

CYTOLOGY

1. GENERAL INFORMATION

The cytology lab is located in Dillehunt Hall, Rm 5026, 5th floor. Two cytotechnologists are available for processing and screening cytology specimens from 8:00am to 5:00pm, Monday through Friday.

2. CYTOLOGY PROCEDURES

- a) Handling of specimens
Occasionally the resident on call will be asked how to handle various specimens for cytology. The following lists various specimens and how they are to be handled.

SPECIMEN (NON-GYN REQUISITION)	COLLECTION	FIXATION	SPECIAL HANDLING	REFRIGERATION
ASPIRATES	If only tissue fragments, smear on slides	Drop in 95% ALC immediately	Then rinse syringe/needle in saline and send to lab	NO
	Fluid specimens	None	If scanty, express material into saline or send to lab in syringe	If delivery delayed
BRONCHOSCOPY SPECIMENS BRUSH BRUSH/WASH WASH BIOPSY	Roll brush on frosted slides (predampened with 95% alcohol)	Drop in 95% ALC immediately	None	No
	Rinse brush in small tube of normal saline	None	None	If delivery delayed
	Send in trap or cup	None	If bloody, add 1 drop of heparin	if delivery delayed
	In saline for agar block in formalin for plastic	None	None	if delivery delayed
CEREBROSPINAL FLUID	First tube of tap will be more cellular	None	Bloody tap unsatisfactory for cytology	if delivery delayed
EFFUSIONS	250ML (maximum) aliquot of well mixed heparinized specimen	None	Addition of heparin <u>very</u> important if SP.GR. increased	If delivery delayed
GI TRACT ENDOSCOPY BRUSH STOMACH CONTENTS PANCREATIC & DUODENAL FLUID	Roll on frosted slides	Drop immediately in 95% alcohol	Rinse brush in small amount of saline and send with slides	No
	150 ML. aliquot of mixed specimen	None	Send to lab immediately or refrigerate	
	Send in tumor or collecting syringe	None	Send to lab immediately or refrigerate	
SPUTA - FRESH SPECIMEN (24HR. COLLECTION UNSAT)	In 50ML. of special sputum preservative (tinted pink)	Sacomanno (carbo wax/alcohol)	Fresh, early in AM specimen, expectorated into fixative, covered and shaken vigorously	No
URINE				
VOIDED	Optimal cytology with clean catch	- See below		
CLEAN CATCH CATHE	50-100ML. Obtained after hydration	None	Hydration - 2 glasses of water one hour apart wait 30 minutes and collect - pooled 24hr. specimen unsatisfactory	No - If sent to lab same day
BLADDER WASH	Before endoscopic examination	None	None	No - If sent to lab same day
RETROGRADE BRUSH	Smears made on albuminized slides	Drop in 95% alcohol immediately	Rinse brush in small amount of saline and send to Cyto lab with slides	No
RETROGRADE WASH	Collect in cup or bottle	None	None	No
PNEUMOCYSTIS CARINII	At least 4 slides	Air dried		N/A
OTHER SPECIMENS	Call Cytology lab x8278 for instructions			

“Stat” Pap smear- done after hours only when looking for Herpes in a patient in labor.
Slides should be fixed in alcohol and stained with Pap stain or H&E. (See appendix)

1) Cytology: Routine requests

CSF's designated for Cytology. Please obtain proper requisition.

- a. Prepare 2 cytopsin preps per procedure in addition to any preps made for Hematology testing.

-Fix 1 slide with hairspray, holding spray 10 inches from slide to avoid a “freon effect”. Label “FOR PAP” in addition to patient name, unit number, and date.

-Air dry second slide. Label “AIR DRIED” in addition to patient name, unit number, and date.

- b. Store at room temperature.
- c. DO NOT STAIN.
- d. Person assigned to Body Fluids on the next normal working day is to make arrangements to send the slides to Cytology.

2) Cytology: State requests

- a. Hematology Technologist is to call requesting physician to contact the pathology resident on call for Surgical Pathology.

