

New ELISA & RIA Kits

...high diagnostic sensitivity and specificity

2011

**GABA, Serotonin, Dopamine, Endocrinology
and Catecholamine Kits for research purposes...**

New GABA ELISA

based on a unique high throughput extraction procedure

Features: BIOTREND has developed an ELISA for the quantitative determination of GABA in different biological samples. The determination of GABA has the following features:

- Easy sample extraction step featuring a patent pending technology that avoids the use of ion-exchange columns
- No tedious derivatization
- Freedom from organic solvents
- Highly specific for GABA (no cross reactions with Glutamate or Glutamine)
- Broad dynamic measuring range
- Freedom from interferences

Introduction: The new GABA (γ -aminobutyric acid) ELISA is especially designed to measure GABA in different biological fluids (eg. brain and spinal cord homogenates, cell culture). With this new assay, improved sensitivity is achieved and less sample volume can be used. To achieve all this, a new extraction procedure was developed. Instead of using the laborious ion exchange column procedure, the ion exchange resin was coated to a microtiter plate (patent pending). It showed that after the coating, the ion exchange kept its unique characteristics. The advantage of using an extraction plate instead of a column: no "dead" volume, faster throughput, higher sensitivity. For the subsequent ELISA procedure a highly specific GABA antibody is used. A proof of principle was performed with rat brain and spinal cord tissue homogenates. Samples of rat brain and spinal cord were homogenized and spiked with known concentrations of GABA, and recovery and linearity of the GABA ELISA was tested.

Results: GABA standards were treated like samples and corresponded to 250 – 25000 pg/well. Only 10 μ L homogenate was needed for the analysis. Recovery from brain homogenate (cortex) was 83 – 100 %, for spinal cord homogenate (lumbar region) 85 – 92 %. Linearity for both samples was 98 – 115 %. Different brain and spinal cord regions were analyzed (brain: cortex and hippocampus, spinal cord: cervical, thoracic and lumbar region). Results were in line with previous HPLC results on the same kind of samples.

Conclusion: A sensitive GABA ELISA with a new extraction procedure was developed. Based on this straightforward method high throughput testing of samples is possible. The results show, that it is possible to measure GABA in different kind of homogenates.

Sample Preparation (Flexible Volumes):

1. GABA is extracted by ion exchange chromatography. Microtiter plates (48 Well) are coated with a cation exchange resin (patent pending).
2. After washing away unbound molecules, the bound GABA is released. The whole extraction procedure takes only 30 minutes.
3. In a simple derivatization step GABA is coupled to a protein. This is needed for the ELISA

Samples:

- Brain homogenates
- Signal cord homogenates
- Cell culture supernatants

Immunoassay:

1. 50 μ L derivatized sample
2. 50 μ L specific antiserum
3. Incubation overnight at 4 - 8°C
4. Three wash cycles with 300 μ L wash buffer
5. 100 μ L Enzyme conjugate
6. Incubation for 30 min at RT (shaker)
7. Three wash cycles with 300 μ L wash buffer
8. 100 μ L Substrate
9. Incubation for 20-30 min at RT (shaker)
10. 100 μ L Stop solution
11. Measure at 450nm

...distributed by:

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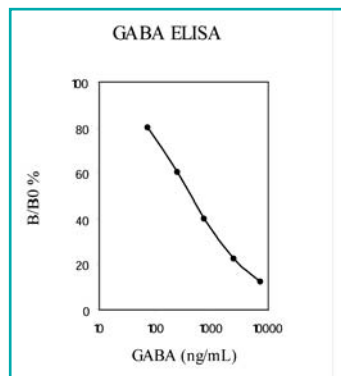
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...new GABA ELISA

featuring patent pending extraction technology

Validation:

Typical Standard Curve



Recoveries:

Sample	Recovery
Motor cortex	Mean recovery: 88 % SD=7.9; CV=9.0 R ² =0.999
Spinal cord Lumbar region	Mean recovery: 87 % SD=3.6; CV=4.1 R ² =0.997
Sample	Linearity
Hippocampus	Mean linearity: 105 % SD=8.2; CV=7.8 R ² =0.997

Measured Rat sample*:

Tissue sample	Measured conc. (pmol/mg wet weight tissue)
Motor cortex	1137 ± 65
Somatosensory cortex	1379 ± 115
Hippocampus	1719 ± 219
Cervical sc region	484 ± 65
Thoracic sc region	395 ± 19
Lumbar I & II sc region	540 ± 80
Lumbar III – VI sc region	737 ± 32
Sacral sc region	687 ± 48

