CASEY EYE Institute OHSU

Oregon Health & Science University
OCULAR IMMUNOLOGY LABORATORY
LBRB-Room 253
3181 SW Sam Jackson Park Road, Portland, Oregon 97239
Ph: 503-418-2543 Fax: 503-418-2541

Patient Name: Accession #:SA00116054
Medical Record #:
Account #: Date of Birth: Sex: 9/20/1947
Referral Source: Female Reference Lab no.:
MAYO MEDICAL LABS/REFERRAL Physician(s):

Ocular Immunology (Final result)

Authorizing Provider: Ordering Provider:
Pathologist: David J Wilson, MD Collected: 01/08/2019
Received:

Specimens

A Blood, 5ml

Clinical History

Not provided

Anti Retinal Result

Test results must be interpreted in the context of clinical presentation

Test Name	Result
Autoimmune Retinopathy Panel (ARP)	
Marker	
Carbonic anhydrase II	**positive**
HSP27	negative
Aldolase	negative
Enolase	**positive**
Arrestin	negative
Tubulin	neagtive
PKM2 (pyruvate kinase M2)	**positive**
GAPDH (glyceraldehyde 3-phosphate dehydrogenase)	negative

[Adequacy: Satisfactory for evaluation]
This test was developed and its performance characteristics determined by Ocular Immunology Laboratory OHSU. It has not been approved by the U.S. Food and Drug Administration.

Electronically signed by Grazyna Adamus, PhD, on 12/10/2018 10:08 AM

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Electronically signed by David J Wilson, MD on 12/10/2018 at 1448

Interpretation

Autoimmune Retinopathy (AR)

Autoantibodies (AAbs) against retinal antigens have been associated with autoimmune retinal disorders, including cancer-associated-retinopathy (CAR). AAbs can occur in patients with loss of vision in the absence of an underlying neoplastic disease, which is and autoimmune retinopathy (AR)[Front Immunol 2018, 9]. **A positive result indicates that anti-retinal AAbs are present, which may indicate Autoimmune Retinopathy.** Different anti-retinal antibodies frequently co-exist in a single patient, creating antibody-arrays related to the syndrome. Antibody profile can change with the progression of disease, with each disease stage having its own unique autoantibody signature. Negative serum antibody titers on initial examination can become positive on subsequent testing.

The antigenic biomarkers have been selected based on their frequencies in AR. Of all patients with anti-retinal AAbs, more than 30% patients have anti-α-Enolase antibodies [Autoimmun Rev 8(5):410, 2009][Front Immunol 2017, 8:505]. Anti-Enolase antibodies have also been found in patients with skin cancer and hematological cancers. Moreover, the occurrence of anti-glycolytic enzymes antibodies (Enolase, Aldolase C, and GAPDH) was 2-3 times more frequent in CAR with gynecological cancers than normal women [J Clin Exp Ophthalmol 2013, 4:304] [Front Immunol 2017, 8:505]. Presence of anti-PKM2 was found in AR as well as in other neurological conditions and cancers. Anti-PKM2 AAbs were found in both geographic and neovascular AMD, but the level of anti-PKM2 autoantibody was best correlated with the early stages of AMD. Anti-aldolase autoantibody was selected as a DR marker candidate, and DR patients showed significantly higher autoantibody levels than normal donors or diabetic patients without retinopathy [Proteomics 2006, 6:1200].

Anti-Arrestin AAbs have been found in patients with non-infectious uveitis, AR, and MAR [Inter J Cancer 124:140]. A group of Heat Shock Proteins (hsps), including hsp60 (62-kDa) were frequently recognized by AAbs of AR patient [BMC Ophthalmology. 2013;13(1):48]. Antibodies against HSP27 were increased in women with ovarian carcinoma [Int J Gyn 2009,19, 1516], glaucoma [Ophthalmol 2001, 108, 296], and AR [J Cancer 124:140]. In addition, autoantibodies against CAII were found in patients with autoimmune diseases and carcinomas that include AR and CAR, but also acute anterior uveitis, acute myeloid leukemia (AML), Graves' disease, rheumatoid arthritis, end-stage renal disease [Exp Eye Res 2016, 147:161]. Carbonic anhydrases, including CAII, are crucial enzymes responsible for the regulation of acid-base homeostasis in both healthy and pathological conditions.

Protocols:

MAYO MEDICAL LABS/REFERRAL

Referrals,3050 Superior Dr NW
Rochester Minnesota 55901