- b. Two cytopsin preps should be processed to point where they are ready to stain.

- c. One air dried cytopsin prep should be Wright's stained.

- d. The other is spray-fixed for on-call Surgical Pathology resident to stain with Pap stain.

3) CSF Cytology: Cell count > 10 WBC/cumm

- a. If a cytology request is received in addition to a CSF cell count/differential request and the WBC is > 10/cumm, prepare up to 6 extra cytopsin preps, IF there is enough sample.

- b. Air dry the slides and store at room temperature.

- c. Send slides to Cytology the next normal working day.

4) Body fluids for routine hematology with suspected malignant cells.

Any body fluid in which a diagnosis of malignancy is entertained requires a pathologist's review. Enter a comment in the computer: UNIDENTIFIED MONONUCLEAR CELLS PRESENT, PATHOLOGIST REVIEW PENDING. Prepare two cytopreps. Keep one in Hematology for pertinent clinical history, patient name and account number, and the body fluid worksheet to Cytology, UHS-19, Attn: Dr. Braziel.

If Cytology report has not already been done on the specimen, a cytology report will be generated, and slides and copies of the report will be returned to Hematology.

- 5) Body fluids received for surface markers and cytology during regular working hours. (8:00am-5:00pm daily including weekends and holidays.)

Call x8446 to notify the immunology tech, who will arrange pickup, process the sample immediately, and send the sample to Cytology if needed. Note: If both cytology and surface markers are ordered, send the entire specimen to Immunology as soon as possible.

- 6) Body fluids received after hours for surface markers and cytology.

Keep the sample at room temperature. Do not cell count. Centrifuge on low speed for 10 minutes, pour off supernatant into another tube, and save in Hematology bank. Add 1.0 ml of room temperature RPMI to the cell pellet and gently resuspend the cells. Call the Immunology faculty on-call immediately for further instructions. Be prepared to give the faculty the patient name, history if available, requesting physician, and the cell count.

- 7) Biopsy or aspirate for Pneumocystis. Either a fragment of fresh lung tissue or air dried slides from an aspirate will be received.

If fresh tissue is received 4 or 5 touch preps should be made from the tissue and stained with GMS. The tissue should be made and the slides stained with GMS (see appendix) and screened for Pneumocystis. In addition, frozen sections may be made from the tissue and stained with GMS. The tissue should then be submitted for paraffin embedding and GMS stain requested on the slides. If air dried slides are received they should be stained with GMS and screened.

GMS stains on sputa have had a low yield, largely because the specimens usually consist only of saliva. Therefore, we will screen these cases prior to doing GMS staining by using the rapid Diff-Quick stain on one smear and ensuring that the specimen is adequate. If the specimen is not sputum, no further stains need to be done.

- 8) Fine needle aspiration.
Generally fine needle aspirations are scheduled with cytology during the week. If requested after hours the clinician should perform the aspirate and smears and should be prepared as follows:

Smears are prepared from a small drop of the semi-solid aspirate placed on a glass slide. This is done by detaching the needle from the syringe and filling the syringe with air. Reattach the needle and advance the plunger of the syringe, express a small drop of the aspirated material on the center of the glass slide. Place the bevel of the needle against the slide while expressing this drop so that there is no intervening air-space which will cause drying artifacts in the alcohol fixed smears.

Make the smear by using a coverglass or another slide laid on top of the drop and pulled apart quickly as the drop spreads from the weight of the coverglass or slide.

The principle is the same as making bone marrow smears. The smears should occupy a small area of the slide, which gives a simulated tissue pattern and cuts down on screening.

From aspirates diluted by blood or fluid, the principle for differential blood smears should be used with the edge of a coverglass or slide employed to gradually pull and concentrate the cellular material away from the blood or fluid. This may result in a large number of smears with very few cells on them but eventually the tail ends of some of these smears will contain most of the cells of interest.

Smears should be air-dried for hematology stains and fixed in 95% ethyl or methyl alcohol while wet for Papanicolaou stain. Special stains may be performed on the air-dried smears.