

# TEST REQUESTS

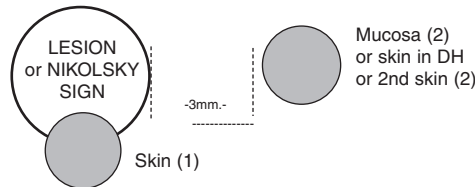
## BULLOUS DISEASES

### SKIN AND MUCOSAL BIOPSY STUDIES

- Direct IMMUNOFLUORESCENCE (DIF) for IgG, IgA, IgM, fibrin and C3. If needed, also IgG4 and IgG1 (for questionable DIF reactions)
- Differentiation of bullous pemphigoid from epidermolysis bullosa acquisita by DIF of 1 M NaCl split biopsy (with no vesicles)
- LIGHT MICROSCOPY (H&E)#
- LIGHT MICROSCOPY (H&E) - CONSULT ONLY#  
# Not in AL, AR, CO, CT, DE, GA, IA, IL, NE, NC, NV, OH, SC, TN, TX, UT & WV

Please fill in data on back of form.

### BLISTERING AND OTHER ERUPTIONS



- (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

- Pemphigus/pemphigoid antibody titer on monkey esophagus by IgG & IgG4 indirect IF (Mk. esoph-IIF)
- Split skin, pemphigoid/epidermolysis bullosa acquisita (EBA) differentiation by IgG & IgG4 indirect IF (Split-IIF)
- Desmoglein (Dsg3 and Dsg1) ELISA for pemphigus antibodies
- BP230 (BPAG1) and BP180 (BPAG2) ELISA for pemphigoid antibodies
- Complement immunofluorescence on monkey esophagus for paraneoplastic pemphigus (CIIF-ME)
- Paraneoplastic pemphigus antibody titer (on rat bladder) (PPA-IIF)
- Pemphigus antibody titer prognostic test comparing old and new sera for IgG and IgG4 (Mk. esoph-IIF)
- Pemphigoid gestationis (HG) factor (HG-IIF)
- IgA anti endomysial antibodies (AEmA-IIF)
- IgA tissue transglutaminase antibodies (tTG-ELISA)

## BULLOUS DISEASES SERUM PROFILES

### BASIC PEMPHIGUS - PEMPHIGOID SCREEN

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

### PEMPHIGUS PROFILE

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

### PARANEOPLASTIC PEMPHIGUS

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

### PEMPHIGOID PROFILE

- Profile #3  
Mk. esoph. and split skin for IgG & IgG4 antibodies by IIF and BP180 plus BP230 ELISA.

### DERMATITIS HERPETIFORMIS and CELIAC DISEASE

- IgA anti endomysial antibodies (AEmA)
- IgA tissue transglutaminase antibodies (tTG-ELISA)  
**Screening profile\* - All positives filed for tracking.**
- AEmA and tTG-ELISA  
\*Suggested for use with DIF

### HEREDITARY EPIDERMOLYSIS BULLOSA

- 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-beta4 integrin, laminin 332 and plectin to differentiate dystrophic EB and junctional EB from EB simplex
- LIGHT MICROSCOPY FOR HEREDITARY EB of an intact, spontaneous vesicle or a freshly induced perilesional cleft for diagnosis of HEREDITARY EB.#  
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### NOTES

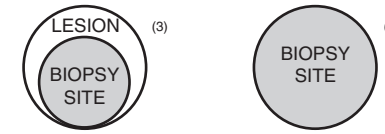
For indications on biopsy sites and for follow-up studies on remainder of specimen see UPDATE on IF mapping (available on request).

## LUPUS ERYTHEMATOSUS, CONNECTIVE TISSUE AND VASCULAR DISEASE

### SKIN AND MUCOSAL BIOPSIES

- Direct IMMUNOFLUORESCENCE for SLE, DLE & SCLE with tests for IgG, IgA, IgM, fibrin, and C3
- Direct IMMUNOFLUORESCENCE for vasculitis with tests for IgG, IgA, IgM, fibrin, and C3
- Complement plus Direct IF (C+DIF) for scleroderma & others with human complement + anti-C3
- LIGHT MICROSCOPY (H&E) to rule out LE#
- LIGHT MICROSCOPY (H&E) - CONSULT ONLY#  
# Not in AL, AR, CO, CT, DE, GA, IA, IL, NE, NC, NV, OH, SC, TN, TX, UT & WV

### COLLAGEN VASCULAR DISEASES



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

- (3) 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\*

- Antinuclear antibody (ANA) titers and patterns on HEp2 cells by standard ANA & complement fixing ANA (CANA) methods plus CANA/ANA ratio (must be tested together)
- Antibodies to native (n) DNA
- Complement fixing nDNA antibodies
- Anticentromere antibodies (ACA)
- Stratified epithelium specific ANA and CANA titer for chronic ulcerative stomatitis (SES-ANA & SES-CANA)

\* All positives are titrated.

