Datasheet for ABIN1000257

Calcium Assay Kit

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Overview

Quantity:	500 tests
Target:	Calcium
Application:	Biochemical Assay (BCA)

Product Details

Sample Type:	Serum, Urine, Saliva
Specificity:	0.08 mg/dL (20 µM)
Characteristics:	Sensitive and accurate. Use as little as 5 µL samples. Linear detection range 0.08 mg/dL (20µM) to 20 mg/dL (5mM) Ca 2+ in 96-well plate assay. Simple and high-throughput. The procedure involves addition of a single working reagent and incubation for 3 min. Can be readily automated as a high-throughput assay for thousands of samples per day. Improved reagent stability and versatility. The optimized formulation has greatly enhanced reagent and signal stability. Cuvet or 96-well plate assay. Low interference in biological samples. No pretreatments are needed. Assays can be directly performed on raw biological samples i.e., in the presence of lipid, protein and minerals such as magnesium, iron and zinc.
Components:	Reagent A: 50 mL. Reagent B: 50 mL. Calcium standard: 1 mL 20 mg/dL Ca 2+.
Material not included:	Pipeting devices and accessories (e.g. 5 µL). Clear bottom 96-well plates (e.g. Corning Costar) and plate reader. Cuvets and Spectrophotometer for measuring OD612nm.

Target Details

Target:	Calcium
Target Type:	Element
Background:	Quantitative determination of calcium ion Ca2+ by colorimetric (612nm) method. Procedure: 3 min. CALCIUM is measured to monitor diseases of the bone or calcium regulation disorders. Increased calcium levels in serum are reported in hyperparathyroidism, metastatic bone lesions and hypervitaminosis, while decreased levels are observed in hypoparathyroidism, nephrosis, rickets, steatorrhea, nephritis and calcium-losing syndromes. Urinary calcium levels aid the clinician in understanding how the kidneys handle calcium in certain diseases of the parathyroid gland. Urinary calcium levels are also essential in the medical evaluation of kidney stones. Simple, direct and automation-ready procedures for measuring calcium concentration in biological samples are becoming popular in Research and Drug Discovery. This calcium assay kit is designed to measure calcium directly in biological samples without any pretreatment. A phenolsulphonephthalein dye in the kit forms a very stable blue colored complex specifically with free calcium. The intensity of the color, measured at 612 nm, is directly proportional to the calcium concentration in the sample. The optimized formulation minimizes any interference by substances such as magnesium, lipid, protein and bilirubin.

Application Details

Application Notes:	Direct Assays: Ca 2+ in serum, urine, saliva etc. Drug Discovery/Pharmacology: effects of drugs on calcium metabolism. Food and Beverages: calcium determination. Environment: calcium determination in water and soil.
Comment:	EDTA and other Ca 2+ chelators interfere with this assay. This assay can not be applied to plasma samples obtained with EDTA.
Protocol:	Procedure using 96-well plate: 1. Transfer 5 µL diluted standards and samples into wells of a clear bottom 96-well plate. Store diluted standards at 4°C for future use. 2. Add 200 µL working reagent and tap lightly to mix. 3. Incubate 3 min at room temperature and read optical density at 570- 650nm (peak absorbance at 612nm). Procedure using cuvette:

Application Details

	1. Set up test tubes for diluted standards and Samples. Transfer 15 µL diluted Standards and samples to appropriately labeled tubes. 2. Add 1000 µL working reagent and vortex to mix. Incubate 3 min. Transfer to cuvet and read optical density at 612nm.
Reagent Preparation:	Prepare enough working reagent by combining equal volumes of Reagent A and Reagent B. Equilibrate to room temperature before use.
Calculation of Results:	Subtract blank OD (water, #8) from the standard OD values and plot the OD against Ca 2+ standard concentrations. Determine the slope using linear regression fitting. Conversions: 1 mg/dL Ca 2+ equals 250 µM, 0.001% or 10 ppm.
Restrictions:	For Research Use only

Handling

Storage:	4 °C

Publications

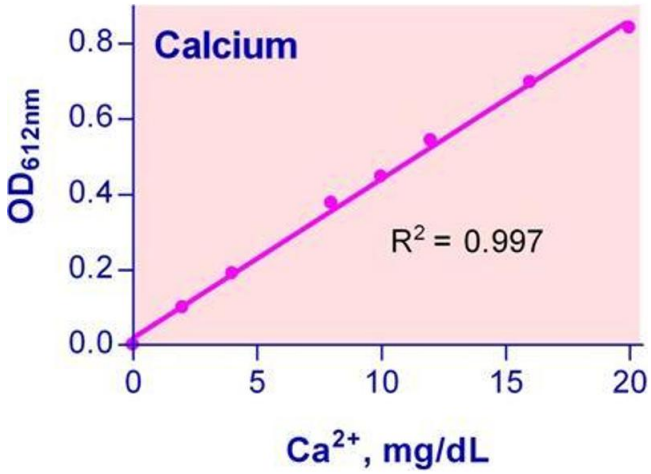
Product cited in:	Cucchiarini, Ekici, Schetting, Kohn, Madry: "Metabolic activities and chondrogenic differentiation of human mesenchymal stem cells following recombinant adeno-associated virus-mediated gene transfer and overexpression of fibroblast growth factor 2." in: **Tissue engineering. Part A**, Vol. 17, Issue 15-16, pp. 1921-33, (2011) (PubMed). Olsen, Sarras, Intine: "Limb regeneration is impaired in an adult zebrafish model of diabetes mellitus." in: **Wound repair and regeneration : official publication of the Wound Healing Society [and] the European Tissue Repair Society**, Vol. 18, Issue 5, pp. 532-42, (2010) (PubMed). Thanissery, McReynolds, Conner, Macklin, Curtis, Fasina: "Evaluation of the efficacy of yeast extract in reducing intestinal Clostridium perfringens levels in broiler chickens." in: **Poultry science**, Vol. 89, Issue 11, pp. 2380-8, (2010) (PubMed). Lee, Jeong, Han, Lee, Phee, Hahn, Ronald: "The Xanthomonas oryzae pv. oryzae PhoPQ two-component system is required for AvrXA21 activity, hrpG expression, and virulence." in: **Journal of bacteriology**, Vol. 190, Issue 6, pp. 2183-97, (2008) (PubMed). Nakano: "Novel function of DUSP14/MKP6 (dual specific phosphatase 14) as a nonspecific

Publications

regulatory molecule for delayed-type hypersensitivity." in: **The British journal of dermatology**, Vol. 156, Issue 5, pp. 848-60, (2007) (PubMed).

There are more publications referencing this product on: Product page

Images



Biochemical Assay

Image 1.