ROUTINE LUNG TRANSPLANT BRONCHOSCOPY SPECIMEN

I. Introduction

Following a lung transplant, patients are followed routinely in the clinic and undergo regular bronchoscopies looking mainly for bacterial viral (particularly CMV) or fungal pathogens (particularly Aspergillus). These specimens will be processed similarly to other routine bronchoscopies except that Mycobacteria (TB) culture will not be performed unless specifically requested. As well, fungal cultures will be kept for only a maximum of 2 weeks before discarding if negative.

II. Specimen Collection and Transplant

See Pre-analytical Procedure - Specimen Collection QPCMI02001

III. Reagents/Materials/Media

See Analytical Process - Bacteriology Reagents_Materials_Media List QPCMI10001

IV. Procedure

A. Processing of Specimens:

See Specimen Processing Procedure QPCMI06003

Direct Examination: Prepare 3 smears for:

i) Gram stain
ii) Fungifluor stain
iii) Extra smear held in Mycology Section for special stains.

Culture:

Media	**Incubation**	
Blood Agar (BA)	CO_2,	35°C x 48 hours
Haemophilus Isolation Medium (HI)	CO_2,	35°C x 48 hours
MacConkey Agar (MAC)	CO_2,	35°C x 48 hours
Inihibitory Mold Agar (IMA) *	O_2,	28°C x 2 weeks
Esculin Base Medium (EBM)*	O_2,	28°C x 2 weeks
Blood Egg Albumin Agar (BEAA)*	O_2,	28°C x 2 weeks
If *B. cepacia* is requested or specimen is from a patient with Cystic Fibrosis, **add**:		
OF Base, Colistin, Bacitracin & Lactose Agar (OCBL)	O_2,	35°C x 5 days
Keep the BA, HI and MAC plates	CO_2,	35°C x 5 days
If Nocardia is requested, **add**:		
Sodium Pyruvate Agar (PYRA)	O_2,	35°C x 4 weeks

* Forward inoculated fungal media to Mycology Section for incubation and work-up.

B. Interpretation of cultures:

Examine the plates after 24 and 48 hours incubation.

1. Identify any growth of **Probable** respiratory pathogens.
2. Identify any growth of **Possible** respiratory pathogens if predominant (i.e. amount of pathogen growth greater than that of commensal flora).
3. For yeast grown in culture on bacterial culture plates see Yeast Identification.
4. For filamentus fungus, seal the agar plate and send the culture to Mycology for identification.
5. If there is a question regarding the significance of an isolate, consult the charge technologist or microbiologist.

Probable respiratory pathogens:
Streptococcus pneumoniae
Moraxella catarrhalis
Hemophilus influenzae
Group A streptococcus
Staphylococcus aureus
Pseudomonas aeruginosa
Burkholderia cepacia
Nocardia
Filamentous fungus
Cryptococcus neoformans

Possible respiratory pathogens:
Yeast not *Cryptococcus neoformans*
Group C and G streptococcus
Other gram negative bacilli (not listed above) of single morphological type

For cystic fibrosis patients:

Report **any** amount of *B. cepacia.* For *B. cepacia* and slow growing mucoid *P. aeruginosa*, identification and sensitivities can be referred to previous specimens processed within the preceding 4 weeks.

C. Susceptibility Testing:

Refer to Susceptibility Testing Manual.

V. Reporting

Direct Examination:

Gram Stain:	Report WITHOUT quantitation: - presence or absence of pus cells; - presence or absence of squamous epithelial cells; - presence of predominate respiratory pathogens; - presence of "Commensal flora"; - "No bacteria seen" if no organism is seen.
Fungifluor Stain:	Refer to Mycology Manual

Acid-fast stain (if **STAT** request): Refer to Reporting of Acid-fast smears, Appendix IV.

Culture:

Negative Report:	"Commensal Flora" (DO NOT quantitate) or "No growth" "No *B. cepacia* isolated" if *B. cepacia* culture is requested. "No *Nocardia* isolated" if *Nocardia* culture is requested.
Positive Report:	DO NOT quantitate. Report all significant isolates with appropriate sensitivities. Report "Commensal flora" if also present. "Filamentous fungus" "isolated" "identification to follow" (DO NOT quantitate).

Telephone all Group A streptococcus to ward / ordering physician.

VI. References

P.R. Murray, E.J. Baron, M.A. Pfaller, R.H. Yolken. 2003. Manual of Clinical Microbiology, 8th ed. ASM Press, Washington, D.C.

H.D. Izenberg. 2003. Respiratory Tract Cultures, 3.11.1.1 – 3.11.3.1 in Clinical Microbiology Procedures Handbook, 2nd ed. Vol.1 ASM Press, Washington, D.C.