Instructions for use

GABA ELISA Assay Kit

Distributed in the US and Canada by:

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REF BA E-2500

For research use only – Not for use in diagnostic procedures
1. Introduction

1.1 Intended use and principle of the test

Enzyme Immunoassay for the quantitative determination of Gamma-aminobutyric acid (GABA) in human plasma, serum, urine and various biological samples.

After extraction and derivatization Gamma-aminobutyric acid (GABA) is quantitatively determined by ELISA. The competitive ELISA uses the microtiter plate format. The antigen is bound to the solid phase of the microtiter plate. The derivatized analyte concentrations of the standards, controls and samples and the solid phase bound analyte compete for a fixed number of antiserum binding sites. When the system is in equilibrium, free antigen and free antigen-antibody complexes are removed by washing. The antibody bound to the solid phase is detected by an anti-rabbit IgG-peroxidase conjugate using TMB as a substrate. The reaction is monitored at 450 nm.

Quantification of unknown samples is achieved by comparing their absorbance with a standard curve prepared with known standards.

2. Procedural cautions, guidelines, warnings and limitations

2.1 Procedural cautions, guidelines and warnings

(1) This kit is intended for professional use only. Users should have a thorough understanding of this protocol for the successful use of this kit. Only the test instruction provided with the kit is valid and has to be used to run the assay. Reliable performance will only be attained by strict and careful adherence to the instructions provided.

(2) This assay was validated for a certain type of sample as indicated in Intended Use (please refer to Chapter 1). Any off-label use of this kit is in the responsibility of the user and the manufacturer cannot be held liable.

(3) The principles of Good Laboratory Practice (GLP) have to be followed.

(4) In order to reduce exposure to potentially harmful substances, wear lab coats, disposable protective gloves and protective glasses where necessary.

(5) All kit reagents and specimens should be brought to room temperature and mixed gently but thoroughly before use. Avoid repeated freezing and thawing of reagents and specimens.

(6) For dilution or reconstitution purposes, use deionized, distilled, or ultra-pure water.

(7) The microplate contains snap-off strips. Unused wells must be stored at 2 °C to 8 °C in the sealed foil pouch with desiccant and used in the frame provided.

(8) Duplicate determination of sample is highly recommended to be able to identify potential pipetting errors.

(9) Once the test has been started, all steps should be completed without interruption. Make sure that the required reagents, materials and devices are prepared ready at the appropriate time.

(10) Incubation times do influence the results. All wells should be handled in the same order and time intervals.

(11) To avoid cross-contamination of reagents, use new disposable pipette tips for dispensing each reagent, sample, standard and control.

(12) A standard curve must be established for each run.

(13) The controls should be included in each run and fall within established confidence limits. The confidence limits are listed in the QC-Report provided with the kit.

(14) Do not mix kit components with different lot numbers within a test and do not use reagents beyond expiry date as shown on the kit labels.

(15) Avoid contact with Stop Solution containing 0.25 M H₂SO₄. It may cause skin irritation and burns. In case of contact with eyes or skin, rinse off immediately with water.

(16) TMB substrate has an irritant effect on skin and mucosa. In case of possible contact, wash eyes with an abundant volume of water and skin with soap and abundant water. Wash contaminated objects before reusing them.

(17) For information on hazardous substances included in the kit please refer to Safety Data Sheet (SDS). The Safety Data Sheet for this product is made available directly on the website of the manufacturer or upon request.

(18) Kit reagents must be regarded as hazardous waste and disposed of according to national regulations.

2.2 Limitations

Any inappropriate handling of samples or modification of this test might influence the results.
2.2.1 Interfering substances

Serum/Plasma

Samples containing precipitates or fibrin strands or which are haemolytic or lipemic might cause inaccurate results.

24-hour urine

Please note the sample preparation! If the percentage of the final concentration of acid is too high, this will lead to incorrect results for the urine samples.

2.2.2 Drug interferences

There are no known substances (drugs) which ingestion interferes with the measurement of GABA level in the sample.

2.2.3 High-Dose-Hook effect

No hook effect was observed in this test.

3. Storage and stability

Store the unopened reagents at 2 - 8 °C until expiration date. Do not use components beyond the expiry date indicated on the kit labels. Once opened the reagents are stable for 1 month when stored at 2 – 8 °C. Once the resealable pouch has been opened, care should be taken to close it tightly with desiccant again.

