



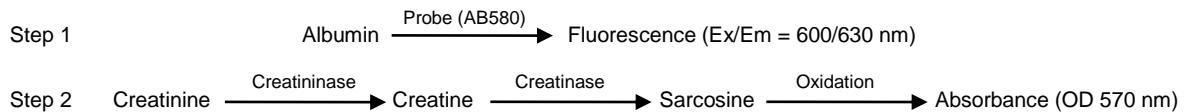
Albumin-to-Creatinine Ratio (ACR) Assay Kit

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(Catalog # K551-100; 100 assays; Store at -20°C)

I. Introduction:

Albumin-to-Creatinine Ratio (ACR) is one of the two markers used to determine chronic kidney disease (CKD). ACR is recommended to be measured on regular basis on people living with Type I and Type II diabetes. ACR is defined as the ratio between albumin (reported in mg/dl) and creatinine (reported in g/dl). This ratio estimates the amount of albumin excreted in urine during a 24 hr period. Albuminuria is diagnosed when ACR is greater than 30 mg albumin/g creatinine. BioVision's ACR Assay Kit provides a simple, sensitive, and high-throughput adaptable assay that detects albumin (detection range: 0.02- 2.5 mg/ml), creatinine (detection range: 0.002 -0.5 mg/ml) and Albumin-to-creatinine ratio. The ACR ratio is determined in two steps: First, albumin is determined by using a probe (AB580) that specifically recognizes albumin (Ex/Em = 600/630 nm). Second, creatinine is converted to sarcosine via enzymatic reactions. Sarcosine is specifically oxidized generating a product that reacts with a probe producing a chromophore that can be detected at 570 nm.



II. Application:

- Estimation of albumin in biological samples
- Estimation of creatinine in biological samples
- Determination of ACR in mammalian urine samples

III. Sample Type:

- Albumin: urine, saliva, etc.
- Creatinine: urine, serum, etc.
- ACR: urine

IV. Kit Contents:

Components	K551-100	Cap Code	Part Number
Creatinine Assay Buffer	25 ml	WM	K551-100-1
Albumin Assay Buffer	7 ml	NM	K551-100-2
Albumin Diluent	7 ml	Blue	K551-100-3
Albumin Probe (AB580)	0.4 ml	Brown	K551-100-4
Creatinine Probe	0.2 ml	Red	K551-100-5
Creatininase	1 vial	Blue	K551-100-6
Creatininase	1 vial	Purple	K551-100-7
Creatinine Enzyme Mix	1 vial	Green	K551-100-8
BSA Standard (2 mg/ml)	1 ml	White	K551-100-9
Creatinine Standard (10 µmol)	1 vial	Yellow	K551-100-10

V. User Supplied Reagents and Equipment:

- 96-well white plate with flat bottom
- 96-well clear plate with flat bottom
- 10 kDa Spin Column (Cat. # 1997)
- Multi-well spectrophotometer

VI. Storage Conditions and Reagent Preparation:

Store kit at -20°C, protected from light. Briefly spin small vials prior to opening. Read entire protocol before performing the assay.

- **Creatinine Assay Buffer, Albumin Assay Buffer, and Albumin Diluent:** Store at -20°C. Bring to room temperature (RT) before use.
- **Albumin Probe (AB580) and Creatinine Probe:** Light sensitive. Store at -20°C. Bring to RT before use.
- **Creatinase, Creatininase, and Creatinine Enzyme Mix:** Reconstitute with 220 µl of Creatinine Assay Buffer. Aliquot and store at -20°C. Freeze/thaw should be limited to one time. Keep on ice during use.
- **BSA Standard (2 mg/ml):** Store at RT.
- **Creatinine (10 µmol):** Reconstitute with 115 µl of dH₂O to generate 10 µg/µl Creatinine Standard. Dissolve completely. Store at -20°C. Use within 2 months.

VII. Albumin Assay Protocol:

1. Sample Preparation: Centrifuge urine sample at 4000 x g, 4°C for 3 min., if precipitation is observed. Collect supernatant. Add 1-50 µl into desired well(s) in a 96-well white plate. Adjust the volume to 50 µl/well with Albumin Diluent.

Notes:

- For saliva samples, centrifuge sample at 10,000 x g, 4°C for 10 min., if precipitation is observed. Collect supernatant. Add 1-50 µl into desired well(s) in a 96-well white plate. Adjust the volume to 50 µl/well with Albumin Diluent.

