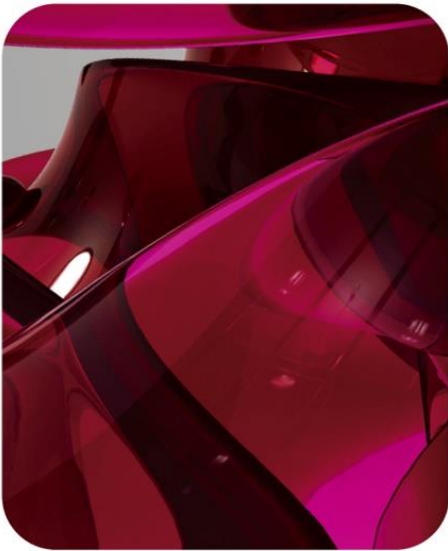




AESKU.DIAGNOSTICS
THE DIAGNOSTIC TOOL THAT WORKS



AESKUBLOTS[®]
THE DIAGNOSTIC TOOL THAT WORKS

INSTRUCTION MANUAL

AESKUBLOTS[®] Myositis Pro
Ref 4003



Product Ref.	4003
Product Desc.	Myositis Proo
Manual Rev. No.	006 : 2016-11-07

Instruction Manual

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1 Intended Use

AESKUBLOTS® Myositis Pro is a membrane based enzyme immunoassay for qualitative detection of IgG antibodies against Jo-1, Mi-2, Pm-Scl, U1-snRNP and Ku in human serum. Antigens are located as parallel lines at exactly defined positions on a nitrocellulose membrane.

The assay is a tool in differential diagnosis of poly- and dermatomyositis and for the diagnosis of myositis-associated autoimmune diseases.

2 Clinical Application and Principle of the Test

Autoimmune myositis forms a heterogeneous group of acquired muscle diseases. The main clinical and morphological characteristics are muscular weakness and inflammatory infiltrates in skeletal muscles.

Antibodies against:

- Jo-1 are directed against histidyl-tRNA synthetase (a cytoplasmic protein involved in protein biosynthesis) and are found in 20-40 % of patients with polymyositis and dermatomyositis.
- Mi-2 occur in 15-20 % of dermatomyositis patients. They have a high diagnostic specificity. 95 % of patients with Mi-2 antibodies suffer from dermatomyositis. However, they occur rarely in polymyositis patients and are therefore an important for differential diagnosis (Roux et al. 1998; Targoff 2000). The Mi-2-antigen is part of a nuclear multiproteincomplex, which may be involved on the regulation of the cellular proliferation cycle.
- the nucleolar antigen Pm-Scl are found in 24 % of Pm-Scl overlap-syndrome patients and in 3-10 % of scleroderma and polymyositis patients.
- U1-snRNP are pathognomonic for mixed connective tissue disease but do also occur in systemic lupus erythematosus (SLE). A high titer of antibodies against this antigen is typical for the Sharp's syndrome.
- Ku mostly react with the p80 subunit respectively a conformational epitope on the p70/p80 heterodimer of the DNA-dependent protein kinase. They also bind other proteins with sequence homology to p70/p80 (e.g. NFIV, TREF, EBP-80, E1BF and Ku-2). They occur in 5-25 % of polymyositis and scleroderma overlap-syndrome patients and 1-7 % of myositis patients. They also occur in of patients with primary pulmonary hypertension (approximately 20 %), with SLE (5-10 %), with primary Sjögren's syndrome (20 %) and occasionally with other connective tissue diseases (Cooley et al. 1999).

Principle of the test

The antigens are applied as lines on a nitrocellulose membrane. The membrane is blocked to prevent unspecific reactions. Membrane-strips with specific antigens at exactly defined positions are incubated in serum samples diluted 1:101. Patient's antibodies, if present in the specimen, bind to the antigen. The unbound fraction is washed off in the following step. Afterwards, anti-human immunoglobulins conjugated to horseradish peroxidase (conjugate) are incubated and react with the antigen-antibody complex of the samples. Unbound conjugate is washed off in the following step. After the addition of the TMB-substrate it is converted by an enzymatic reaction to a blue precipitate. The reaction is stopped by distilled water.

