MAYO CLINIC LABORATORIES

Test Definition: RSBV

Rare Subepithelial Autoimmune Blistering Disease Variants, Serum

Overview

Useful For

Aiding in the diagnosis of rare subepithelial autoimmune blistering diseases, including anti-laminin 332 pemphigoid, anti-p200 pemphigoid, epidermolysis bullosa acquisita, and systemic bullous lupus erythematosus

Testing Algorithm

For information see Autoimmune Blistering Disease Diagnostic Algorithm.

Special Instructions

- Autoimmune Blistering Disease Diagnostic Algorithm

Method Name

Indirect Immunofluorescence

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 2 mL serum
Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Specimen Minimum Volume

Serum: 0.5 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK

Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	14 days	
	Ambient	14 days	
	Frozen	30 days	

Clinical & Interpretive

Clinical Information

Laminin 332 (LM332) pemphigoid is a rare subepithelial autoimmune blistering disease that can affect the conjunctival, esophageal, oral, and genital mucosa and skin. With LM332 pemphigoid, there is a risk of blindness and esophageal stricture, among other serious complications. In addition, approximately 20% to 30% of patients with LM332 pemphigoid have an underlying malignancy driving their mucocutaneous disease. Therefore, it is generally accepted that patients found to have circulating LM332 antibodies should be screened for an occult malignancy.

P200 pemphigoid, a rare subepithelial autoimmune blistering disease affecting the skin, shares some clinical characteristics with psoriasis, a much more common inflammatory dermatosis of the skin. However, identification of circulating p200 autoantibodies predicts the development of blisters and portends a worse clinical therapeutic response.

Collagen VII autoantibodies are pathogenic in two rare subepithelial autoimmune blistering diseases: epidermolysis bullosa acquisita (EBA) and bullous systemic lupus erythematosus (BSLE). A diagnosis of EBA is confirmed upon identification of circulating autoantibodies to collagen VII and predicts a refractory treatment course. In addition, patients with EBA have a high rate of associated inflammatory bowel disease (IBD), so identification of collagen VII autoantibodies may prompt clinicians to increase surveillance for IBD. In the appropriate clinical context, circulating autoantibodies to collagen VII may support a diagnosis of BSLE. Accurate identification of BSLE is important, as most patients with this condition have severe manifestations of lupus in other organs, such as lupus nephritis. While our immunodermatology laboratory offers another test to detect collagen VII autoantibodies (COL7 / Anti-Collagen type VII, IgG antibodies, Serum), collagen VII is a large protein, rendering autoantibodies against this target immunologically heterogeneous.

Reference Values

Negative in individuals without any known rare subepithelial blistering diseases

Interpretation

This test panel is comprised of cell-based assays to detect antibodies directed against laminin-332, p200, or collagen VII. This panel's intended in vitro use is as an aid in the diagnosis of rare subepithelial autoimmune blistering diseases, including anti-laminin 332 pemphigoid, anti-p200 pemphigoid, epidermolysis bullosa acquisita, and systemic bullous lupus erythematosus.

A positive test result for laminin-332 antibodies may correlate with a diagnosis of laminin-332 pemphigoid in the

appropriate clinical setting. Laminin-332 pemphigoid is associated with a higher rate of associated malignancy and ocular mucosal disease than conventional pemphigoid.

A positive test result for p200 antibodies may correlate with a diagnosis of p200 pemphigoid in the appropriate clinical setting. P200 pemphigoid can be associated with a more recalcitrant disease course than conventional pemphigoid and may be associated with psoriasis.

A positive test result for collagen VII antibodies may correlate with a diagnosis of epidermolysis bullosa acquisita (EBA) or bullous systemic lupus erythematosus (BSLE) in the appropriate clinical setting. EBA can be associated with inflammatory bowel disease and a more recalcitrant disease course in some patients. BSLE is usually associated with systemic lupus erythematosus.

Recommend correlation with clinical presentation, histopathologic findings from standard biopsy, direct immunofluorescence from a perilesional biopsy (CIB / Cutaneous Direct Immunofluorescence Assay, Varies), indirect immunofluorescence with IgG and IgG4 (CIFS / Cutaneous Immunofluorescence Antibodies, IgG and IgG4, Serum), and other testing as clinically indicated.

Cautions

Results should be interpreted in conjunction with clinical information, histopathologic pattern observed on skin biopsy, results of direct immunofluorescence from a perilesional biopsy, results of indirect immunofluorescence with salt-split skin and esophageal substrates, and other testing as clinically indicated.

Clinical Reference

1. Goletz S, Probst C, Komorowski L, et al. A sensitive and specific assay for the serological diagnosis of antilaminin 332 mucous membrane pemphigoid. Br J Dermatol. 2019;180(1):149-156
2. Amber KT, Bloom R, Hertl M. A systematic review with pooled analysis of clinical presentation and immunodiagnostic testing in mucous membrane pemphigoid: association of anti-laminin-332 IgG with oropharyngeal involvement and the usefulness of ELISA. J Eur Acad Dermatol Venereol. 2016;30(1):72-77. doi:10.1111/jdv.13397
3. Ahmed AR, Kalesinskas M, Kooper-Johnson S. Paraneoplastic autoimmune Laminin-332 syndrome (PALS): Anti-Laminin-332 mucous membrane pemphigoid as a prototype. Autoimmun Rev. 2023;22(10):103444. doi:10.1016/j.autrev.2023.103444
4. Seta V, Aucouturier F, Bonnefoy J, et al. Comparison of 3 type VII collagen (C7) assays for serologic diagnosis of epidermolysis bullosa acquisita (EBA). J Am Acad Dermatol. 2016;74(6):1166-1172. doi:10.1016/j.jaad.2016.01.005
5. Kridin K, Kneiber D, Kowalski EH, Valdebran M, Amber KT. Epidermolysis bullosa acquisita: A comprehensive review. Autoimmun Rev. 2019 Aug;18(8):786-795. doi: 10.1016/j.autrev.2019.06.007
6. Holtsche MM Goletz S, von Georg A, et al. Serologic characterization of anti-p200 pemphigoid: Epitope spreading as a common phenomenon. J Am Acad Dermatol. 2021;84(4):1155-1157
7. Lau I, Goletz S, Holtsche MM, et al. Anti-p200 pemphigoid is the most common pemphigoid disease with serum antibodies against the dermal side by indirect immunofluorescence microscopy on human salt-split skin. J Am Acad Dermatol. 2019;81(5):1195-1197

Performance

Method Description
Biochip slides with transfected cells are overlaid with dilutions of patient's serum, incubated, covered with fluorescein-conjugated IgG4 antiserum, and interpreted with a fluorescence microscope.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Varies

Report Available
1 to 7 days

Specimen Retention Time
30 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
86255

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
RSBV	Rare Subepi Blistering Variants, S	106521-8

Result ID	Test Result Name	Result LOINC® Value
621392	Laminin 332 Antibodies	106532-5
621393	p200 Antibodies	106533-3
621394	Collagen VII Antibodies	106534-1
621404	Other	77202-0