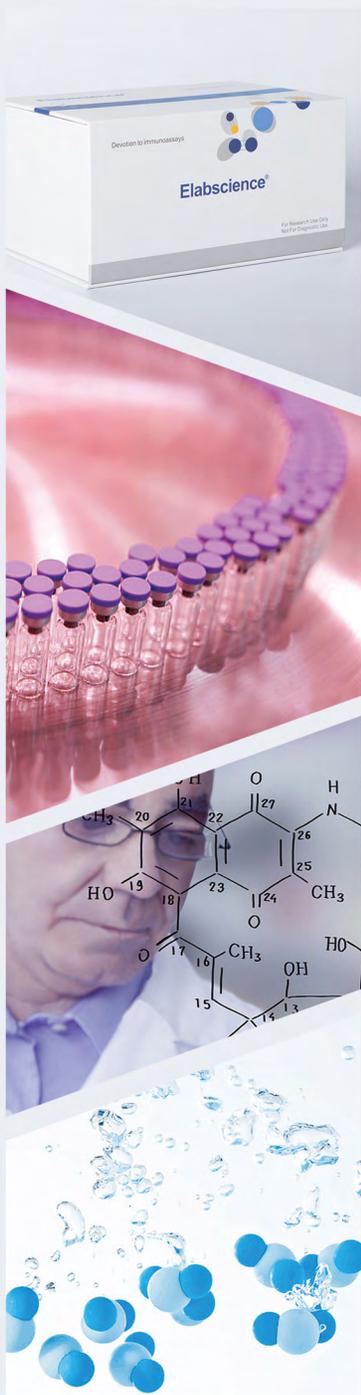


Elabscience Biotechnology Inc.

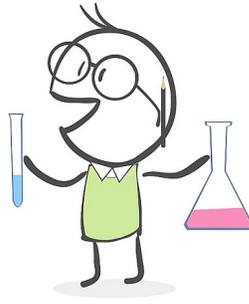
Biochemical kit



Elabscience®

www.elabscience.com





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Company Introduction

Elabscience has been committed to providing high-quality detecting products and services for the research of life science, including ELISA Kits, Biochemical Kits, Antibodies, Proteins, Cell Line, Food Safety Kits, Animal Diseases Kits and other reagents.

With products certified by ISO9001, Elabscience has grown to be a professional and efficient supplier of research reagent and a supporter for technical services, and widely recognized in the market.



Elabscience has a professional and experienced R&D team composed of many experts and experienced researchers specializing in various fields of life science. Biochemistry is the basic subject of life science. Research specialists study the chemical composition and its changing rules in organisms to help us understand the mystery of life.

Elabscience establish the platform for the development of biochemical detection products and the customized service platform. Elabscience provides highly specific, sensitive and accurate biochemical assay kits to meet your research demand, including series of coenzymes, glutathione, neurotransmitters, oxidation and antioxidation, vitamins, amino acid metabolism and glycometabolism etc.

➤ The Abstract of Biochemical Kit

 Biochemistry, sometimes called biological chemistry, is the study of life phenomena at the molecular level basing on the principles and methods of chemistry. It mainly focuses on three fields: the structure and function of biomolecules, metabolism and regulation of chemical substances, and molecular basis and regulation property of genetic information transmission.



Biochemical assays always contain the following steps: literature research to select detection methods, reagent preparation, pre-experiments for feasibility test, and optimization of the analytical systems and processes. For researchers' lack of experimental experience, repetitive optimization of experimental conditions not only wastes of time, specimens and reagents, but also a low possibility of obtaining reliable data in time. In contrast, biochemical kits can provide optimal reagents/standards for biochemical testing and detailed protocols and tips, providing researchers with convenient, fast and reliable solutions.

Compared with the ELISA kits commonly used in laboratories, biochemical kits play an irreplaceable role and can be used complementary with ELISA kits.

