

Instruction-Human GABA(Gamma-aminobutyric acid) ELISA Kit

Catalog #: ARE6643 | Version: V1.0

For Research Use Only. Not for Diagnostic or Therapeutic Procedures.

1. Product Overview

Application: In vitro quantitative detection of Human Gamma-Aminobutyric Acid (GABA) in serum, plasma, cell culture supernatant and other biological samples.

Reactivity: Human

Detection Method: Competitive ELISA

Detection Range: 31.25–2000 pg/ml

Sensitivity: 18.75 pg/ml

Assay Duration: 2 hours (excluding equilibration and sample preparation)

Sample Volume (per well): 50 µl (max)

Specificity: Specifically recognizes GABA, no obvious cross-reactivity with analogs.

Storage: 2–8°C (sealed kit); do not freeze. Refer to kit label for expiry date.

2. Kit Components (96T)

Component	Quantity	Storage
ELISA Microplate (Dismountable)	8×12 strips	2–8°C (sealed)
Lyophilized Standard	2 vials	2–8°C
Biotinylated Antibody (100×)	60 µl	2–8°C, dark
HRP-Streptavidin (SABC, 100×)	120 µl	2–8°C
TMB Substrate	10 ml	2–8°C, dark
Sample Dilution Buffer	20 ml	2–8°C
Antibody Dilution Buffer	10 ml	2–8°C
SABC Dilution Buffer	10 ml	2–8°C
Stop Solution	10 ml	2–8°C
Wash Buffer (25×)	30 ml	2–8°C
Plate Sealer	5 pieces	—

3. Required Equipment & Reagents

1. Microplate reader (450 nm)
2. 37°C incubator
3. Multi-channel pipette & disposable tips
4. Deionized/distilled water
5. Centrifuge & EP tubes

4. Sample Preparation

Serum/Plasma: Collect blood, centrifuge 1000×g for 20 min, collect supernatant. Store at -20°C if not used immediately.

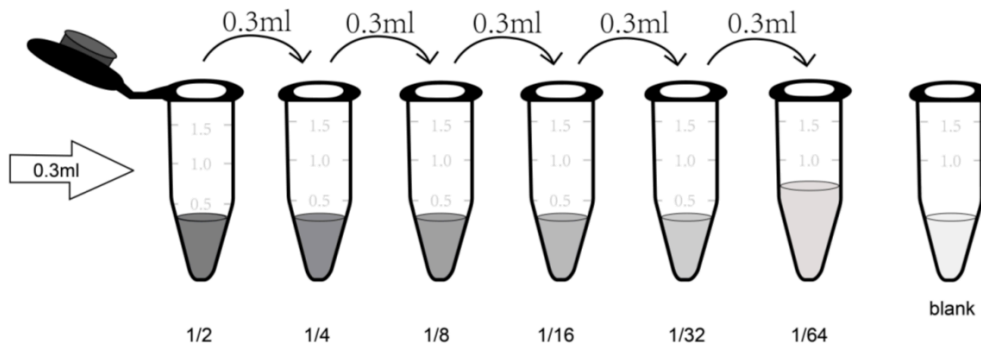
Cell Culture Supernatant: Centrifuge 2500 rpm for 5 min, collect supernatant.

Tissue Lysate: Homogenize tissue in cold PBS, centrifuge 5000×g for 5 min, collect supernatant.

5. Reagent Preparation

Wash Buffer: Dilute 25× concentrate to 1× with deionized water.

Standard Reconstitution & Dilution: Add 1 ml Sample Dilution Buffer to lyophilized standard. Prepare serial dilutions: 2000, 1000, 500, 250, 125, 62.5, 31.25 pg/ml.



Prepare standard solutions

Standard Dilution Scheme

Biotinylated Antibody: Dilute 100× to 1× with Antibody Dilution Buffer.

SABC: Dilute 100× to 1× with SABC Dilution Buffer.

6. Assay Procedure

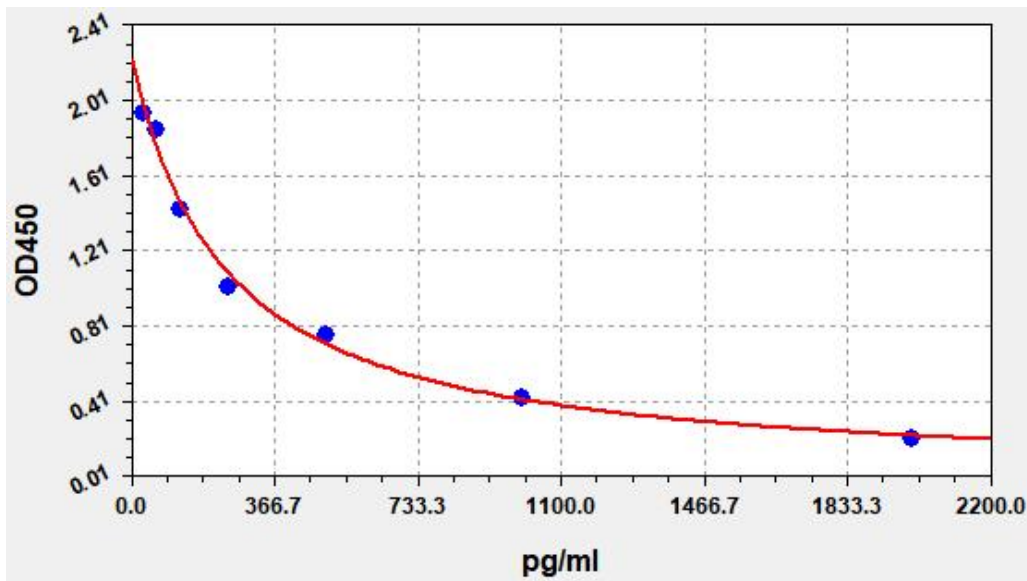
1. Equilibrate all reagents to room temperature.
2. Wash plate 2 times with 1× Wash Buffer.
3. Add 50 µl Standard/Sample + 50 µl Biotinylated Antibody to each well. Incubate 45 min at 37°C.
4. Wash 3 times.
5. Add 100 µl SABC. Incubate 30 min at 37°C.
6. Wash 5 times.
7. Add 90 µl TMB. Incubate 10–20 min at 37°C (dark).
8. Add 50 µl Stop Solution. Read OD450 immediately.

7. Calculation

Calculate mean OD of duplicates. Plot 4-parameter logistic standard curve. Sample concentration = (OD_{sample} – OD_{blank}) × dilution factor.

8. Typical Data & Standard Curve

Standard (pg/ml)	Mean OD450
2000	0.192
1000	0.330
500	0.530
250	0.821
125	1.094
62.5	1.537
31.25	2.276



Typical Standard Curve (Reference Only)

9. Precision

Precision Type	CV (%)
Intra-assay Precision	≤5%
Inter-assay Precision	≤6%

10. Recovery

Matrix	Recovery Range (%)
Serum	86–98%
EDTA Plasma	87–98%
Heparin Plasma	86–104%

11. Linearity

Matrix	Linearity Range (Recovery %)
Serum	87–102%
EDTA Plasma	83–100%
Heparin Plasma	81–95%

12. Stability

Condition	Stability
37°C (accelerated)	1 month ($\geq 80\%$ activity)
2–8°C (sealed)	6 months (95–100% activity)

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