4. Materials

4.1 Contents of the kit

<table>
<thead>
<tr>
<th>Identification</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA D-0090</td>
<td>Adhesive Foil</td>
<td>Ready to use. Contents: Adhesive Foils in a resealable pouch. Volume: 3 x 4 foils</td>
</tr>
<tr>
<td>BA D-0033</td>
<td>Macrotiter Plate</td>
<td>Ready to use. Contents: 2 x 48 well plate, empty in a resealable pouch.</td>
</tr>
<tr>
<td>BA E-2442</td>
<td>Extraction Plate</td>
<td>Ready to use. Contents: 2 x 48 well plate, precoated with cation exchanger in a resealable pouch.</td>
</tr>
<tr>
<td>BA E-0030</td>
<td>Wash Buffer Concentrate</td>
<td>Concentrated 50x. Contents: Buffer with a non-ionic detergent and physiological pH. Volume: 1 x 20 ml/vial, light purple cap</td>
</tr>
<tr>
<td>BA E-0040</td>
<td>Enzyme Conjugate</td>
<td>Ready to use. Contents: Goat anti-rabbit immunoglobulins conjugated with peroxidase. Volume: 1 x 12 ml/vial, red cap</td>
</tr>
<tr>
<td>BA E-0055</td>
<td>Substrate</td>
<td>Ready to use. Contents: Chromogenic substrate containing tetramethylbenzidine, substrate buffer and hydrogen peroxide. Volume: 1 x 12 ml/black vial, black cap</td>
</tr>
<tr>
<td>BA E-0080</td>
<td>Stop Solution</td>
<td>Ready to use. Contents: 0.25 M sulfuric acid. Volume: 1 x 12 ml/vial, light grey cap. Hazards identification: H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>BA E-2531</td>
<td>GABA Microtiter Strips</td>
<td>Ready to use. Contents: 1 x 96 well (12x8) antigen precoated microwell plate in a resealable foil pouch with desiccant</td>
</tr>
</tbody>
</table>
**BA E-2510**  
**AS GABA GABA Antiserum** - Ready to use  
**Contents:** Rabbit anti-GABA antibody, blue coloured  
**Volume:** 1 x 6 ml/vial, blue cap

**Standards and Controls** - Ready to use

<table>
<thead>
<tr>
<th>Cat. no.</th>
<th>Component</th>
<th>Colour/Cap</th>
<th>Concentration ng/ml</th>
<th>Concentration nmol/l</th>
<th>Volume/Vial</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA E-2501</td>
<td>STANDARD A</td>
<td>white</td>
<td>0</td>
<td>0</td>
<td>4 ml</td>
</tr>
<tr>
<td>BA E-2502</td>
<td>STANDARD B</td>
<td>light yellow</td>
<td>75</td>
<td>727</td>
<td>4 ml</td>
</tr>
<tr>
<td>BA E-2503</td>
<td>STANDARD C</td>
<td>orange</td>
<td>250</td>
<td>2 425</td>
<td>4 ml</td>
</tr>
<tr>
<td>BA E-2504</td>
<td>STANDARD D</td>
<td>dark blue</td>
<td>750</td>
<td>7 275</td>
<td>4 ml</td>
</tr>
<tr>
<td>BA E-2505</td>
<td>STANDARD E</td>
<td>light grey</td>
<td>2 500</td>
<td>24 250</td>
<td>4 ml</td>
</tr>
<tr>
<td>BA E-2506</td>
<td>STANDARD F</td>
<td>black</td>
<td>7 500</td>
<td>72 750</td>
<td>4 ml</td>
</tr>
<tr>
<td>BA E-2551</td>
<td>CONTROL 1</td>
<td>light green</td>
<td>Refer to QC-Report for expected value and acceptable range!</td>
<td></td>
<td>4 ml</td>
</tr>
<tr>
<td>BA E-2552</td>
<td>CONTROL 2</td>
<td>dark red</td>
<td></td>
<td></td>
<td>4 ml</td>
</tr>
</tbody>
</table>