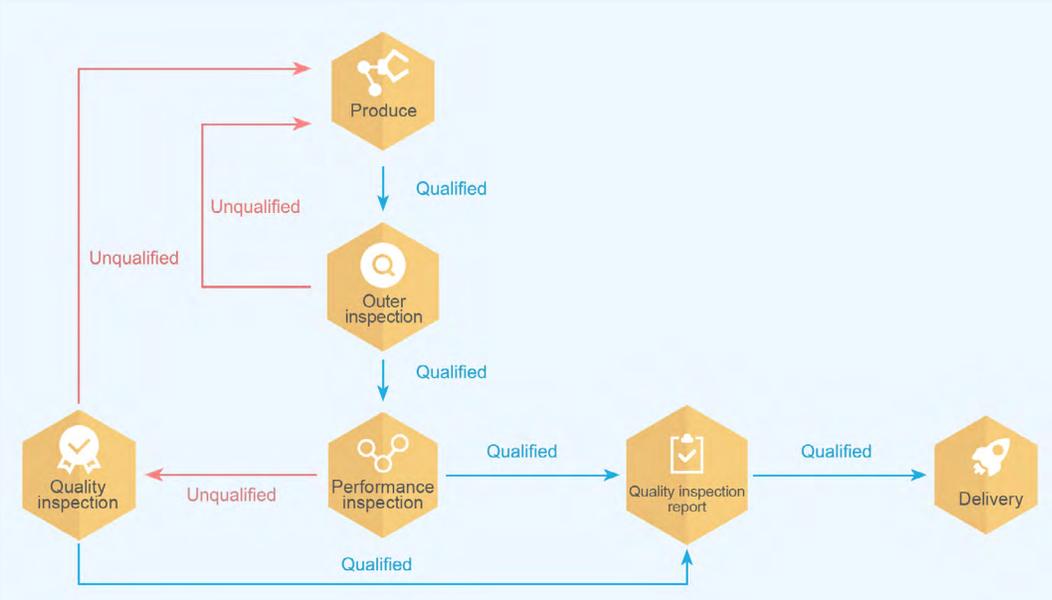
	Biochemical Kits	ELISA Kits
Principles	Chemical reaction	Specific binding between antibody and antigen
Detection Purpose	Enzyme activity (enzyme), Concentration (saccharide, ion, protein, etc.)	Concentration (protein, antibody, etc.)
Equipment	Microplate reader, Spectrophotometer, Biochemical analyzer	Microplate reader
Detection Methods	Colorimetry, Fluorometry, Immunoturbidimetry	Colorimetry
Advantages	Wide linear detection range, Ease-of-use, Diverse sample types	High sensitivity and specificity

Why Choose Us ?

ISO Certificate



Inspection Flow Chart of Biochemical Kit



Product Advantages



High precision

C.V < 5%



High accuracy

recovery rate is $100 \pm 5\%$.



Good stability

the kits can be stable for up to 6 months at 2-8°C.



Simple and fast operation

50 samples can be detected within 1 hour.



High sensitivity and wide linear range

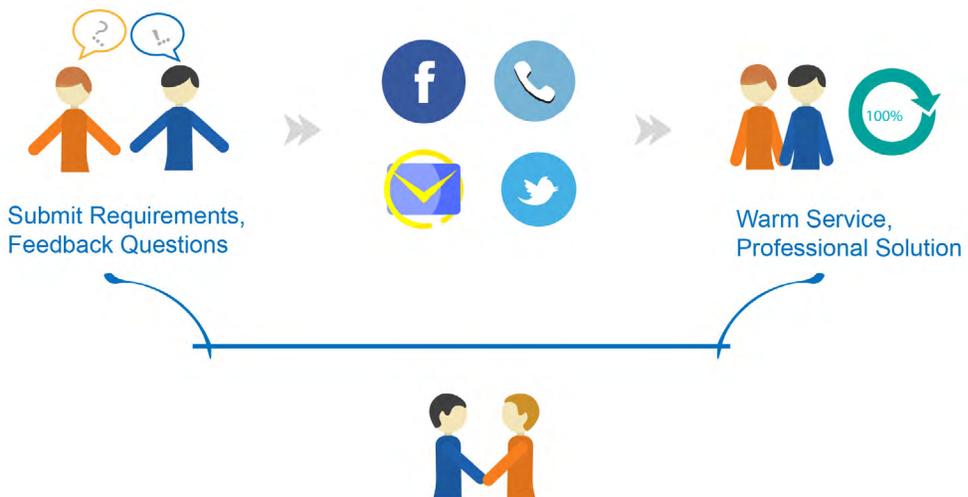
less sample treatment.



Strong anti-interference, variety of detection samples, high performance-price ratio.

Service Advantages

On the basis of routine services, a rapid response mechanism is established to provide you is 24-hour service, including professional and reliable sample processing methods and troubleshootings by our professional R&D and technical teams .