### ELISA Studies: Antibodies to Extractable Nuclear Antigens, etc.

- Sm, RNP, Ro(SS-A) and La(SS-B) - SLE & Others
- Ro(SS-A) - SLE, SCLE, SjSy & Others
- La(SS-B) - SLE, SCLE, SjSy & Others
- Sm - SLE
- RNP - SLE, MCTD & Others
- Scl 70 - systemic sclerosis
- Jo-1 - polymyositis & dermatomyositis
- Antibodies to histones
- 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

- Basic Profile A**  
ANA titers and patterns on HEp2 by standard ANA and CANA methods, antibodies to Ro(SS-A) and La(SS-B).

### Systemic LE Screen

- Profile B**  
ANA titers and patterns on HEp2 by standard ANA and CANA methods, antibodies to nDNA, Ro(SS-A), La(SS-B), Sm and RNP.
- Profile B/\$ Cost Effective Profile B**  
Screen for CANA, ANA, Ro(SS-A) and La(SS-B). If CANA is positive, do the rest of Profile B.

### Systemic Connective Tissue Diseases Screen

- Profile C**  
ANA titers and patterns on HEp2 by standard ANA and CANA methods, antibodies to nDNA, Ro(SS-A), La(SS-B), Sm, RNP, Jo-1, Scl 70, and beta2 glycoprotein I IgG.
- Profile C/\$ Cost Effective Profile C**  
Screen for CANA, ANA, Ro(SS-A) and La(SS-B). If CANA is positive, do the rest of Profile C.

### Drug Induced LE/SLE Screen

- Profile D**  
ANA titers and patterns on HEp2 by standard ANA and CANA methods, antibodies to nDNA, Ro(SS-A), La(SS-B), Sm, RNP, and histones.
- Profile D/\$ Cost Effective Profile D**  
Screen for CANA, ANA, Ro(SS-A) and La(SS-B). If ANA or CANA is positive, do rest of Profile D.

### Systemic Sclerosis Screen

- Profile E**  
ANA titers and patterns on HEp2 by standard ANA and CANA methods, Scl 70, Sm, RNP and ACA.
- Profile E/\$ Cost Effective Profile E**  
Screen for CANA & ANA. If CANA is positive, do rest of Profile E.

EFFECTIVE 1/2010

## 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 for 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, allergic reactions, toxic epidermal necrolysis, erythema multiforme 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 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.

Website: [www.beutnerlabs.com](http://www.beutnerlabs.com)

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

**If SLE is suspected,** take biopsy of exposed normal skin of forearm for DIF for LE band test and blood in red top tube for serum studies for ANA, complement fixing ANA (CANA) and tests for ARA criteria.

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

| LE band in skin:    | DLE      | SLE      |
|---------------------|----------|----------|
| Lesional area       | Positive | Positive |
| Normal exposed area | Negative | Positive |

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

**If scleroderma is suspected,** take biopsy of exposed skin for DIF and C+DIF studies and blood for serum studies with 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.

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

*Light microscopic studies of skin biopsies cannot be done by BL for the following states because they require a pathologist who holds a license for that particular state: AL, AR, CO, CT, DE, GA, IA, IL, NE, NC, NV, OH, SC, TN, TX, UT, and WV*

## 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-9 Code: \_\_\_\_\_

Clinical findings: \_\_\_\_\_

Therapy: \_\_\_\_\_

Anti Ro(SS-A) / La(SS-B): \_\_\_\_\_ ANA titer \_\_\_\_\_  
ANA pattern \_\_\_\_\_

## ARA CRITERIA FOR SLE

- Malar rash
- Discoid rash
- Photosensitivity
- Oral or nasopharyngeal ulceration
- Arthritis
- Serositis (pleuritis or pericarditis)
- Renal disorder (proteinuria, casts)
- Neurologic disorder (psychosis or seizures)
- Hematologic disorder (hemolytic anemia, leukopenia, lymphopenia, thrombocytopenia)
- Immunologic disorder (anti-DNA, anti Sm, anti-phospholipid antibodies, lupus anticoagulant, false positive serologic test for syphilis with confirmation)
- Abnormal titer of antinuclear antibody (ANA)

## BEUTNER LABORATORIES



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## TEST REQUEST FORM

**PLEASE COMPLETE ALL ITEMS - TYPE OR PRINT PER HIPAA REGULATIONS**

PATIENT NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

\_\_\_\_\_ STREET

\_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

D.O.B. (M/D/Y) \_\_\_\_\_ RACE \_\_\_\_\_ SEX: M \_\_\_\_\_ F \_\_\_\_\_

IN-PATIENT \_\_\_\_\_ OUT-PATIENT \_\_\_\_\_

DATE OF SPECIMEN \_\_\_\_\_

ADMISSION DATE: \_\_\_\_\_ DISCHARGE DATE: \_\_\_\_\_

PARENT NAME: IF PATIENT IS A MINOR \_\_\_\_\_

WEIGHT OF PATIENT: REQUIRED WHEN PATIENT'S AGE IS LESS THAN 29 DAYS OLD

\_\_\_\_\_ lbs. \_\_\_\_\_ oz.

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