## Introduction

Angiotensin II is a peptide hormone which causes vasoconstriction, increased blood pressure, and release of aldosterone from the adrenal cortex. It occupies an important role in the Renin-Angiotensin-System (RAS). Angiotensin II mediates the effects through G-Protein-coupled receptors, the Angiotensin receptors. The occurrence of autoantibodies against AT1 receptor is associated with an increased risk of an immunologic rejection after an organ transplantation. The presence of AT1 autoantibodies correlate with the existence and course of Sclerodermia.

The CellTrend anti-Angiotensin receptor 1-Antibody EIA is designed for the determination of antibodies against the Angiotensin II receptor subtype I in serum and plasma.

## Principle of the Assay

The CellTrend anti-Angiotensin II receptor 1-Antibody-EIA is an antibody screening test. Angiotensin II Receptor has been pre-coated onto a microtiter plate. During the first incubation the anti-Angiotensin II receptor 1-Antibodies of the samples are immobilised on the plate. The autoantibodies are detected with a POD labeled anti-human IgG antibody. In the following enzymatic substrate reaction the intensity of the colour correlates with the concentration and/ or avidity of anti-Angiotensin II receptor 1-antibody

## Precautions

Store the kit at 2-8 °C.

For in vitro use only.

Do not use the reagents beyond the expiration date marked on box label.

Please read the instructions carefully before using the kit.

The assay procedure should be carried out only by qualified and well trained employees.

Lipaemic, icteric, haemolysed or microbially contaminated specimen may cause interference.

Do not mix reagents from different lots.

Some components of the kit contain human blood derivatives. No known test method can offer complete assurance that products derived from human blood will not transmit infectious agents. Therefore, all blood derivatives should be considered potentially infectious. It is recommended that these reagents and human specimens be handled using established good laboratory working practices.

Some components of this kit contain ProClin 300. Avoid contact with skin and mucous membranes when handling reagents, which contain preservatives (see materials provided). Wash thoroughly with water in case of contact and possibly look up a doctor.

The stop solution contains 0.5 M sulphuric acid. Wash thoroughly with water in case of contact with skin. In case of contact with eyes rinse with much water and look up a doctor.

Do not allow the wells to become dry once the assay has begun.



Symbols / Symbole / Symbôles / Simbolos / Simbolos / Simboli / Συμβολα

| | |
|---|---|
| REF | Cat.-No.: / Kat.-Nr.: / No.- Cat.: / Cat.-No.: / N.º Cat.: / N.–Cat.: / Αριθμός-Κατ.: |
| LOT | Lot-No.: / Chargen-Bez.: / No. Lot: / Lot-No.: / Lote N.º: / Lotto n.: / Αριθμός -Παραγωγή: |
| | Use by: / Verwendbar bis: / Utiliser à: / Usado por: / Usar até: / Da utilizzare entro: / Χρησιμοποιείται από: |
| Σ | No. of Tests: / Kitgröße: / Nb. de Tests: / No. de Determ.: / N.º de Testes: / Quantità dei tests: / Αριθμός εξετάσεων: |
| IVD | In Vitro Diagnostic Medical Device. / In-vitro-Diagnostikum. / Appareil Médical pour Diagnostics In Vitro. / Dispositivo Médico para Diagnóstico In Vitro. / Equipamento Médico de Diagnóstico In Vitro. / Dispositivo Medico Diagnostico In vitro. / Ιατρική συσκευή για In-Vitro .ιάγνωση. |
| | Read instructions before use. / Arbeitsanleitung lesen. / Lire la fiche technique avant emploi. / Lea las instrucciones antes de usar. / Ler as instruções antes de usar. / Leggere le istruzioni prima dell'uso. / .ιαβάστε τις οδηγίες πριν την χρήση. |
| | Store at: / Lagern bei: / Stocker à: / Almacene a: / Armazenar a: / Conservare a: / Αποθήκευση στους: |
| | Manufacturer: / Hersteller: / Fabricant: / Productor: / Fabricante: / Fabbricante: / Παραγωγός: |

**References**

1. Reinsmoen NL, Lai C-H, Heidecke H, Haas M, Cao K, Ong G, Naim M, Wang Q, Mirocha J, Kahwaji J, Vo AA, Jordan SC, and Dragun D:
*Anti-Angiotensin Type 1 Receptor Antibodies Associated With Antibody Mediated Rejection in Donor HLA Antibody Negative Patients.*
Transplantation 2010;90: 1473–1477

2. Kelsch R, Everding AS, Kuwertz-Bröking E, Brand E, Spriewald BM, Sibrowski W, Konrad M, Dragun D:
*Accelerated Kidney Transplant Rejection and Hypertensive Encephalopathy in a Pediatric Patient Associated With Antibodies Against Angiotensin Type 1 Receptor and HLA Class II.*
Transplantation 2011 Nov 27;92(10):e57-9


**INSTRUCTIONS FOR USE**

# EIA for Quantitative Determination of anti-Angiotensin II Receptor 1 (AT1)-Antibodies

**REF 12000**

CellTrend

Σ 96 2°C 8°C EU: CE IVD

For other countries: Research Use Only


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## Assay procedure

It is recommended that all samples and standards be assayed in duplicate.

1. Prepare all reagents and samples as directed in the previous section.
2. Pipette 100 µl of diluted samples, standards, controls or diluent DIL | SPE (as blank) into the wells.
3. Seal wells with adhesive strip and incubate for 2 hours at 2-8°C temperature.
4. Aspirate fluid from wells and wash three times with 300 µl wash buffer. After the last wash, invert the plate and tap on a clean paper towel.
5. Dispense 100 µl of diluted HRP conjugate into each well
6. Seal wells with adhesive strip and incubate for 1 hour (with shaking) at room temperature.
7. Repeat the wash as in step 4.
8. Dispense 100 µl of TMB substrate SUBS | TMB solution into each well.
9. Incubate for 20 minutes at room temperature in the dark.
10. Add 100 µl of stop solution SOLN | STOP to each well.
11. Determine the absorbance within 30 minutes at 450 nm. A reference wavelength of 620 nm/690 nm is recommended.