Quick Response in 24h, Efficient Solution in 48h

Cat. No.	Detection Type	Product Name	Size	Instrument
E-BC-K013	Content detection	Non-esterified Free Fatty Acids (NEFA) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K014	Content detection	Non-esterified Free Fatty Acids (NEFA) Colorimetric Assay Kit	96T	Microplate reader, Biochemistry analyzer
E-BC-K016	Content detection	Uric acid (UA) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K018	Content detection	D-Xylose Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K025	Content detection	Malondialdehyde (MDA) Colorimetric Assay Kit (TBA method)	50/100 Assays	Spectrophotometry
E-BC-K027	Content detection	Malondialdehyde (MDA) Colorimetric Assay Kit (Plant sample)	48/96T	Microplate reader
E-BC-K028	Content detection	Malondialdehyde (MDA) Colorimetric Assay Kit (Cell samples)	400T	Microplate reader
E-BC-K030	Content detection	Reduced Glutathione (GSH) Colorimetric Assay Kit	48/96T	Microplate reader
E-BC-K033	Content detection	Vitamin E Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K034	Content detection	Vitamin C Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K035	Content detection	Nitric Oxide (NO) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K036	Content detection	Nitric Oxide (NO) Colorimetric Assay Kit	48/96T	Microplate reader
E-BC-K042	Content detection	Hydroxyl Free Radical (-OH) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K043	Content detection	Lactic Acid (LA) Colorimetric Assay Kit (Whole blood samples)	50/100 Assays	Spectrophotometry
E-BC-K044	Content detection	Lactic Acid (LA) Colorimetric Assay Kit (Serum/Tissue samples)	50/100 Assays	Spectrophotometry
E-BC-K051	Content detection	Reduced glutathione (GSH) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K055	Content detection	Total Amino Acid (T-AA) Colorimetric Assay Kit	80 Assays	Spectrophotometry
E-BC-K057	Content detection	Albumin (ALB) Colorimetric Assay Kit (Bromocresol green method)	50/100 Assays	Spectrophotometry
E-BC-K058	Content detection	Albumin (ALB) Colorimetric Assay Kit (Bromocresol green method)	48/96T	Microplate reader
E-BC-K059	Content detection	Copper blue protein (CP) Colorimetric Assay Kit (Serum samples, except chicken serum)	50 Assays	Spectrophotometry
E-BC-K061	Content detection	Hydroxyproline (Hyp) Colorimetric Assay Kit (Alkali hydrolysis method)	50 Assays	Spectrophotometry
E-BC-K062	Content detection	Hydroxyproline (Hyp) Colorimetric Assay Kit (Acid hydrolysis method)	50 Assays	Spectrophotometry
E-BC-K068	Content detection	Sialic Acid (SA) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K070	Content detection	Nitrite Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K071	Content detection	Total Iron Binding Capacity Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K073	Content detection	Glycogen Colorimetric Assay Kit (Liver/Muscle samples)	50/100 Assays	Spectrophotometry
E-BC-K075	Content detection	Total Protein (TP) Colorimetric Assay Kit (With standard, BCA method)	50/100 Assays	Spectrophotometry
E-BC-K081	Content detection	Direct bilirubin (D-BIL) Colorimetric Assay Kit (chemical oxidation)	96T	Microplate reader
E-BC-K089	Content detection	Glycosylated Hemoglobin (GHb/HbA1c) Colorimetric Assay Kit	15 Assays	Spectrophotometry
E-BC-K097	Content detection	Toal Glutathione (T-GSH)/ Oxidized Glutathione (GSSG) Colorimetric Assay Kit	48/96T	Microplate reader
E-BC-K098	Content detection	Toal Glutathione (T-GSH)/ Oxidized Glutathione (GSSG) Colorimetric Assay Kit (Spec)	50 Assays	Spectrophotometry

Cat. No.	Detection Type	Product Name	Size	Instrument
E-BC-K100	Content detection	Total Mercapto (-SH) Colorimetric Assay Kit	48T	Microplate reader
E-BC-K101	Content detection	Typed Mercapto (-SH) Colorimetric Assay Kit	24T	Microplate reader
E-BC-K102	Content detection	Hydrogen Peroxide (H ₂ O ₂) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K103	Content detection	Calcium (Ca) Colorimetric Assay Kit (With standard)	96T	Microplate reader
E-BC-K109	Content detection	Total Cholesterol (TC) Colorimetric Assay Kit (Single reagent, COD-PAP method)	100 Assays	Spectrophotometry
E-BC-K115	Content detection	Free Hemoglobin (Fhb) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K117	Content detection	Protein Carbonyl Colorimetric Assay Kit (Tissue and serum samples)	50/100 Assays	Spectrophotometry
E-BC-K118	Content detection	Glutamic Acid Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K130	Content detection	Pyruvic Acid Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K134	Content detection	Fructose Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K136	Content detection	Total Antioxidant Capacity (T-AOC) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K137	Content detection	Zinc (Zn) Colorimetric Assay Kit	R1:40 mL×1, R2:10 mL×1	Biochemistry analyzer
E-BC-K138	Content detection	Reactive Oxygen Species (ROS) Colorimetric Assay Kit	100T-500T	Fluorescence Microplate reader
E-BC-K139	Content detection	Iron Colorimetric Assay Kit (Serum samples)	50/100 Assays	Spectrophotometry
E-BC-K140	Content detection	Iron Colorimetric Assay Kit (Tissue samples)	50/100 Assays	Spectrophotometry
E-BC-K142	Content detection	Malondialdehyde (MDA) Colorimetric Assay Kit	100 Assays	Spectrophotometry, Microplate reader
E-BC-K143	Content detection	Homocysteine (Hcy) Colorimetric Assay Kit	100 Assays	Biochemistry analyzer, Spectrophotometry
E-BC-K145	Content detection	Blood Ammonia Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K157	Content detection	ATP Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K161	Content detection	Sucrose Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K162	Content detection	Magnesium (Mg) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K165	Content detection	Total Protein (TP) Quantitative Colorimetric Assay Kit (With standard, Biuret method)	50/100 Assays	Spectrophotometry
E-BC-K168	Content detection	Total Protein (TP) Colorimetric Assay Kit (With standard, Coomassie brilliant blue method)	50/100 Assays	Spectrophotometry
E-BC-K169	Content detection	Endogenous Carbon Monoxide (CO) Colorimetric Assay Kit (Serum and plasma)	100 Assays	Spectrophotometry
E-BC-K170	Content detection	Methaemoglobin (MetHb) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K171	Content detection	Total Carbonyl Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K176	Content detection	Lipid Peroxide (LPO) Colorimetric Assay Kit	20/50T	Microplate reader
E-BC-K177	Content detection	Proline (Pro) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K179	Content detection	Total Cholesterol (TC) Colorimetric Assay Kit (Single reagent, COD-PAP method)	48/96T	Microplate reader
E-BC-K181	Content detection	Total Bile Acid (TBA) Colorimetric Assay Kit	R1: 40 mL×2, R2: 10 mL×2	Spectrophotometry, Biochemistry analyzer
E-BC-K183	Content detection	Urea (BUN) Colorimetric Assay Kit (Urease method)	100 Assays	Spectrophotometry

