

SUGGESTED BIOPSY SITES FOR DIRECT IMMUNOFLUORESCENCE AND SERUM STUDIES

BULLOUS DISEASES: INDICATED DIRECT IMMUNOFLUORESCENT (DIF) AND SERUM STUDIES*

SKIN LESIONS

If pemphigoid or epidermolysis bullosa acquisita is suspected, take skin biopsy with ~2/3 normal skin and ~1/3 edge of lesion. For best DIF results, take second biopsy ~3mm from lesion.

If pemphigus is suspected, take skin biopsy with ~2/3 normal skin and ~1/3 lesion edge plus serum for best diagnostic results. Also do IgG4 DIF. For best results take 2nd biopsy as for pemphigoid.

If dermatitis herpetiformis is suspected, take normal skin ~3 mm from lesion for best results. Serum tests by IIF-IgA EmA and tTG ELISA increase sensitivity.

If porphyria or pseudoporphyria is suspected, take skin biopsy with ~2/3 normal skin and ~1/3 lesion edge for best DIF results.

If in doubt, take two biopsies – one perilesional, as for pemphigoid, and one normal, as for DH, for best results.

If eruptions with other non-disease specific immune deposits are suspected, including lichenoid, psoriasiform or factitious lesions, or related disorders, take biopsy as for porphyria for DIF and lesional biopsy for light microscopy.*

MUCOSAL LESIONS

If pemphigoid is suspected, take normal mucosa ~3 mm from lesion or Nikolsky sign. For best DIF results, take second biopsy 3-10mm from lesion.

If pemphigus or paraneoplastic pemphigus is suspected, take normal mucosa ~3 mm from lesion or Nikolsky sign **plus serum.** For best diagnostic results, take two biopsies as for pemphigoid.

If erosive lichen planus (LP) is suspected, take mucosal biopsy with ~2/3 normal mucosa and ~1/3 edge of lesion or of Nikolsky sign for best DIF results.

HEREDITARY EPIDERMOLYSIS BULLOSA (EB)

If hereditary EB needs to be classified or confirmed, take biopsy of **induced** lesion in normal skin.

CONNECTIVE TISSUE DISEASES: INDICATED DIRECT IMMUNOFLUORESCENT (DIF) AND SERUM STUDIES

If SLE is suspected, take biopsy of sun-exposed normal skin of forearm for DIF for LE band test and blood in red top tube for serum studies for ANA and tests for ARA criteria.

If DLE is suspected, take biopsy of lesion in sun-exposed area of 3 or more months duration for DIF and for light microscopy.* Non-sun-exposed areas are of little value.

If SCLE or Sjogren's syndrome is suspected, take sun-exposed skin lesion biopsy for DIF for in vivo ANA and blood in red top tube for serum tests for ANA, Ro (SS-A) and La (SS-B).

If scleroderma is suspected, take biopsy of sun-exposed skin for DIF and C+DIF studies and blood for serum studies (Profile E).

IMMUNE COMPLEX MEDIATED VASCULITIS: INDICATED DIRECT IMMUNOFLUORESCENT STUDIES*

If leukocytoclastic vasculitis is suspected, (or most other immune complex vasculitides), take biopsy for DIF either of a fresh lesion, less than 48 hours old, or of the edge of a lesion plus adjacent normal skin.

If Henoch Schoenlein purpura is suspected, take biopsy of a fresh lesion (less than 48 hours old).

If stasis dermatitis is suspected, take biopsy for DIF of edge of skin lesion plus adjacent normal skin.

MOLECULAR TESTING FOR T CELL NEOPLASMS

If T cell neoplasm is suspected, send (a) 3-5ml whole blood in EDTA, ACD or heparin tube, or (b) skin biopsy in RPMI media, or (c) 5 unstained skin section slides.

* Additional/separate biopsy should be sent in formalin.

Light microscopic studies of lesional biopsy sites are indicated, in most cases of vesiculobullous, connective tissue disease, vascular disorders and T cell disorders.

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DATA ON SKIN AND MUCOSAL BIOPSIES

Interpretation of direct immunofluorescence (IF) of tissue specimens requires knowledge of the location of the biopsy relative to the clinical lesion. **FOR ALL DIRECT IF SPECIMENS, PLEASE FILL OUT THIS PANEL.**

Biopsy of: skin oral mucosa conjunctiva other

Specific location:

Lesional site: _____

Normal site: _____

Perilesional site: _____

For Lupus: sun exposed sun protected

If applicable please draw the biopsy site as it relates to the lesion.



See "Suggested biopsy sites" for major bullous and collagen-vascular diseases on panels to the left.

Fixative used: Beutner Labs Other: _____
(Biopsies in formalin can NOT be used for DIF.)

