

THROAT SWAB STANDARD OPERATING PROCEDURES FOR PHARYNGITIS, TONSILLITIS & EPIGLOTTITIS



CwPAMS is funded by the UK Department of Health and Social Care's Fleming Fund using UK aid. The views expressed in this publication are those of the authors and not necessarily those of the UK Department of Health and Social Care.

1. Check pre-analytical parameters (demographics, sample type, time taken). **See associated Specimen Optimal Sampling Checklist and Sample Acceptance guidelines within the Microbiology Toolkit.** Specimens should be processed as soon as possible. If a delay (>2 hours) is unavoidable, refrigerate samples.
2. Check clinical details to determine the media required and incubation conditions in the table below. Every swab should have a blood agar plate for routine culture and sensitivity. Additional plates can be added when clinical details indicate other organisms.
3. Label plates and inoculate media (ensure swab is rotated so all sides touch the agar). Spread using a simple streak technique to promote single colonies. Incubate plates as soon as possible.
4. Read plates post incubation, identify and report any pathogens. Some organisms that cause pharyngitis, tonsillitis and epiglottitis are also commensals of the upper respiratory tract. When interpreting cultures consider amount of growth and purity of the organism plus the clinical details received.

Upon treatment failure consider other more rare causes of pharyngitis/tonsillitis e.g. *Arcanobacterium haemolyticum*, *Francisella tularensis*, *Mycoplasma pneumoniae* *Chlamydia*

TABLE OF MEDIA, INCUBATION CONDITIONS AND IDENTIFICATION METHODS

CLINICAL INFORMATION	MEDIA	INCUBATION CONDITION	TARGET ORGANISMS	IDENTIFICATION
Routine culture	Blood agar	Anaerobic (Ano ²) 18 – 24 hours	<i>Streptococcus pyogenes</i> (Group A Streptococcus) Group C/G Streptococcus	Colonial morphology: β-haemolysis on blood agar Biochemical tests: Lancefield grouping catalase negative kits Confirmatory ID if available: Use API Strep, Vitek GP or Maldi-Tof
1. Pseudomembranous pharyngitis/ tonsillitis 2. Contact with case 3. Suspicion of diphtheria 4. Raw dairy consumption 5. Animal contact in last 10 days	Blood Tellurite media (e.g. Hoyles) Alternative media: Blood agar (difficult to differentiate pathogens from pharyngeal flora)	Air/aerobic (O ₂) 35 – 37°C 18 – 48 hours Read plates daily	<i>Corynebacteria diphtheriae</i> and <i>Corynebacterium ulcerans</i>	Defined by the Advisory Committee on Dangerous Pathogens (ACDP UK) as a Hazard group 2 organisms – all suspect isolates should be handled in a microbiology safety cabinet. Category 3 conditions are required if propagating the organism Microscopic morphology: palisading Gram-positive bacilli Biochemical tests: Catalase positive, <i>C.diphtheriae</i> urea negative, <i>C.ulcerans</i> urea positive Confirmatory ID if available: Use API Coryne, Vitek GP or Maldi-Tof Toxin detection: PCR for detection of tox gene, ELEK test required for demonstration of active toxin production (toxin gene does not mean that toxin is being produced). Follow local procedures for Toxin test referral.
1. Persistent/recurrent sore throat 2. Peritonsillar abscess or quinsy 3. Suspicion of Lemierre's syndrome	Fastidious Anaerobic Agar (FAA) with naldixic acid and vancomycin Alternative media: Blood agar with vancomycin disc.	Anaerobic (Ano ²) 5 – 7 days Read at 48 hours and then daily.	<i>Fusobacteria necrophorum</i>	Microscopic morphology: pleomorphic, slender Gram-negative bacilli Colonial morphology: β-haemolysis, grey peaked colonies Biochemical tests: Indole positive Confirmatory ID if available: API NH or Maldi-Tof Other features: Fluoresces yellow/green under UV light, Metronidazole sensitive and vancomycin resistant.
1. Suspicion of gonorrhoea 2. Meningitis case (if LP not performed) / contact	Selective agar (e.g. GC agar) Chocolate agar	5-10% Carbon Dioxide (CO ₂) 48 hours	<i>Neisseria gonorrhoeae</i> <i>Neisseria meningitidis</i>	Microscopic morphology: Gram-negative diplococci Biochemical tests: Oxidase and Catalase positive Confirmatory ID if available: API NH or Maldi-Tof
Epiglottitis	Alternative media: Chocolate agar	5-10% Carbon Dioxide (CO ₂) 48 hours	<i>Haemophilus influenzae</i> type B (HiB)	Microscopic morphology: Gram-negative cocco-bacilli Biochemical tests: Oxidase positive Confirmatory ID if available: API NH or Maldi-Tof