Cat. No.	Detection Type	Product Name	Size	Instrument
E-BC-K186	Content detection	Creatinine (Cr) Colorimetric Assay Kit (Sarcosine oxidase)	96T	Microplate reader
E-BC-K189	Content detection	Chlorine Colorimetric Assay Kit (With standard)	96T	Microplate reader
E-BC-K205	Content detection	Low-density Lipoprotein Cholesterol (LDL-C) Colorimetric Assay Kit (Double reagents)	96T	Microplate reader, Biochemistry analyzer
E-BC-K206	Content detection	Low-density Lipoprotein Cholesterol (LDL-C) Colorimetric Assay Kit (Double reagents)	100 Assays	Spectrophotometry
E-BC-K207	Content detection	Sodium (Na) Colorimetric Assay Kit (with standard)	R1: 15 mL×2, R2: 15 mL×1	Spectrophotometry
E-BC-K219	Content detection	Total antioxidant capacity (T-AOC) Colorimetric Assay Kit (ABTS method)	96T	Microplate reader
E-BC-K221	Content detection	High-density Lipoprotein Cholesterol (HDL-C) Colorimetric Assay Kit (Double reagents)	96T	Microplate reader, Biochemistry analyzer
E-BC-K222	Content detection	High-density Lipoprotein Cholesterol (HDL-C) Colorimetric Assay Kit (Double reagents)	100 Assays	Spectrophotometry
E-BC-K225	Content detection	Total Antioxidant Capacity Colorimetric (T-AOC) Assay Kit (FRAP method)	48/96T	Microplate reader
E-BC-K234	Content detection	Glucose (Glu) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K238	Content detection	Triglyceride (TG) Colorimetric Assay Kit (Single reagent, GPO-PAP Method)	96T	Microplate reader, Biochemistry analyzer
E-BC-K247	Content detection	Blood Ethanol Colorimetric Assay Kit	20 mL/40 mL	Biochemistry analyzer
E-BC-K261	Content detection	Triglyceride (TG) Colorimetric Assay Kit (Single reagent, GPO-PAP method)	100 Assays	Spectrophotometry
E-BC-K265	Content detection	Total Mercapto (-SH) Colorimetric Assay Kit	100 Assays	Spectrophotometry, Microplate reader
E-BC-K279	Content detection	Potassium (K) Colorimetric Assay Kit (With standard)	96T	Microplate reader
E-BC-K284	Content detection	Plant Flavonoids Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K318	Content detection	Total Protein (TP) Colorimetric Assay Kit (With standard, BCA method)	48/96T	Microplate reader
E-BC-K328	Content detection	Creatinine (Cr) Colorimetric Assay Kit (Picric acid method)	50/100 Assays	Spectrophotometry
E-BC-K329	Content detection	Urea (BUN) Colorimetric Assay Kit (Diacyl oxime colorimetry)	50/100 Assays	Spectrophotometry
E-BC-K351	Content detection	Citrid Acid (CA) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K352	Content detection	Cysteine (Cys) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K354	Content detection	Total Phenols Colorimetric Assay Kit (Plant samples)	100/200 Assays	Spectrophotometry
E-BC-K355	Content detection	H ₂ S Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K019	Activity detection	Total Superoxide Dismutase (T-SOD) Colorimetric Assay Kit (Hydroxylamine method)	50/100 Assays	Spectrophotometry
E-BC-K020	Activity detection	Superoxide Dismutase (T-SOD) Colorimetric Assay Kit (WST-1 method)	48/96T	Microplate reader
E-BC-K022	Activity detection	Superoxide Dismutase (SOD) Typed Colorimetric Assay Kit (Hydroxylamine method)	50/100 Assays	Spectrophotometry
E-BC-K024	Activity detection	Xanthine Oxidase (XOD) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K029	Activity detection	Glutathione-S-transferase (GSH-ST) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K031	Activity detection	Catalase (CAT) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K039	Activity detection	Adenosinetriphosphatase (ATPase) Colorimetric Assay Kit (Cell membranes, mitochondria, microsomes samples)	50/100 Assays	Spectrophotometry