**Conversion:**  
GABA (ng/ml) x 9.7 = GABA (nmol/l)

**Contents:** Acidic buffer with non-mercury preservative, spiked with defined quantity of GABA

**BA E-2513**  
**ASSAY-BUFF Assay Buffer** - Ready to use  
**Contents:** Buffer with non-mercury preservative  
**Volume:** 1 x 20 ml/vial, yellow cap

**BA E-2428**  
**EQUA-READ Equalizing Reagent** - Lyophilized  
**Contents:** Lyophilized protein  
**Volume:** 1 vial, brown cap

**BA E-2446**  
**D-REAGENT D-Reagent** - Ready to use  
**Contents:** Crosslinking agent in dimethylsulfoxide  
**Volume:** 1 x 4 ml/vial, white cap

**BA E-2458**  
**Q-BUFFER Q-Buffer** - Ready to use  
**Contents:** TRIS buffer  
**Volume:** 1 x 20 ml/vial, white cap

**BA E-2561**  
**I-BUFFER I-Buffer** - concentrated  
**Contents:** Buffer with non-ionic detergent and non-mercury preservative  
**Volume:** 1 x 4 ml/vial, light red cap

**BA E-2541**  
**ELUTION-BUFF Elution-Buffer** - Ready to use  
**Contents:** Buffer with citric acid  
**Volume:** 1 x 50 ml/vial, dark green cap

**BA E-2560**  
**DILUENT Diluent** - Ready to use  
**Contents:** Buffer with acidic pH  
**Volume:** 2 x 20 ml/vial, blue cap

**BA E-2787**  
**NAOH NaOH** - Ready to use  
**Contents:** Sodium hydroxide solution  
**Volume:** 1 x 2 ml/vial, purple cap

**Hazards identification:**  
H290 May be corrosive to metals.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.
*For the determination of serum and plasma, standards and controls should always be diluted 1:3 (e.g., 100 µl standard + 200 µl water (deionized, distilled, or ultra-pure)). Do not forget to correct the result afterwards for the dilution. Urine values of GABA are higher than for serum and plasma. Dilution of the standards is to make sure sample is measured in linear part of standard curve.

4.2 Additional materials and equipment required but not provided in the kit
- Calibrated precision pipettes to dispense volumes between 10 – 400 µl; 1 ml; 10 ml
- Microtiter plate washing device (manual, semi-automated or automated)
- ELISA reader capable of reading absorbance at 450 nm and if possible 620 - 650 nm
- Microtiter plate shaker (shaking amplitude 3 mm; approx. 600 rpm)
- Vortex mixer
- Absorbent material (paper towel)
- Water (deionized, distilled, or ultra-pure)

5. Sample collection and storage

Plasma
Whole blood should be collected into centrifuge tubes containing EDTA as anti-coagulant (Monovette™ or Vacuette™ for plasma) and centrifuged according to manufacturer’s instructions at room temperature immediately after collection.
Fasting specimens or pre-feed specimens for children (2 - 3 hours after last meal) are advised. Haemolytic and especially lipemic samples should not be used for the assay.
Storage: up to 24 hours at 2 - 8 °C, for longer period (up to 6 month) at -20 °C. Repeated freezing and thawing should be avoided.

Serum
Collect blood by venipuncture (Monovette™ or Vacuette™ for serum), allow to clot, and separate serum by centrifugation according to manufacturer’s instructions at room temperature. Do not centrifuge before complete clotting has occurred. Patients receiving anticoagulant therapy may require increased clotting time. Fasting specimens or pre-feed specimens for children (2 - 3 hours after last meal) are advised. Haemolytic and especially lipemic samples should not be used for the assay.
Storage: up to 24 hours at 2 - 8 °C, for longer period (up to 6 month) at -20 °C.
Repeated freezing and thawing should be avoided.

Urine
Spontaneous urine or 24-hour urine, collected in a bottle containing 10 - 15 ml of 6 M HCl, can be used. If 24-hour urine is used please record the total volume of the collected urine.
Storage: for longer periods (up to 6 month) at -20 °C.
Repeated freezing and thawing should be avoided. Avoid exposure to direct sunlight!

6. Test procedure

Allow all reagents and samples to reach room temperature and mix thoroughly by gentle inversion before use. Duplicate determinations are recommended. It is recommended to number the strips of the microwell plate before usage to avoid any mix-up.
The binding of the antisera and of the enzyme conjugate and the activity of the enzyme are temperature dependent, and the absorption values may vary if a thermostat is not used. The higher the temperature, the higher the absorption values will be. Varying incubation times will have similar influences on the absorbance. The optimal temperature during the Enzyme Immunoassay is between 20 – 25 °C.