3 Kit Contents

TO BE RECONSTITUTED				
Item	Quantity	Cap color	Solution color	Description / Contents
Blocking Reagent	3 x for 10 ml Concentrate each	white	N/A	Non-fat dry milk powder for preparation of 3 x 10 ml sample buffer
Wash Buffer (20x)	1 x 50 ml	white	colorless	20x concentrated for preparation of 1 L Tris buffer, pH 6.9 ± 0.2
READY TO USE				
Item	Quantity	Cap color	Solution color	Description / Contents
Conjugate, IgG	1 x 10 ml	blue	colorless	Anti-human immunoglobulin G (IgG) conjugated to horseradish peroxidase
TMB Substrate	1 x 10 ml	black	colorless	Stabilized TMB/H ₂ O ₂
Membrane strips	24 strips	colour coding: blue	N/A	Coated antigens see Intended use
tweezers, reference template, scoring sheet, adhesive strip (double-sides, black)	1 pcs. each	N/A	N/A	N/A
incubation tray	3 pcs.	N/A	N/A	N/A
Labels for sample buffer	3 pcs.	N/A	N/A	N/A
MATERIALS REQUIRED, BUT NOT PROVIDED				
rocking platform, cylinder 1000 ml, pipette or cylinder for 10 ml, precision pipettes (10, 1000 µl), absorbent or filter paper. Our tests are designed to be used with purified water according to the definition of the United States Pharmacopeia (USP 26 - NF 21) and the European Pharmacopeia (Eur.Ph. 4th ed.).				

4 Storage and Shelf Life

Store all reagents and membrane-strips at 2-8°C/35-46°F in their original containers. Once prepared, reconstituted solutions are stable at 2-8°C/35-46°F for at least six weeks. Reagents and strips shall be used within the expiry date indicated on each respective component. Don't use components after the expiry dates. Avoid intense exposure of TMB solution to the light.

5 Precautions of Use and General Introductions

5.1 Health hazard data

This product is for IN VITRO DIAGNOSTIC use only. Thus, only staff trained and specially advised in methods of in vitro diagnostics may perform the kit. Although this product is not considered particularly toxic or dangerous under the conditions of intended use, refer to the following for maximum safety:

Recommendations and precautions

This kit contains potentially hazardous components. Though kit reagents are not classified being irritant to eyes and skin we recommend avoiding contact with eyes and skin and wearing disposable gloves.

Substrate contains kathon (1% v/v) as preservative. It must not be swallowed or allowed to come into contact skin or mucous membrane.

Do not smoke, eat or drink when manipulating the kit. Do not pipette by mouth.

Handle patient samples as if capable of transmitting infectious diseases and according to national requirements.

5.2 General directions for use

To differentiate between the various **AESKUBLOTS®**-tests available, a color coding is applied above the reference line of the strips:

Colour coding	AESKUBLOTS®
yellow	ANA-12 Pro
orange	ANA-17 Pro
blue	Myositis Pro
brown	Liver Pro
purple	Vasculitis Pro
black	Gastro Pro
green	Borrelia-G and Borrelia-M

In case that the product information, including the labeling, is incorrect please contact the manufacturer or the supplier of the test kit.

Blocking Reagent and wash buffer may be interchanged between lots and test kits. All other components are specific for each test kit and are not to be interchanged. Do not exchange reagent components between autoimmunity and borrelia diagnostic tests!

For handling of conjugate do not use polystyrene vessels.

Allow all components to reach room temperature (20-32°C/68-89.6°F) before use, mix well and follow the recommended incubation scheme for an optimum performance of the test.

Never expose components to higher temperature than 37°C/ 98.6°F.

Always pipette substrate solution with brand new tips only. Protect this reagent from light. Never pipette conjugate with tips priorly used with other reagents.

The intensity of the band colour does not necessarily correlate with antibody titers obtained by other reference methodologies.

Samples from apparent normal blood donors may contain autoantibodies.

If the patient sample contains elevated levels of immune complexes or other immunoglobulin aggregates, false positive results by non-specific binding cannot be ruled out.

A definite clinical diagnosis should not be based on the results of the performed test only, but should be made by the physician after all clinical and laboratory findings have been evaluated. The diagnosis is to be verified using different diagnostic methods.