Cat. No.	Detection Type	Product Name	Size	Instrument
E-BC-K041	Activity detection	Maltase Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K045	Activity detection	Lactate dehydrogenase (LDH) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K046	Activity detection	Lactate dehydrogenase (LDH) Colorimetric Assay Kit	96T	Microplate reader
E-BC-K047	Activity detection	LDH isoenzymes (LDH1) Colorimetric Assay Kit (Inhibition method)	R1:40 mL×1, R2:10 mL×1	Spectrophotometry, Biochemistry analyzer
E-BC-K048	Activity detection	Malic Dehydrogenase (MDH) Colorimetric Assay Kit (Serum samples)	50 Assays	Spectrophotometry
E-BC-K049	Activity detection	Malic Dehydrogenase (MDH) Colorimetric Assay Kit (Tissue samples)	50 Assays	Spectrophotometry
E-BC-K050	Activity detection	Succinate Dehydrogenase (SDH) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K052	Activity detection	Cholinesterase (CHE) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K053	Activity detection	Acetylcholinesterase (A-CHE) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K056	Activity detection	Glucose-6-phosphate dehydrogenase (G-6-PD) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K064	Activity detection	β -N-acetyl-glucosaminidase (NAG) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K065	Activity detection	Creatine kinase (CK) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K067	Activity detection	Monoamine Oxidase (MAO) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K072	Activity detection	5' -Nucleotidase (5'-NT) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K074	Activity detection	Myeloperoxidase (MPO) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K078	Activity detection	Adenosine Deaminase (ADA) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K083	Activity detection	α -Ketoglutarate Dehydrogenase (α -KGDH) Colorimetric Assay Kit	100 Assays	Microplate reader, Spectrophotometry
E-BC-K087	Activity detection	Lipase (LPS) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K091	Activity detection	Alkaline Phosphatase (ALP) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K092	Activity detection	Alkaline Phosphatase (ALP) Colorimetric Assay Kit	48/96T	Microplate reader
E-BC-K094	Activity detection	Acid Phosphatase (ACP) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K096	Activity detection	Glutathione Peroxidase (GSH-PX) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K099	Activity detection	Glutathione Reductase (GR) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K106	Activity detection	Catalase (CAT) Colorimetric Assay Kit	100 Assays	Spectrophotometry, Microplate reader
E-BC-K107	Activity detection	Calcineurin (CaN) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K108	Activity detection	ATPase Colorimetric Assay Kit (Red blood cells)	100 Assays	Spectrophotometry
E-BC-K112	Activity detection	Ca ²⁺ -ATPase Colorimetric Assay Kit (Red blood cells)	50/100 Assays	Spectrophotometry
E-BC-K119	Activity detection	Pyruvate Kinase (PK) Colorimetric Assay Kit (Tissue and serum samples)	50 Assays	Spectrophotometry
E-BC-K121	Activity detection	Hexokinase (HK) Colorimetric Assay Kit (Tissue and serum samples)	30 Assays	Spectrophotometry
E-BC-K122	Activity detection	H ⁺ K ⁺ -ATPase Colorimetric Assay Kit	100/200 Assays	Spectrophotometry
E-BC-K125	Activity detection	Choline Acetyltransferase (ChAT) Colorimetric Assay Kit (Tissue samples)	40 Assays	Spectrophotometry
E-BC-K126	Activity detection	γ -Glutamyl (γ -GT) transpeptidase Colorimetric Assay Kit	100 Assays	Spectrophotometry, Microplate reader
E-BC-K131	Activity detection	Lactase Colorimetric Assay Kit (Spec)	50 Assays	Spectrophotometry