Clinical diagnoses: _____

ICD-10 Code (Required): _____

Clinical findings: _____

Therapy: _____

ANA titer _____

Anti Ro(SS-A)/La(SS-B): _____ ANA pattern _____

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 SERUM KITS (4 KITS/BOX) # _____
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TEST REQUEST FORM

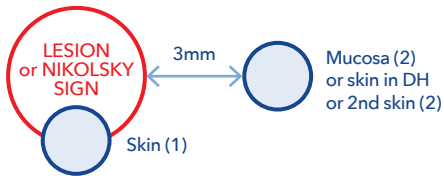
PLEASE COMPLETE ALL ITEMS TYPE OR PRINT PER HIPAA REGULATIONS		
Patient Last Name		
First Name	MI	
Parent Name (if patient is a minor)		
Address		
City	State	Zip
DOB (M/D/Y)	Age:	Sex: <input type="checkbox"/> M <input type="checkbox"/> F
DATE OF SPECIMEN (Required by State and Federal Law)		
Please Bill: <input type="checkbox"/> Insurance <input type="checkbox"/> Patient <input type="checkbox"/> Lab <input type="checkbox"/> Doctor		
I accept responsibility for bills related to the testing of my specimen: PATIENT SIGNATURE		
HEALTH INSURANCE INFORMATION REQUIRED COPIES OF INSURANCE CARDS, FRONT AND BACK		
<input type="checkbox"/> Inpatient <input type="checkbox"/> Outpatient If Inpatient, please complete:		
Facility		
Address		
City	State	Zip
Admin Date	MR/Lab #	
Insurance Company		
Policy #	Group #	
Authorization # (if insurance requires)		
Requesting Doctor		
Specialty	NPI #	
Group Name		
Address		
City	State	Zip
Doctor's Email		
Doctor's Phone	()	
HIPAA Fax	()	
PHYSICIAN SIGNATURE		
*Required by CMS		

BULLOUS DISEASES

SKIN AND MUCOSAL BIOPSY STUDIES

- 001 Direct immunofluorescence (DIF) for IgG, IgA, IgM, fibrin and C3. If needed, IgG4 and/or IgG1 are also added for greater sensitivity.
- 002 Differentiation of bullous pemphigoid from epidermolysis bullosa acquisita by DIF of 1 M NaCl split biopsy (with no vesicles)
- 003 Light microscopy (H&E)
- 004 Light microscopy (H&E) - consult only

BLISTERING AND OTHER ERUPTIONS



Please fill in data on back of form. See back of form for abbreviations.

- (1) Skin biopsy in most pemphigus/pemphigoid cases.
- (2) Mucosal biopsy or skin biopsy for DH or 2nd skin biopsy for pemphigus or pemphigoid cases.

SERUM STUDIES

- 013 Pemphigus/pemphigoid antibody titer on monkey esophagus by IgG & IgG4 indirect IF (Mk. esoph-IIF)
- 014 Split skin, pemphigoid/epidermolysis bullosa acquisita (EBA) differentiation by IgG & IgG4 indirect IF (Split-IIF)
- 015 Desmoglein (Dsg3 and Dsg1) ELISA for pemphigus antibodies
- 016 BP230 (BPAG1) and BP180 (BPAG2) ELISA for pemphigoid antibodies
- 017 Paraneoplastic pemphigus antibody titer (on rat bladder) (PPA-IIF)
- 009 Envoplakin antibodies (ELISA)
- 018 Pemphigus antibody titer prognostic test comparing old and new sera for IgG and IgG4 (Mk. esoph-IIF)
- 019 Pemphigoid gestationis (HG) factor (HG-IIF)
- 020 IgA anti endomysial antibodies (AEmA-IIF)
- 021 IgA tissue transglutaminase antibodies (tTG-ELISA)
- 022 IgA epidermal transglutaminase antibodies (eTG-ELISA)
- 023 Antibodies to collagen VII (ELISA) to rule out EBA
- 024 IgA split skin - IIF, linear IgA bullous dermatosis (LABD)

SERUM PROFILES

BASIC PEMPHIGUS - PEMPHIGOID SCREEN

- 013 **Basic P-P Screen**
Mk. esoph. for IgG and IgG4 antibodies by indirect immunofluorescence (IIF).
Do other profiles if positive Yes No

PEMPHIGUS PROFILE

- 025 **Profile #1**
Mk. esoph. for IgG and IgG4 antibodies by IIF and Dsg 3/1 ELISA.

PARANEOPLASTIC PEMPHIGUS

- 026 **Profile #2**
Mk. esoph. for IgG, IgG1 & IgG4 antibodies by IIF plus IIF on rat bladder and Dsg3/1 ELISA and envoplakin ELISA.

PEMPHIGOID/EBA PROFILE

- 027 **Profile #3**
Mk. esoph. and split skin for IgG & IgG4 antibodies by IIF and BP180 plus BP230 ELISA, or Collagen VII antibodies by ELISA.