6 Sample Collection, Handling and Storage

Use preferentially freshly collected serum samples. Blood withdrawal must follow national requirements. Do not use icteric, lipemic, hemolysed or bacterially contaminated samples. Sera with particles should be cleared by low speed centrifugation (<1000 x g). Blood samples should be collected in clean, dry and empty tubes.

After separation, the serum samples should be used during the first 8 h. Alternatively, the samples should be stored in tightly closed vials at 2-8°C/35-46°F for up to 48 h, or frozen at -20°C/-4°F for longer periods. Avoid repeated thawing and freezing. Do not use heat inactivated samples.

7 Assay Procedure

7.1 Preparations prior to starting

Confirm that no salt crystals have been formed in the concentrate. If this happened, dissolve the crystals by slightly warming, room temperature should be enough, the concentrate. Dilute concentrated wash buffer 1:20 with distilled water (e.g. 950 ml plus 50 ml).

For preparation of sample buffer: add 10 ml wash buffer to one bottle Blocking Reagent and mix well.

7.2 Test Steps

Important notes:

Follow exactly this protocol. Make sure that the two components mentioned in the protocol are added to the tray in step 2, 6, 9.

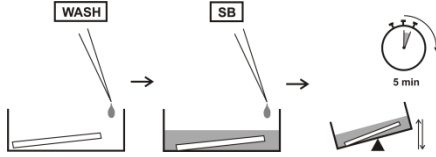
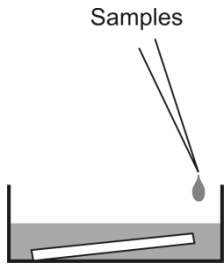
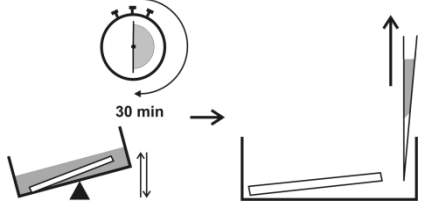
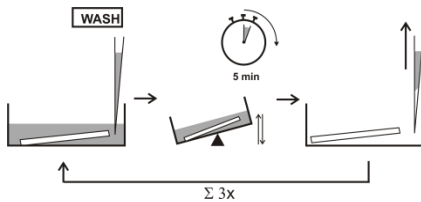
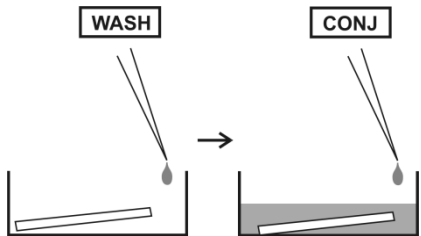
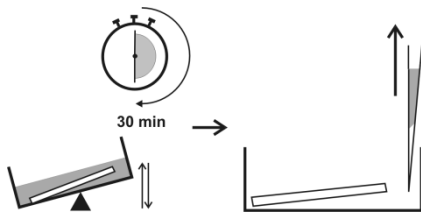
Do not let strip dry out during incubation steps.

Do not touch strip with fingers, use tweezers.

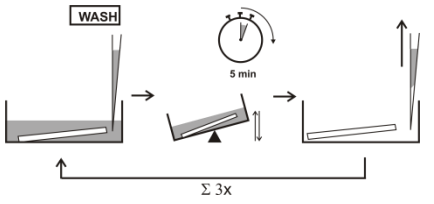
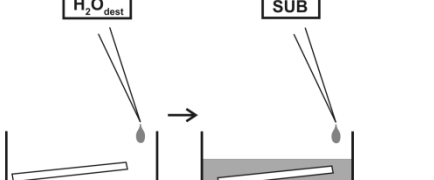
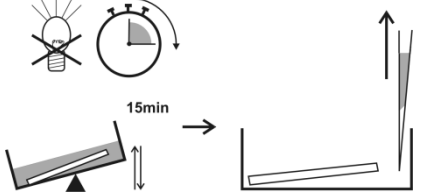
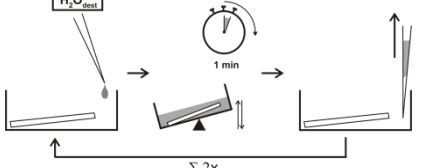
Remove diluted samples completely after incubation of strip to avoid carry over.

