

Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB: 8/28/1933
Gender: Female
Patient Identifiers: 01234567890ABCD, 012345
Visit Number (FIN): 01234567890ABCD
Collection Date: 01/01/2017 12:34

Epithelial Skin Antibody

ARUP test code 0090299

Epithelial Skin Antibodies

See Note

IMMUNODERMATOLOGY REPORT

Specimen(s):
1. Serum specimen

Clinical/Diagnostic Information:
No clinical information provided.

DIAGNOSTIC INTERPRETATION

Basement membrane zone antibody monitoring, consistent with pemphigoid

(See Results, Comments including additional test recommendations, and Previous Basement Membrane Zone Antibody Test Results Comparison Chart)

RESULTS

Indirect Immunofluorescence

Basement Membrane Zone (BMZ) IgG and IgA Antibodies

IgG: Positive, titer greater than 1:40,960 (H), monkey esophagus substrate
Positive, epidermal pattern, titer greater than 1:40,960 (H), human split skin substrate

IgA: Negative, monkey esophagus substrate
Negative, human split skin substrate

Reference Range:

Positive (H) - Titer greater than 1:10
Borderline - Titer 1:10
Negative - Titer less than 1:10

Pattern on Human BMZ Split Skin:

IgG epidermal or epidermal-dermal combined BMZ antibody pattern = pemphigoid

IgG dermal BMZ antibody pattern = epidermolysis bullosa acquisita

IgA epidermal, epidermal-dermal combined, or, dermal BMZ antibody pattern = linear IgA bullous dermatosis

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

Cell Surface IgG and IgA Antibodies

IgG: Negative, monkey esophagus substrate
Negative, intact human skin substrate

IgA: Negative, monkey esophagus substrate
Negative, intact human skin substrate

Reference Range:

Positive - Titer greater than 1:10
Borderline - Titer 1:10
Negative - Titer less than 1:10

(H = high/positive)

COMMENTS
Specific

The positive IgG basement membrane zone antibody localization on monkey esophagus substrate and the epidermal pattern of IgG basement membrane zone antibody staining on human split skin substrate by indirect immunofluorescence support the diagnosis of pemphigoid. IgG BP 180 and/or IgG BP 230 antibody levels by ELISAs are sensitive diagnostic markers in pemphigoid, and IgG BP 180 antibody levels by ELISA may correlate with disease activity in pemphigoid. In prior testing, this patient had positive IgG basement membrane zone antibodies by indirect immunofluorescence with increased IgG BP 180 and IgG BP 230 antibody levels by ELISAs, consistent with pemphigoid. See chart (below) for comparison to previous basement membrane zone antibody test results.

To further evaluate the immunopathological profile in monitoring disease activity, ELISA testing for IgG Bullous Pemphigoid Antigens, BP 180 and BP 230, Antibodies (ARUP test number 0092566) is recommended, and may be requested on this serum specimen by contacting ARUP Client Services at 1-800-242-2787, option 2, with an add-on test request for:

- Bullous Pemphigoid Antigens BP 180 and BP 230, IgG antibodies (ARUP test number 0092566)

The negative IgG and IgA cell surface antibodies by indirect immunofluorescence are against, but do not rule out, the diagnoses of pemphigus vulgaris, pemphigus foliaceus, other types of IgG pemphigus, and IgA pemphigus. In certain patients with pemphigus, IgG desmoglein 1 and/or IgG desmoglein 3 antibody levels by ELISAs may be more sensitive diagnostic markers than indirect immunofluorescence. If clinically indicated to further evaluate for pemphigus in addition to pemphigoid, ELISA testing can be performed on this specimen by add-on test request through ARUP Client Services for IgG Desmoglein 1 and Desmoglein 3 antibodies (ARUP test number 0090649).

If it would be helpful to discuss this patient's case with this report, contact ARUP Client Services at 1-800-242-2787, option 2, and ask to speak with the Immunodermatology Laboratory at the University of Utah regarding patient results.

PREVIOUS TEST RESULTS COMPARISON CHART

Basement Membrane Zone Antibodies

Serum Number	Date of Specimen	IgG BMZ Titers	IgA BMZ Titers	BP 180	BP 230	CoII VII
19-4295	08/21/19	IgG ME:>1:40,960 IgG SS: Epi, >1:40,960	ME: Neg SS: Neg	114*	140*	NA
20-0250	01/12/20	IgG ME:>1:40,960	ME: Neg	NA	NA	NA

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

(See Note 1) IgG SS: Epi, SS: Neg
>1:40,960

Note 1: Negative IgG and IgA cell surface antibodies by indirect immunofluorescence also observed in this Epithelial skin Antibody Panel testing

Chart Key:

IgG BMZ = IgG basement membrane zone (BMZ) antibodies by indirect immunofluorescence
IgA BMZ = IgA basement membrane zone (BMZ) antibodies by indirect immunofluorescence