⚠️ In case of overflow, read the absorbance of the solution in the wells within 10 minutes, using a microplate reader set to 405 nm.

6.1 Preparation of reagents

Wash Buffer
Dilute the 20 ml Wash Buffer Concentrate with water (deionized, distilled, or ultra-pure) to a final volume of 1000 ml.
Storage: 1 month at 2 – 8 °C

Equalizing Reagent
Reconstitute the Equalizing Reagent with 10 ml of Assay Buffer.
Reconstituted Equalizing Reagent which is not used immediately has to be stored in aliquots for max 1 month at -20 °C and may be thawed only once.

I-Buffer
Dilute the 4 ml I-Buffer Concentrate with water (deionized, distilled, or ultra-pure) to a final volume of 400 ml.
Storage: 1 month at 2 – 8 °C
D-Reagent
The D-Reagent has a freezing point of 18.5 °C. Make sure that the D-Reagent has reached room temperature and forms a homogeneous, crystal-free solution.

GABA Microtiter Strips
In rare cases residues of the blocking and stabilizing reagent can be seen in the wells as small, white dots or lines. These residues do not influence the quality of the product.

6.2 Preparation of samples
The GABA ELISA is a flexible test system for various biological sample types and samples. It is not possible to give a general advice how to prepare the samples. However, the following basics should help the researcher to fit the protocol to his specific needs:

⚠️ For the determination of samples in a range between 25 – 2500 ng/ml, standards and controls should always be diluted 1:3 with water (e.g. 100 µl standard + 200 µl water (deionized, distilled, or ultra-pure)). This predilution of the standards has to be taken into account in the calculation of results. The standards are diluted to make sure that the samples fall into the linear part of the standard curve. Do not dilute samples!

⚠️ For the determination of samples in a range between 75 – 7500 ng/ml, do not dilute standards, controls or samples.
- Avoid excess of acid: excess of acid might exceed the buffer capacity of the dilution buffer. A pH of 3.0 during the extraction is mandatory.
- It is advisable to perform a Proof of Principle to determine the recovery of GABA from the samples. Prepare a stock solution of GABA. Add small amounts (to change the native sample matrix as less as possible) of the stock solutions to the sample matrix and check the recovery.
- The sample volume determines the sensitivity of this test. Determine the sample volume needed to determine GABA in your sample by testing different amounts of sample volumes.

If you need any support in establishing a protocol for your specific purposes, do not hesitate to contact the manufacturer directly!

6.3 Test procedure (75 – 7500 ng/ml)

6.3.1 Extraction

1. Pipette 100 µl of the standards, controls and samples into the appropriate wells of the Extraction Plate.
2. Add 100 µl of the Diluent to all wells. Cover plate with Adhesive Foil and incubate for 15 min at RT (20 – 25 °C) on a shaker (approx. 600 rpm).
3. Discard and blot dry by tapping the inverted plate on absorbent material. Wash each well with 500 µl of water (deionized, distilled, or ultra-pure) and incubate for 5 min at RT (20 – 25 °C) on a shaker (approx. 600 rpm).
4. Discard the wash and blot dry by tapping the inverted plate on absorbent material.
5. Pipette 400 µl of Elution Buffer into the appropriate wells of the Extraction Plate. Cover plate with Adhesive Foil and incubate for 10 min at RT (20 – 25 °C) on a shaker (approx. 600 rpm).
6. Use 100 µl for the subsequent derivatization!