Continuously shake strip during incubation steps.

Give sample buffer, conjugate and substrate together with the wash buffer to one side of the incubation tray. Do not allow to flow over the strip.

Step	Description
1.	Ensure the preparations, from step 7.1 above, have been carried out prior to test begin.
2.	 <p>Put strip in correct orientation into incubation tray (reference line and colour coding upwards). Put 700 µl wash buffer and 300 µl sample buffer in the incubation tray. Moisten strip with the solution and incubate for 5 minutes with agitation.</p>
CONTROLS & SAMPLES	
3.	 <p>Pipette 10 µl serum sample into the designated incubation trays with sample buffer.</p>
4.	 <p>Incubate for 30 minutes at 20-32°C/68-89.6°F with agitation. After that remove sample completely.</p>
5.	 <p>Wash 3 times for 5 minutes with 1.5 ml wash buffer by agitation. Remove wash buffer after every washing step.</p>
CONJUGATE	
6.	 <p>Pipette 700 µl wash buffer and 300 µl conjugate into each incubation tray with strip.</p>
7.	 <p>Incubate for 30 minutes at 20-32°C/68-89.6°F with agitation. Remove conjugate.</p>

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8.		<p>Wash 3 times for 5 minutes with 1.5 ml wash buffer by agitation. Remove wash buffer after every washing step.</p>
SUBSTRATE		
9.		<p>Pipette 700 µl dH₂O and 300 µl substrate into each incubation tray with strip.</p>
10.		<p>Incubate for 15 minutes at 20-32°C/68-89.6°F with agitation, protected from intense light. Remove substrate.</p>
STOP		
11.		<p>Pipette 2 ml dH₂O into each incubation tray with strip. Incubate 1 minute with agitation. Remove dH₂O. Repeat this step one time.</p>
12.	<p>Remove strip of the incubation tray. Dry strip between filter paper</p>	
13.	<p>Analyze results within 24 h.</p>	

8 Qualitative Interpretation

8.1 Manual Analysis

Test results can be considered valid, if:

- Functional control is visible
- Cut-off control is visible
- Colour intensity of cut-off control is weaker than colour intensity of functional control

Fix dried strip onto scoring sheet aligned with reference line. Align reference template with the strip reference line. Interpret results only in reference to cut-off control of each strip.

Each test kit contains a colour copy with all bands provable in the test.

The analysis is carried out by means of comparing the colour intensities of the bands with colour intensity of the cut-off control. The test is equivocal if the intensities do not significant differ. Is the colour more intensive the test result is positive, if the colour intensity is weaker, the test is negative.

The results can be recorded on the scoring sheet.

In case that the values of the controls do not meet the criteria, the test is invalid and has to be repeated. We recommend retesting samples that are borderline.

The following technical issues should as well be checked: expiry date of (prepared) reagents, storage conditions, pipettes, equipment, incubation conditions and washing methods.

If the samples tested show aberrant values or any kind of deviation or if the validation criteria are not met because of reasons outside the operator's responsibility, please contact the manufacturer or the supplier of the test kit.

Medical laboratories might perform an in-house quality control by using their own controls and/or internal pooled sera, as stated in national regulations.

9 Technical Data

Sample material:	serum
Sample volume:	10 µl of sample
Total incubation time:	112 minutes at 20-32°C/68-89.6°F
Storage:	at 2-8°C/35-46°F; use original vials only.
Number of determinations:	24 tests

10 Performance Data

10.1 Relative Sensitivity and Specificity

In order to determine the positive agreement (relative sensitivity), 80 sera from IIF or ELISA antibody-positive patients were tested in **AESKUBLOTS® Myositis Pro**. For determination of the negative agreement (relative specificity), 170 sera from blood donors were analyzed.

	positive agreement (relative sensitivity)	negative agreement (relative specificity),
Jo-1	100 %	98 %
Mi-2	100 %	99 %
Pm-Scl	100 %	99 %
U1-snRNP	100 %	98 %
Ku	100 %	100 %

11 Literature




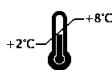

Cooley HM, Melny BJ, Gleeson R, Greco T, Kay TW (1999). Clinical and serological associations of anti-Ku antibody. *J Rheumatol.* 26:563–567.