Cat. No.	Detection Type	Product Name	Size	Instrument
E-BC-K132	Activity detection	Sucrase Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K148	Activity detection	Glutathione Peroxidase (GSH-PX) Colorimetric Assay Kit	100 Assays	Spectrophotometry, Microplate reader
E-BC-K158	Activity detection	Nitrate Reductase (NR) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry
E-BC-K174	Activity detection	Acetylcholinesterase (AChE) Colorimetric Assay Kit	100 Assays	Microplate reader, Spectrophotometry
E-BC-K193	Activity detection	Glucose-6-phosphate Dehydrogenase (G-6-PD) Colorimetric Assay Kit (Rate method)	R1:45 mL×1, R2:7 mL×1	Spectrophotometry, Biochemistry analyzer
E-BC-K196	Activity detection	5' -Nucleotidase (5'-NT) Colorimetric Assay Kit	96T	Microplate reader
E-BC-K199	Activity detection	Na ⁺ K ⁺ -ATPase Colorimetric Assay Kit (Tissue and cells)	50/100 Assays	Spectrophotometry
E-BC-K200	Activity detection	Alanine Aminotransferase (ALT/GPT) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K202	Activity detection	Caspase-3 Colorimetric Assay Kit	20T	Spectrophotometry, Microplate reader
E-BC-K212	Activity detection	Ca ²⁺ -ATPase Colorimetric Assay Kit (Tissue and cells)	50/100 Assays	Spectrophotometry
E-BC-K226	Activity detection	Peroxidase (POD) Colorimetric Assay Kit (Serum samples)	50 Assays	Spectrophotometry
E-BC-K227	Activity detection	Peroxidase (POD) Colorimetric Assay Kit (Plant samples)	50/100 Assays	Spectrophotometry
E-BC-K233	Activity detection	Copper-ATPase (Cu-ATPase) Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K235	Activity detection	Alanine Aminotransferase (ALT/GPT) Colorimetric Assay Kit	48/96T	Microplate reader
E-BC-K236	Activity detection	Aspartate Aminotransferase (AST/GOT) Colorimetric Assay Kit	48/96T	Microplate reader
E-BC-K240	Activity detection	β-Amylase Colorimetric Assay Kit	100 Assays	Spectrophotometry
E-BC-K259	Activity detection	Polyphenol Oxidase (PPO) Colorimetric Assay Kit	100 Assays	Spectrophotometry, Microplate reader
E-BC-K264	Activity detection	NADPH-Cytochrome C Reductase (NCR) Colorimetric Assay Kit	50 Assays	Spectrophotometry
E-BC-K289	Activity detection	Glutathione-S-transferase (GSH-ST) Colorimetric Assay Kit	100 Assays	Microplate reader
E-BC-K290	Activity detection	Glutathion Reductases (GR) Colorimetric Assay Kit	96T	Microplate reader, Spectrophotometry
E-BC-K295	Activity detection	α-Hydroxybutyrate Dehydrogenase (α-HBDH) Colorimetric Assay Kit	R1:60mL×1 R2:30mL×1	Spectrophotometry, Biochemistry analyzer
E-BC-K353	Activity detection	Ascorbate Peroxidase (APX) Colorimetric Assay Kit	50/100 Assays	Spectrophotometry

 **New biochemical kits keep updating, please inquiry if you demand the other kits not listed above.**



1. Advantages and disadvantages of spectrophotometers, microplate readers and biochemical analyzers.

Spectrophotometers are low-cost and can provide a wide range of wavelengths (usually full-band). However, they require large sample volume and are inconvenient to use. Microplate readers are simple and easy-to-use, but lack of sensitivity, automation and choices of wavelengths. Biochemical analyzers are highly automated, ease-of-use, accurate but expensive devices that can analyze small sample volume.

2. Which type of sample can be detected by biochemical kits?

Detection principles of biochemical kits are based on chemical reactions. Therefore, it is theoretically not restricted by biological species and sample types. However, biomarkers are extracted from different samples in different ways. Please refer to the manual for details.

3. Can biochemical kits detect frozen samples?

Fresh samples are recommended. Effects of freezing vary for different biomarkers. Normally, as the freezing time is extended, the activities of enzymes in the sample gradually decrease and even completely lose. But for some biomarkers, such as blood ammonia, the test results of frozen samples will be higher than that of fresh samples.

As for tissue homogenate samples, it is recommended to test on the same day. If it can't be detected on the same day, the samples should be kept at -80°C and tested as soon as possible (In this case, freezing tissues are suggested instead of homogenized tissue.).

Note: It is forbidden to freeze and thaw samples repeatedly.