6.3.2 Derivatization

1. Pipette 100 µl of the extracted standards, controls and samples into the appropriate wells of the Macrotiter Plate.
2. Pipette 10 µl of the NaOH into all wells.
3. Add 50 µl of the Equalizing Reagent (fresh prepared before assay) to all wells and incubate for 1 min on a shaker (approx. 600 rpm).
4. Pipette 10 µl of the D-Reagent into all wells.
5. Cover plate with Adhesive Foil and incubate for 2 h at RT (20 – 25 °C) on a shaker (approx. 600 rpm).
6. Pipette 200 µl Q-Buffer into all wells.
7. Shake for 10 min at RT (20 – 25 °C) on a shaker (approx. 600 rpm).
8. Use 50 µl for the subsequent ELISA!
### 6.3.3 GABA ELISA

1. Pipette **50 µl** of the **derivatized standards, controls** and **samples** into the appropriate wells of the **GABA Microtiter Strips**.
2. Pipette **50 µl** of the **GABA Antiserum** into all wells and mix shortly.
3. Cover plate with **Adhesive Foil** and incubate for **15 - 20 h** (overnight) at **2 - 8 °C**. Alternatively incubate **2 h at RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**.
4. Remove the foil. Discard or aspirate the content of the wells. Wash the plate **3 x** by adding **300 µl** of **Wash Buffer**, discarding the content and **blotting dry each time** by tapping the inverted plate on absorbent material.
5. Pipette **100 µl** of the **Enzyme Conjugate** into all wells.
6. Incubate for **30 min** at **RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**.
7. Discard or aspirate the content of the wells. Wash the plate **3 x** by adding **300 µl** of **Wash Buffer**, discarding the content and **blotting dry each time** by tapping the inverted plate on absorbent material.
8. Pipette **100 µl** of the **Substrate** into all wells and incubate for **20 - 30 min** at **RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**. **Avoid exposure to direct sunlight!**
9. Add **100 µl** of the **Stop Solution** to each well and shake the microtiter plate to ensure a homogeneous distribution of the solution.
10. Read the absorbance of the solution in the wells within 10 minutes, using a microplate reader set to **450 nm** (if available a reference wavelength between 620 nm and 650 nm is recommended).

### 6.4 Test procedure (25 – 2 500 ng/ml)

#### 6.4.1 Extraction

1. Pipette **300 µl** of the **diluted standards, controls** and **undiluted samples** into the appropriate wells of the **Extraction Plate**.
2. Add **300 µl** of the **Diluent** to all wells. Cover plate with **Adhesive Foil** and incubate for **30 min** at **RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**.
3. **Washing step (2 cycles):**
   - Discard and blot dry by tapping the inverted plate on absorbent material. **Add 1ml of I-Buffer** to each well and incubate the plate for **5 min** at **RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**.
   - Discard and blot dry by tapping the inverted plate on absorbent material. **Add 1ml of I-Buffer** to each well and incubate the plate for **5 min** at **RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**.
4. Discard and blot dry by tapping the inverted plate on absorbent material.
5. Pipette **250 µl** of **Elution Buffer** into the appropriate wells of the **Extraction Plate**. Cover plate with **Adhesive Foil** and incubate for **10 min** at **RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**.
6. Use **100 µl** for the subsequent **derivatization**!

#### 6.4.2 Derivatization

1. Pipette **100 µl** of the **extracted standards, controls** and **samples** into the appropriate wells of the **Macrotiter Plate**.
2. Pipette **10 µl** of the **NaOH** into all wells.
3. Add **50 µl** of the **Equalizing Reagent** (fresh prepared before assay) to all wells and incubate for **1 min** on a **shaker (600 rpm)**.
4. Pipette **10 µl** of the **D-Reagent** into all wells.
5. Cover plate with **Adhesive Foil** and incubate for **2 h** at **RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**.
6. Pipette **150 µl** **Q-Buffer** into all wells.
7. Incubate for **10 min** at **RT (20 – 25 °C)** on a **shaker (approx. 600 rpm)**.
8. Use **25 µl** for the subsequent **ELISA!**
6.4.3 GABA ELISA

1. Pipette 25 µl of the derivatized standards, controls and samples into the appropriate wells of the GABA Microtiter Strips.

2. Pipette 50 µl of the GABA Antiserum into all wells and mix shortly.

3. Cover plate with Adhesive Foil and incubate for 15 - 20 h (overnight) at 2 – 8 °C. Alternatively incubate 2 h at RT (20 – 25 °C) on a shaker (approx. 600 rpm).

4. Remove the foil. Discard or aspirate the content of the wells. Wash the plate 3 x by adding 300 µl of Wash Buffer, discarding the content and blotting dry each time by tapping the inverted plate on absorbent material.