Roux S, Seelig HP, Meyer O (1998). Significance of MI-2 autoantibodies in polymyositis and dermatomyositis. *J Rheumatol.* 25: 395–396.

Targoff IN (2000). Update on myositis-specific and myositis-associated autoantibodies. *Current Opinion in Rheumatology.* 12(6):475–481.

For further reading:

Peter JB, Shoenfeld Y (1996). *Autoantibodies*. Elsevier Sciences B.V., Amsterdam.

IVD	Diagnosi in vitro	For in vitro diagnostic use
	Pour diagnostic in vitro	Para uso diagnóstico in vitro
	In Vitro Diagnostikum	In Vitro Διαγνωστικό μέσο
	Para uso Diagnóstico in vitro	
REF	Numero d'ordine	Catalogue number
	Référence Catalogue	Numéro de catálogo
	Bestellnummer	Αριθμός παραγγελίας
	Número de catálogo	
LOT	Descrizione lotto	Lot
	Lot	Lote
	Chargen Bezeichnung	Χαρακτηρισμός παρτίδας
	Lote	
CE	Conformità europea	EC Declaration of Conformity
	Déclaration CE de Conformité	Declaración CE de Conformidad
	Europäische Konformität	Ευρωπαϊκή συμφωνία
	Déclaracão CE de Conformidade	
	24 determinazioni	24 tests
	24 tests	24 pruebas
	24 Bestimmungen	24 προσδιορισμοί
	24 Testes	
	Rispettare le istruzioni per l'uso	See instructions for use
	Voir les instructions d'utilisation	Ver las instrucciones de uso
	Gebrauchsanweisung beachten	Λάβετε υπόψη τις οδηγίες χρήσης
	Ver as instruções de uso	
	Da utilizzarsi entro	Use by
	Utilise avant le	Utilizar antes de
	Verwendbar bis	Χρήση μέχρι
	Utilizar antes de	
	Conservare a 2-8°C	Store at 2-8°C (35-46°F)
	Conserver à 2-8°C	Conservar a 2-8°C
	Lagerung bei 2-8°C	Φυλάσσεται στους 2-8°C
	Conservar entre 2-8°C	
	Prodotto da	Manufactured by
	Fabriqué par	Fabricado por
	Hergestellt von	Κατασκευάζεται από
	Fabricado por	
STRIP	Strip di nitrocellulosa rivestita	Coated nitrocellulose strip
	Strip de nitrocellulose couché	Tira de nitrocelulosa recubierta
	Nitrozellulosemembran-Streifen mit aufgebracht Antigenen	Επίστρωση λωρίδα νιτροκυτταρίνης
	Tira de nitrocellulose revestido	
WASH 20x	Tampone di lavaggio	Wash buffer
	Tampon de Lavage	Solución de lavado
	Waschpuffer	Ρυθμιστικό διάλυμα πλύσης
	Solução de lavagem	
Block-Reag	Reagente bloccante	Blocking Reagent
	réactif de blocage	Reactivo bloqueante
	Blockier-Reagenz	Αντιδραστήριο αποκλεισμού
	Bloqueio de reagente	
RCNS 10ml	Ricostituire con 10 mL	Reconstitute with 10 mL
	reconstituer avec 10 mL	reconstituir con 10 mL
	rekonstituieren mit 10 mL	Ανασύσταση με 10 mL
	reconstituir com 10 mL	
SB	Tampone campione	Sample buffer
	Tampon Echantillons	Tampón Muestras
	Probenpuffer	Ρυθμιστικό διάλυμα δειγμάτων
	Diluyente de amostra	
CONJ	Coniugato	Conjugate
	Conjugé	Conjugado
	Konjugat	Σύζευγμα
	Conjugado	
SUB	Tampone substrato	Substrate buffer
	Substrat	Tampón sustrato
	Substratpuffer	Ρυθμιστικό διάλυμα υποστρώματος
	Substrato	