4. Types of commonly used anticoagulants.

- (1) EDTA: The anticoagulant mechanism is to prevent blood coagulation by forming a stable chelate with calcium ions in the aqueous phase. EDTA can affect the activity of certain enzymes, so this anticoagulant is not recommended when testing enzyme activity in blood samples.
- (2) Heparin: It is the best anticoagulant in blood chemical composition determination. The anticoagulant mechanism lies in that, together with anticoagulant II, it inhibits the action between factors IXa, VIII and PF3 at low concentrations and enhances inactivation of serine proteases by antithrombin III to prevent thrombin formation; it also plays a part in the inhibition of both thrombin self-catalysis and the effect of inhibitor X. The dose of anticoagulation usually used is 10.0~12.5 IU/mL of blood.
- (3) Citrate: The anticoagulant mechanism is that citrate forms a soluble chelate with calcium ions in the blood, preventing blood from clotting.
- (4) Potassium oxalate: It forms a calcium oxalate precipitate by oxalic ion and calcium ions in the blood to make it non-clotting. Blood samples for potassium and calcium detection should not be anticoagulated with potassium oxalate.

5. Preparation of serum (plasma) samples.

Both serum and plasma are blood-soluble fractions that are free of cells (including platelets), the main difference being that serum does not contain blood coagulation factors and platelets, while plasma contains blood coagulation factors. The preparation methods are as follows:

- (1) Preparation of serum: Collect the not anticoagulated blood to a centrifuge tube and stand or place the centrifuge tube at 37°C to promote blood coagulation. After the coagulation, centrifuge at 1000×g for 5~10 minutes, then the resulting supernatant is serum. Carefully collect the supernatant (take care not to aspirate the cellular components) and subpackage it for detection.
- (2) Preparation of plasma: First add a certain proportion of anticoagulant into the container of blood (anticoagulant: blood = 1:9), then add a certain volume of blood, followed by inverting and mixing. Centrifuge at 1000×g for 5~10 minutes and the supernatant is plasma. For beginners, it is recommended to move the supernatant to another clean container. When pipetting out the plasma, use a capillary pipette to gradually suck down the liquid surface and avoid inhaling the cellular components.

6. Cell collection method.

Suspended cells can be directly centrifuged to collect cell pellets. Select the appropriate speed according to the cell type, which is generally no more than 1,500×g and the common speed is 800~1,000×g. There are two main methods for collecting adherent cells: 1) trypsin treatment. This method is not recommended if the sample is tested for enzyme activity because trypsin affects the detection of enzyme activity in the sample. In addition, commercial trypsin usually contains EDTA. Therefore, this method is not suitable if the instructions indicate that the sample should avoid the use of EDTA. 2) Cell scraping. It is recommended to collect cells using this method.

7. Preparation of tissue or cell homogenate samples.

- (1) Collect tissue or cell samples, add homogenization medium and homogenize. There are four kinds of homogenization methods to choose.

Manual homogenization: Pour the sample (containing the homogenization medium) into the glass homogenization tube; place the lower end into the container containing the ice water mixture with the left hand; and insert the homogenizer into the homogenate tube vertically with the right hand. Then turn it up and down and grind for dozens of times (6-8 minutes) to homogenize the tissue.

- (2) Mechanical homogenization: Place the weighed tissue into the EP tube, add homogenized medium, then grind the tissue homogenate in an ice water bath at 60 Hz for 90 s with a tissue homogenizer. It is advisable to appropriately extend homogenization time for samples, such as skin, muscle tissue and plant tissue.
- (3) Ultrasonic disruption: Ultrasonication with an ultrasonic generator at an amplitude of 14 μm for 30s, breaking the cells in an ice water bath; or using an ultrasonic crusher, 200 W, 2 s/time, 3 s/interval for a total time of 5 min.
- (4) Repeated freezing and thawing: It is suitable for cell samples. The cells are resuspended in hypotonic solution or double distilled water, and treat the cell suspension with "freeze-thaw-freeze" cycle for 3 times. It is worth noting that this method affects the viability of certain enzymes. Therefore, this method is not recommended for the detection of enzyme activity in cell samples.

8. General requirements for sample testing of biochemical kits.

- (1) Blood samples are free of hemolysis, lipemia or jaundice. Tissue samples should be rinsed and dried before weighing.
- (2) After the sample treatment, place the sample on the ice box and detect as soon as possible.
- (3) The samples should be clarified. If not, it is necessary to take the supernatant after centrifugation for detection (except for special biomarkers).
- (4) The value of the sample should be within the linear range of the kit. If it exceeds the linear range, it needs to be diluted before testing. If it is below the detection range, it is necessary to increase the sample concentration or increase the sample size before detection.

9. Specifications of cuvettes for spectrophotometry.

The cuvettes used in our biochemical kits are as follows: quartz cuvette (1 cm optical path, 3 mL volume), quartz cuvette (0.5 cm optical path, 1.5 mL volume), quartz cuvette (1 cm optical path, 1 mL volume), glass cuvette (1 cm optical path, 3 mL volume). It should be noted that glass cuvettes cannot be used in the ultraviolet (200 nm~400 nm) and should be tested using a quartz cuvette.