## Calculation of results

Create a standard curve using computer software capable of generating a curve fit (four parameter fit; x-axis: linear, anti-ATR1-Ab standard points (2.5 U/ml, 5 U/ml, 10 U/ml, 20 U/ml, 40 U/ml); y-axis: linear, absorbance). The sample concentrations can be calculated from the standard curve.

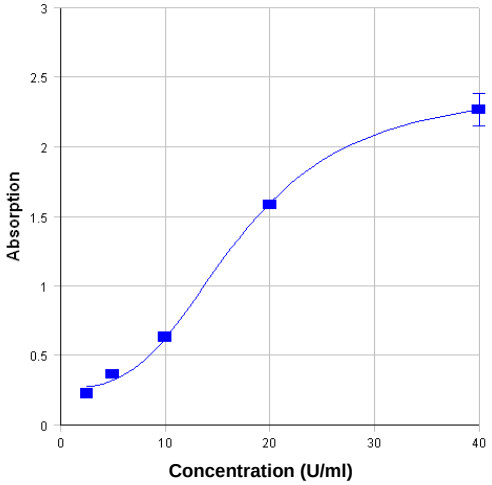
A run is considered valid if the positive control is in the expected range (see label) and the negative control is less than the cut off (10 U/ml).

Samples >17 U/ml are positive, samples 10-17 U/ml are at risk. Samples <10 U/ml are negative. Samples over the standard curve can be assayed again using a higher dilution factor (e.g. 1:500). In this case the concentration read from the standard curve must be multiplied by the additional dilution factor (e.g. 5 for 1:500 dilution).

Therapy should not be decided based on results alone. The results should be correlated to other clinical observations and diagnostic tests. Furthermore, we recommend that each laboratory establish its own range for the population tested.



## Typical data




This standard curve is provided for demonstration only.
A standard curve must be run with each assay.

## Precision

- Intra-assay precision (CV)
(n=10)
Sample 1 (21.4 U/ml): 3.9%

- Inter-assay precision (CV)
(n=20)
Sample 1 (22.9 U/ml): 5.1%

## Materials provided:

| | | | | |
|---|---|---|---|---|
| MTP | | | Microplate strips, Angiotensin II-Receptor typ 1 coated | 12 x 8 |
| BUF | WASH | 10x | Wash buffer, 10fold conc. ● | 50 ml |
| DIL | SPE | | Diluent sample, ready to use ● | 50 ml |
| DIL | Conj | | Diluent conjugate, ready to use ● | 14 ml |
| CAL | 1-5 | | Standards, ready to use [2.5 - 5 - 10 - 20 - 40 U/ml] ● | 1 ml |
| CONTROL | + | | Positive control, ready to use ● | 1 ml |
| CONTROL | – | | Negative control, ready to use ● | 1 ml |
| CONJ | ENZ | 100x | anti-human-IgG, HRP conjugate, 100fold conc. ● | 0.2 ml |
| SUBS | TMB | | TMB substrate, ready to use | 12 ml |
| SOLN | STOP | | Stop solution, ready to use (0.5 M sulphuric acid) | 12 ml |

●: contains ProClin 300

## Assay procedure summary:

A. Preparation

1. Bring all reagents to room temperature
2. Dilute wash buffer 1:10
3. Dilute samples with diluent sample 1:100
4. Dilute freshly HRP conjugate 1:100 with diluent conjugate

B. Performance

1. Pipette 100 µl of samples, standards, controls into the wells
2. Incubate for 2 hours at 2-8°C temperature
3. Wash three times with 300 µl of wash buffer
4. Dispense 100 µl of HRP conjugate solution
5. Incubate for 1 hour (with shaking) at room temperature
6. Wash three times with 300 µl of wash buffer
7. Dispense 100 µl of TMB substrate solution
8. Incubate for 20 minutes at room temperature in the dark
9. Add 100 µl of stop solution
10. Measure absorption at 450 nm



## Other supplies required

Deionized or distilled water
Graduated cylinder
Micropipettes, multipipette
Microplate shaker
Microplate reader
Refrigerator (2-8 °C)

## Sample Collection and Storage

Collect serum or plasma according to your standard procedure.

Store at room temperature up to 48 hrs.

Store at 2-8 °C up to 4 days

Long term storage up to 12 month at - 20 °C.
Avoid repeated freeze-thaw cycles.

## Preparation of reagents and samples

- Bring all reagents to room temperature before use. If crystals have formed, mix gently until the crystals have completely dissolved.

- The microplate strips MTP are ready to use. Remove excess strips (breakable) from the frame, reseal in the bag with the desiccant and store at 2-8 °C.

- Dilute the wash buffer BUF | WASH | 10x with deionized or distilled water **1:10** (e. g. 50 ml + 450 ml water). The diluted solution is stable for 30 days at 2-8 °C.

- Dilute the HRP conjugate CONJ | ENZ 100x with diluent DIL | Conj **1:100** (e. g. 50 µl + 4950 µl diluent DIL | Conj). The required amount of conjugate solution should be prepared freshly.

- Dilute the human serum or plasma samples with diluent DIL | SPE **1:100** (e. g. 5 µl + 495 µl diluent).

- Standards CAL | 1-5, positive control CONTROL | +, negative control CONTROL | -, the diluent sample DIL | SPE , the diluent conjugate DIL | Conj , the substrate SUBS | TMB , and the stop solution SOLN | STOP are ready are ready to use.