



REGAN-LOWE TRANSPORT MEDIUM

- For in vitro use only -

Catalogue No. TR35

Our Regan-Lowe Transport Medium is a semi-solid medium used to transport clinical specimens containing *Bordetella* species.

Bordetella species are respiratory pathogens that reside in the mucous membranes of an infected individual; the most common and significant isolate of this genus is *Bordetella pertussis*, the predominant cause of pertussis or whooping cough.

Our formulation is based on the work of Regan and Lowe who developed a charcoal medium for the transportation of whooping cough specimens. Two separate studies showed the effectiveness of using Regan-Lowe Transport Medium and reported a 6 to 14% increase in the isolation rate of *Bordetella*.

Our formulation contains two basic nutritional components: beef extract and pancreatic digest of gelatin, which supply the organism with all the essential elements needed for rapid and sustained growth. Niacin or nicotinic acid is incorporated into the medium since Proom determined it to be an essential growth factor for some *Bordetella* species. Sodium chloride maintains an isotonic environment for the bacterial cells, while starch and charcoal act as absorbents to help neutralize toxic components in the medium, such as fatty acids and peroxides. Since bordetellae grow more slowly than most constituents of the normal respiratory flora, cephalixin is incorporated into RLTM to prevent overgrowth. Cephalixin, a first-generation cephalosporin, has good gram-positive activity and modest gram-negative activity, and provides good suppression of the normal respiratory flora. Defibrinated horse blood enriches the medium and helps stimulate the growth of *Bordetella*.

Regan-Lowe Transport Medium should be used to transport specimen swabs where *Bordetella* is the suspected etiological agent, and may be kept in the transport medium for up to 48 hours prior to sub-culturing.

Formula per Litre of Medium

Beef Extract.....	5.0 g
Pancreatic Digest of Gelatin	5.0 g
Soluble Starch	5.0 g
Sodium Chloride	2.5 g
Charcoal.....	2.0 g
Niacin	0.005 g
Agar	6.0 g
Horse Blood (Defibrinated).....	100.0 mL
Cephalexin.....	0.04 g

pH 7.4 ± 0.2

Recommended Procedure

1. Allow medium to adjust to room temperature prior to inoculation.
2. Collect specimen from the posterior nasopharynx (not the throat) using a Dacron™ or calcium alginate swab (not cotton).
3. Place specimen swab into Regan-Lowe Transport Media (Dalynn TR35) for enrichment and transport of potential *B. pertussis* isolates. Keep at 4 to 24°C.
4. Once in the laboratory, streak the specimen swab onto a selective Regan-Lowe Agar plate with antibiotics (Dalynn PR35).
5. Incubate plates at 35°C in a moist aerobic atmosphere (60-70% humidity). [To obtain a moist environment, place inoculated plates into a **loosely** sealed container along with some damp paper towels, or alternatively use tape to seal the plates to prevent dehydration of the medium]
6. Check plates daily for growth. Incubate plates a minimum of seven days before reporting specimen plates as negative

Interpretation of Results

Bordetella pertussis colonies appear as small, greyish-white, glistening colonies on Regan-Lowe Agar usually within 72 hours. Selective plates containing cephalixin require prolonged incubation and typically good growth is observable after 5 to 6 days of incubation. *B. parapertussis* grows quicker and mature colonies usually become visible after 48 hours of incubation.

- *Patients whose disease has progressed beyond the catarrhal or paroxysmal stage, or have undergone antimicrobial treatment may make detection and isolation of Bordetella detection more difficult and may result in false negatives*
- *Most commensal organisms contained in clinical specimens will survive in RLTM but fail to replicate, although prolonged incubation may allow some organisms to flourish*
- *A 12 day incubation period may be warranted as a 1996 study reported a 18% increase in the recovery of Bordetella isolates*

Quality Control

After checking the medium for correct pH, colour, depth, and sterility, the following organisms are used to determine the performance of the completed medium. The tubes are incubated at 35°C for 24 hours and then sub-cultured onto Regan-Lowe Agar (Dalynn PR36).

<u>Organism</u>	<u>Expected Results</u>
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<i>Bordetella pertussis</i> ATCC 8467	Growth
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Storage and Shelf Life

Our Regan-Lowe Transport Medium should be stored away from direct light at 4°C to 8°C in an upright position. Under these conditions it has a shelf life of 16 weeks from the date of manufacture.

References

1. Proom H. The minimum nutritional requirements of organisms of the genus *Bordetella lopez*. J Gen Microbiol 1955; 12:63-75.
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4. MacFaddin JF. Media for isolation-cultivation-maintenance of medical bacteria, Vol I. Baltimore: Williams & Wilkins, 1985.
5. Wirsing Von Konig CH, Hoppe JE, Tacken A, Finger H. Use of supplemented Stainer-Scholte medium for the isolation of *Bordetella pertussis* from clinical material. J Clin Micro 1988; 26:2558-60.
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