ME = Antibody absence (negative) or antibody presence (positive endpoint titer) on monkey esophagus (ME) substrate

SS = Antibody absence (negative) or antibody presence (positive pattern and endpoint titer) on split skin (SS) substrate

Epi = epidermal staining pattern on split skin substrate (IgG - pemphigoid including bullous pemphigoid, mucous membrane pemphigoid, and other pemphigoid variants; IgA - linear IgA disease including linear IgA bullous dermatosis and chronic bullous disease of childhood)

Derm = dermal staining pattern on split skin substrate (IgG - epidermolysis bullosa acquisita, bullous lupus erythematosus, anti-laminin-332 pemphigoid, anti-p200 (laminin gamma-1) pemphigoid, other rare pemphigoid subtypes; IgA - linear IgA disease including linear IgA epidermolysis bullosa acquisita)

Comb = combined epidermal-dermal staining pattern (IgG - pemphigoid and pemphigoid variants; IgA - linear IgA disease)

BP 180 = IgG BP 180 antibody level (Units/mL) by ELISA
BP 230 = IgG BP 230 antibody level (Units/mL) by ELISA
Coll VII = IgG Collagen VII antibody level (Units/mL) by ELISA

Neg = Negative
NA = Not Assayed

* This is an extrapolated value, greater than the highest calibrator in the assay. This level is markedly increased; however, this antibody level is not on the linear portion of the calibrator curve and may not be comparable to other levels above the calibrator range or to levels within calibrator range, 0-100 units/mL. If it would be clinically helpful in monitoring disease activity, dilution testing of this specimen may be requested to obtain comparable levels of antibodies in the high ranges. Contact ARUP Client Services at 1-800-242-2787, option 2, and ask to speak with the Immunodermatology Laboratory at the University of Utah regarding patient results.

COMMENTS

General

Approximately 80 percent of patients with bullous pemphigoid, epidermolysis bullosa acquisita, and linear IgA bullous dermatosis have positive antibodies to basement membrane zone components in their sera detected by indirect immunofluorescence. Approximately 50 percent of patients with mucous membrane/cicatrical pemphigoid demonstrate antibodies to basement membrane zone components detected by indirect immunofluorescence. The immunoglobulin class of basement membrane zone antibodies and pattern of staining on split skin substrate distinguish the diseases.

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

ARUP LABORATORIES | 800-522-2787 | aruplab.com
500 Chipeta Way, Salt Lake City, UT 84108-1221
Tracy I. George, MD, Laboratory Director

Patient: Patient, Example
ARUP Accession: 20-012-400488
Patient Identifiers: 01234567890ABCD, 012345
Visit Number (FIN): 01234567890ABCD
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Greater than 80 percent of patients with pemphigus have positive epithelial cell surface antibodies in their sera identified by indirect immunofluorescence. Serum antibody titers correlate with disease activity. Cell surface antibodies are implicated in the pathophysiology of pemphigus and are not typically detected in normal individuals, in patients with other diseases or in patients with pemphigus whose disease activity is minimal and/or under therapeutic control. IgG cell surface antibodies characteristically are positive by indirect immunofluorescence in IgG pemphigus variants, including pemphigus foliaceus and pemphigus vulgaris, and IgA cell surface antibodies characteristically are positive in IgA pemphigus and also may be observed in some pemphigus variants along with positive IgG cell surface antibodies.

TESTING METHODS
Indirect Immunofluorescence

IgG and IgA Epithelial Basement Membrane Zone and Cell Surface Antibodies

The patients serum is progressively diluted beginning at 1:5 in four two-fold screening dilutions, layered on sections of human skin split at the basement membrane zone, intact human skin, and monkey esophagus substrates, and stained with fluorescein-conjugated anti-IgG and anti-IgA using Analyte Specific Reagents (ASRS). When positive, the serum is further diluted in two-fold reductions to the limiting dilution of antibody detection or to a maximum dilution of 1:40,960. These tests were developed and their performance characteristics determined by the Immunodermatology Laboratory at the University of Utah. They have not been cleared or approved by the U.S. Food and Drug Administration. ASRS are used in many laboratory tests necessary for standard medical care and generally do not require FDA approval. These tests should not be regarded as investigational or for research only. [Immunofluorescence studies, two antibodies on three substrates with two limiting dilution end-point titers]

██████████, MD
Immunodermatologist
Electronically signed 1/20/2020 6:28:02PM
Performed at: ARUP - University Hospital Laboratory, 417 Wakara Way Salt Lake City UT 84108

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Epithelial Skin Antibodies	20-012-400488	1/12/2020 11:09:00 AM	1/14/2020 8:25:34 AM	1/21/2020 5:24:00 PM

END OF CHART

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Unless otherwise indicated, testing performed at:

ARUP LABORATORIES | 800-522-2787 | aruplab.com
500 Chipeta Way, Salt Lake City, UT 84108-1221
Tracy I. George, MD, Laboratory Director

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