DERMATITIS HERPETIFORMIS AND CELIAC DISEASE

- 020 IgA anti endomysial antibodies (AEmA-IIF)
- 021 IgA tissue transglutaminase antibodies (tTG-ELISA)
- 022 IgA epidermal transglutaminase antibodies (eTG-ELISA)
- 028 AEmA, tTG-ELISA and eTG-ELISA

HEREDITARY EPIDERMOLYSIS BULLOSA

- 011 IF mapping of pencil eraser induced clefts in normal skin away from lesions for hereditary epidermolysis bullosa (EB):
a) Primary screen for collagen type VII, collagen type IV, & keratin 14 to check for suitable biopsy
b) For suitable biopsies, test for collagen XVII, alpha6 integrin, beta4 integrin, laminin 332 and plectin to differentiate dystrophic EB and junctional EB from EB simplex
- 003 Light microscopy for hereditary EB of an intact, spontaneous vesicle or a freshly induced perilesional cleft for diagnosis of HEREDITARY EB.

MOLECULAR STUDIES (SERUM/BIOPSY)

T CELL NEOPLASMS

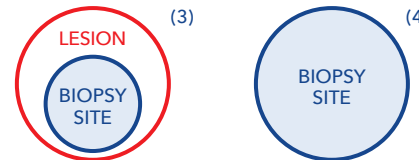
- 048 Gamma receptor rearrangement
- 049 **Profile** (gamma and beta receptor rearrangement)

LUPUS ERYTHEMATOSUS, CONNECTIVE TISSUE & VASCULAR DISEASE

SKIN AND MUCOSAL BIOPSIES

- 005 Direct immunofluorescence for SLE, DLE & SCLE with tests for IgG, IgA, IgM, fibrin and C3
- 007 Direct immunofluorescence for dermatomyositis with tests for IgG, IgA, IgM, fibrin, C3 and C5b-9
- 006 Direct immunofluorescence for vasculitis with tests for IgG, IgA, IgM, fibrin and C3
- 008 Complement plus Direct IF (C+DIF) for scleroderma & others with human complement + anti-C3
- 003 Light microscopy (H&E) to rule out LE*
- 004 Light microscopy (H&E) - consult only

COLLAGEN VASCULAR DISEASES



Please fill in data on back of form. See back of form for abbreviations.

- (3) Sun exposed skin biopsy in most LE cases.
Skin biopsy to rule out Henoch Schoenlein purpura and vasculitis (lesion less than 48 hours old)
- (4) Skin biopsy to rule out SLE

SERUM STUDIES*

- 029 Antinuclear antibody (ANA) titers and patterns on HEp2 cells by standard ANA
- 030 Antibodies to native (n) DNA
- 032 Anticentromere antibodies (ACA)
- 033 Stratified epithelium specific ANA (SES-ANA)/titer for Chronic Ulcerative Stomatitis

* All positives are titrated.

ELISA STUDIES: ANTIBODIES TO EXTRACTABLE NUCLEAR ANTIGENS, ETC.

- 034 Sm, RNP, Ro(SS-A) and La(SS-B) -SLE & Others
- 035 Ro(SS-A) -SLE, SCLE, SjSy & Others
- 036 La(SS-B) -SLE, SCLE, SjSy & Others
- 037 Sm -SLE
- 038 RNP -SLE, MCTD & Others
- 039 Scl-70 -systemic sclerosis
- 040 Jo-1 -polymyositis & dermatomyositis
- 041 Antibodies to histone
- 042 Anti-beta2 glycoprotein I IgG

NOTE: SERUM STUDIES AND PROFILES REQUIRE A MINIMUM OF 2-5ml OF SERUM

SYSTEMIC CONNECTIVE TISSUE DISEASE SERUM STUDY PROFILES

BASIC PROFILE A

- 043 **Basic Profile A**
ANA titers and patterns on HEp2 cells, antibodies to Ro(SS-A) and La(SS-B).

SYSTEMIC LE SCREEN

- 044 **Profile B**
ANA titers and patterns on HEp2 cells, antibodies to nDNA, Ro(SS-A), La(SS-B), Sm and RNP.

SYSTEMIC CONNECTIVE TISSUE DISEASES SCREEN

- 045 **Profile C**
ANA titers and patterns on HEp2 cells, antibodies to nDNA, Ro(SS-A), La(SS-B), Sm, RNP, Jo-1, Scl-70 and beta2 glycoprotein I IgG.

DRUG INDUCED LE/SLE SCREEN

- 046 **Profile D**
ANA titers and patterns on HEp2 cells, antibodies to nDNA, Ro(SS-A), La(SS-B), Sm, RNP and histone.

SYSTEMIC SCLEROSIS SCREEN

- 047 **Profile E**
ANA titers and patterns on HEp2 cells, Scl-70, Sm, RNP and ACA.

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