5. Pipette 100 µl of the Enzyme Conjugate into all wells.

6. Cover plate with Adhesive Foil. Incubate for 30 min at RT (20 – 25 °C) on a shaker (approx. 600 rpm).

7. Remove the foil. Discard or aspirate the content of the wells. Wash the plate 3 x by adding 300 µl of Wash Buffer, discarding the content and blotting dry each time by tapping the inverted plate on absorbent material.

8. Pipette 100 µl of the Substrate into all wells and incubate for 20 - 30 min at RT (20 – 25 °C) on a shaker (approx. 600 rpm). Avoid exposure to direct sunlight!

9. Add 100 µl of the Stop Solution to each well and shake the microtiter plate to ensure a homogeneous distribution of the solution.

10. Read the absorbance of the solution in the wells within 10 minutes, using a microplate reader set to 450 nm (if available a reference wavelength between 620 nm and 650 nm is recommended).

7. Calculation of results

<table>
<thead>
<tr>
<th>Measuring range</th>
<th>GABA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>49 – 7 500 ng/ml</td>
</tr>
<tr>
<td>Plasma/Serum</td>
<td>25 – 2 500 ng/ml</td>
</tr>
</tbody>
</table>

The standard curve is obtained by plotting the absorbance readings (calculate the mean absorbance) of the standards (linear, y-axis) against the corresponding standard concentrations (logarithmic, x-axis). Use non-linear regression for curve fitting (e.g. spline, 4- parameter, akima).

⚠️ This assay is a competitive assay. This means: the OD-values are decreasing with increasing concentrations of the analyte. OD-values found below the standard curve correspond to high concentrations of the analyte in the sample and have to be reported as being positive.

Serum/plasma
The read concentrations of plasma samples have to be divided by 3.

Urine samples and controls
The concentrations of the samples and controls can be read directly from the standard curve.

The total amount of GABA excreted in urine during 24 h is calculated as following: µg/24h = µg/l x l/24h

Conversion
GABA (ng/ml) x 9.7 = GABA (nmol/l)

Expected reference value
It is strongly recommended that each laboratory should determine its own reference value.

<table>
<thead>
<tr>
<th>Expected Reference Value</th>
<th>Spontaneous urine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>230 - 1 290 µg/g creatinine</td>
</tr>
</tbody>
</table>

7.1 Quality control
The confidence limits of the kit controls are indicated on the QC-Report.
7.2 Typical standard curve
⚠️ Example, do not use for calculation!

![Graph showing a typical standard curve for GABA](image)

8. Assay characteristics

<table>
<thead>
<tr>
<th>Sensitivity (lower limit of detection)</th>
<th>Urine (spontaneous)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>49 ng/ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recovery</th>
<th>Mean (%)</th>
<th>Range (%)</th>
<th>% Recovery after spiking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>104%</td>
<td>96 – 116%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Linearity</th>
<th>Range (ng/ml)</th>
<th>Range (%)</th>
<th>Mean (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35 – 4048</td>
<td>74-119</td>
<td>93</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Analytical Specificity (Cross Reactivity)</th>
<th>Substance</th>
<th>Cross Reactivity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GABA</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>GABA</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>α-Aminobutyric acid</td>
<td>&lt; 0.09</td>
</tr>
<tr>
<td></td>
<td>Glycine</td>
<td>&lt; 0.09</td>
</tr>
<tr>
<td></td>
<td>L-Glutamine</td>
<td>&lt; 0.09</td>
</tr>
<tr>
<td></td>
<td>β-Aminobutyric acid</td>
<td>&lt; 0.09</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Precision</th>
<th>Intra-Assay</th>
<th>Inter-Assay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sample</td>
<td>Range (ng/ml)</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>318 ± 32</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>723 ± 94</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2457 ± 110</td>
</tr>
</tbody>
</table>
9. References/Literature


(2) El-Ansary et al. Relationship between chronic lead toxicity and plasma neurotransmitters in autistic patients from Saudi Arabia. Clinical Biochemistry, 44(23):1116-1120 (2011)


For updated literature or any other information please contact your local supplier.

The liability of the manufacturer shall be limited to the replacement of defective products. The manufacturer takes no liability for any damages or expenses arising directly or indirectly from the use of this product.

Symbols:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td><img src="image" alt="Storage temperature" /></td>
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<tr>
<td><img src="image" alt="Manufacturer" /></td>
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