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

Physician: Doctor, Example

Patient: Patient, Example

DOB	7/2/1954
Gender:	Female
Patient Identifiers:	01234567890ABCD, 012345
Visit Number (FIN):	01234567890ABCD
Collection Date:	00/00/0000 00:00

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

Negative IgG and IgA basement membrane zone and cell surface epithelial antibodies by indirect immunofluorescence

(See Results and Comments including further testing considerations)

RESULTS
Indirect Immunofluorescence

Basement Membrane Zone (BMZ) IgG and IgA Antibodies

IgG: Negative, monkey esophagus substrate
Negative, 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

Cell Surface IgG and IgA Antibodies

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

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

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 negative IgG and IgA basement membrane zone antibodies by indirect immunofluorescence testing do not provide support for, but do not rule out, the diagnoses of pemphigoid, epidermolysis bullosa acquisita, and linear IgA bullous dermatosis. In certain patients with pemphigoid, IgG BP 180 and/or IgG BP 230 antibody levels by ELISAs may be more sensitive diagnostic markers than indirect immunofluorescence, and in certain patients with epidermolysis bullosa acquisita, the IgG type VII collagen antibody level by ELISA may be a more sensitive diagnostic marker than indirect immunofluorescence. Therefore, if clinically indicated to further evaluate for pemphigoid and/or epidermolysis bullosa acquisita, ELISA testing may be accomplished on this specimen by add-on test request for Bullous Pemphigoid Antigens, BP 180 and BP 230, IgG antibodies (ARUP test number 0092566) and IgG Collagen Type VII Antibody (ARUP test number 2010905); ordering and contact information follows.

The negative IgG and IgA cell surface antibodies by indirect immunofluorescence testing do not provide support for, 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. Therefore, if clinically indicated to further evaluate for pemphigus foliaceus and pemphigus vulgaris, ELISA testing may be accomplished on this specimen by add-on test request for IgG Desmoglein 1 and IgG Desmoglein 3 antibodies (ARUP test number 0090649).

Additional testing on this specimen may be requested by contacting ARUP Client Services at 1-800-242-2787, option 2, for.
- Bullous Pemphigoid Antigens, BP 180 and BP 230 antibodies, IgG (ARUP test number 0092566) and
- IgG Collagen Type VII antibodies (ARUP test number 2010905) and/or
- IgG Desmoglein 1 and Desmoglein 3 antibodies (ARUP test number 0090649).

Detection, levels, and patterns of diagnostic antibodies may fluctuate with disease manifestations. Clinical correlation is needed, including with direct immunofluorescence on a biopsy specimen and treatment status, with consideration for monitoring serum antibody levels by ELISAs along with antibody profiles by indirect immunofluorescence to aid in assessing disease expression and activity.

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.

The reported findings from the testing of this specimen were reviewed concurrently by [redacted] M.D. and [redacted], M.D.

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 by indirect immunofluorescence in their sera. Approximately 50 percent of patients with mucous membrane/cicatricial pemphigoid demonstrate antibodies to basement membrane zone components. The class of basement membrane zone antibodies and pattern of staining on split skin substrate distinguish the diseases.

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]

[redacted], MD
Pathologist
Electronically signed 1/28/2020 8:43:21AM
Performed at: ARUP - University Hospital Laboratory, 417 Wakara Way Salt Lake City UT 84108

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

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Epithelial Skin Antibodies	20-021-129880	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00

END OF CHART

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