test
  - 4 days: *M. marinum* +, *M. kansasii* -, *M. bovis* -, *M. tuberculosis* +, *M. avium* complex +
  - 7 days: *M. bovis* -