10. For detecting the same reactive substance, why are different wavelengths offered by different kits? For example, E-BC-K030 and E-BC-K051, both of which are DTNB reactions, why are the detection wavelengths different? What are their differences from the 412 nm wavelength on the market?

The rest of the reaction system will interfere with the detection of the reaction product at a certain wavelength; and the degree of interference will vary due to different concentration of each substance in the system. So depending on the concentration of the product system, the most suitable wavelength is recommended for detection.

11. Why is the difference between the test data and the literature reports or the results of the previous measurements in the laboratory?

- (1) The effect of the sample itself: The concentration or enzyme activity of the same index will vary much in different samples, or in different developmental stages or different environments of the same sample.
- (2) The effect of the measurement method: The test results of the same index differs greatly depending on the measurement method. When comparing with the results of the literature, attention should be paid to the detection methods, culture and processing conditions, calculation formulas, units and unit definitions of the literature.
- (3) The effect of operation and instrumentation: Operator sampling habits, homogenization levels, and external testing environment can have a significant impact on test results. The detection limits and stability of different instruments and equipment will also have an impact.
- (4) When comparing with test results of other literature, the data difference and trend between the experimental group and the control group should be focused on, not the values of the test results.

12. Why a high intra-assay variation is observed for parallel detections of the same sample?

- (1) Reasons for samples: Uneven distribution of sample content, incomplete centrifugation during sample extraction, and impurities.
- (2) Reasons for instruments: The system error caused by the instrument; and the instrument needs to be warmed up for 30 minutes before measuring.
- (3) Reasons for operation: untrained users, operation errors of adding samples or reagents.

13. Why are the measurement results equal to or even weaker than negative/blank controls?

- (1) It is caused by contamination-induced false-positive results of blank controls.
- (2) Reasons for samples:
 - a. The sample content is low. It is suggested to increase the sample size or the sample concentration before carrying out the experiment;
 - b. The sample extraction is improper or insufficient. Please follow the sample pretreatment steps in the manual for extraction.

14. Why is there no color ?

- (1) No target is contained in the sample.
- (2) Improper pretreatment: For example, the reagent used in the pretreatment inactivates the enzyme.
- (3) The sample is not properly stored.
- (4) Improper storage of the reagents causes changes in the components of the reagents.

Cat. No.	Item	Publication	IF
E-BC-K353	Ascorbate Peroxidase (APX)	Lee H Y, Back K. Melatonin induction and its role in high light stress tolerance in Arabidopsis thaliana[J]. Journal of pineal research, 2018.	11.613
E-BC-K020	Superoxide Dismutase (T-SOD)	Bhattacharjee A, Rahaman S H, Saha S, et al. Determination of half maximal inhibitory concentration of CaAl layered double hydroxide on cancer cells and its role in the apoptotic pathway[J]. Applied Clay Science, 2019, 168: 31-35.	3.641
E-BC-K020	Superoxide Dismutase (T-SOD)	Siboto A, Sibiya N, Khathi A, et al. The Effects of Momordica balsamina Methanolic Extract on Kidney Function in STZ-Induced Diabetic Rats: Effects on Selected Metabolic Markers[J]. Journal of Diabetes Research, 2018.	2.885
E-BC-K096	Glutathione Peroxidase (GSH-PX)	Siboto A, Sibiya N, Khathi A, et al. The Effects of Momordica balsamina Methanolic Extract on Kidney Function in STZ-Induced Diabetic Rats: Effects on Selected Metabolic Markers[J]. Journal of Diabetes Research, 2018.	2.885
E-BC-K036	Nitric Oxide (NO)	Wang X, Tan Y, Xu B, et al. GPR30 Attenuates Myocardial Fibrosis in Diabetic Ovariectomized Female Rats: Role of iNOS Signaling[J]. DNA and cell biology, 2018, 37(10): 821-830.	2.634
E-BC-K318	Total Protein (TP)	Yin X, Zhao J, Jiang H, et al. Impact of Xenon on CLIC4 and Bcl-2 Expression in Lipopolysaccharide and Hypoxia-Ischemia-Induced Periventricular White Matter Damage[J]. Neonatology, 2018, 113(4): 339-346.	2.598
E-BC-K096	Glutathione Peroxidase (GSH-PX)	Kim J, Choung S Y. Pinus Densiflora Bark Extract Prevents Selenite-induced Cataract Formation In The Lens Of Sprague Dawley Rat Pups[J]. Molecular Vision, 2017, 23: 638-648.	2.057
E-BC-K318	Total Protein (TP)	Uysal N, Yuksel O, Kizildag S, et al. Regular aerobic exercise correlates with reduced anxiety and increased levels of irisin in brain and white adipose tissue[J]. Neuroscience Letters, 2018.	0.729

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