*Samples were kindly provided by E. Ziemińska, Nencki Institute, Poland

Ordering information

GABA ELISA Kit		
Product	Cat.No.	Price CHF
Kit: GABA Sample Size: 300 µl serum, or any biological fluid Standards: 15 - 1 500 ng/ml Sensitivity: 7.5 ng/ml Format: 96 wells	BTBA-E-2500	1040,00

Serotonin RIA and ELISA

for research

Advantages of BIOTREND Serotonin Kits:

- Total assay times under 2 hours
- Fast Track ELISA is easily automatable
- Standards in conformance with GLP
- No interference by medical drugs
- Wide standard ranges, convenient measurement of pathological samples without predilution
- Quality- produced according to DIN ISO EN 13485:2003 and 9001:2000 use of ion-exchange columns

Principle of the ELISA: The competitive Serotonin ELISA kit uses the microtiter plate format. Serotonin is bound to the solid phase of the microtiter plate. Acetylated serotonin and solid phase bound serotonin compete for a fixed number of antiserum binding sites. When the system is in equilibrium, free antigen and free antigen-antiserum complexes are removed by washing. The antibody bound to the solid phase serotonin is detected by anti-rabbit/peroxidase. The substrate TMB/peroxidase reaction is read at 450 nm. The amount of antibody bound to the solid phase serotonin is inversely proportional to the serotonin concentration of the sample.

Principle of the RIA: The assay procedure follows the basic principle of radioimmunoassays, involving competition between a radioactive and a non-radioactive antigen for a fixed number of antibody binding sites. The amount of ¹²⁵I-labelled antigen bound to the antibody is inversely proportional to the analyte concentration of the sample. When the system is in equilibrium, the antibody bound radioactivity is precipitated with a second antibody in the presence of polyethylene glycol. The precipitate is counted in a gamma counter. Quantification of unknown samples is achieved by comparing their activity with a reference curve prepared with known standards.

Ordering information

Serotonin ELISA Kit		
Product	Cat.No.	Price CHF
Kit: Serotonin Sample Size: 1 - 100 µl, all biological fluids, CSF and Platelet Free Plasma Standards: 0.015 - 2.5 ng/ml Sensitivity: 50 pg/ml Format: 96 wells	BTBA-E-5900	815,00

Serotonin RIA Kit		
Product	Cat.No.	Price CHF
Kit: Serotonin Sample Size: 25 µl serum, urine, platelets, 100 µl CSF, PFP Standards: 15 - 2,500 ng/ml Sensitivity: 6.7 ng/ml serum, urine, platelets, 0.3 ng/ml CSF, PFP Format: 100 tubes	BTBA-R-8900	515,00

Endocrinology Assays

ELISA and RIA for research

Advantages:

- High diagnostic sensitivity and specificity
- Easily adaptable to most common automated open systems
- Colour-coded kit reagents for easy recognition
- Breakable 96 wells, economical benefit
- Controls and calibrators included
- 12 months shelf life

Available Kit Categories:

- Metabolism
- Thyroid Function
- Androgen Assessment
- Fertility and Reproduction
- Salt/Mineral Balance
- Tumor Markers
- Oxidative Stress
- Saliva Assays

Coming Soon:

- Renin ELISA
- Acetylcholine Receptor Auto-Antibody RIA

Ordering information

Metabolism (ME)

Product		Cat.No.	Price CHF
C-Peptide	96 wells	BTME-E-0100	338,00
Growth Hormone (hGH)		BTME-E-0200	323,00
Leptin		BTME-E-0300	440,00
IGFBP-1		BTME-E-0400	423,00
IGF-1		BTME-E-0500	661,00
Insulin		BTME-E-0900	393,00
Free Insulin RIA	100 tubes	BTME-R-0100	Enquire
Total Insulin RIA		BTME-R-0200	Enquire
Serum Insulin RIA		BTME-R-0300	Enquire

Androgen Assessment (AA)

Product		Cat.No.	Price CHF
Androstendione		BTAA-E-1000	347,00
Androstenediol-Glucuronide		BTAA-E-1500	372,00
DHEA-S		BTAA-E-1100	339,00
DHEA		BTAA-E-1600	323,00
DHT		BTAA-E-1700	396,00
SHBG		BTAA-E-1200	430,00
Testosterone		BTAA-E-1300	354,00
free Testosterone		BTAA-E-1400	396,00

Fertility and Reproduction (FR)

Product	Cat.No.	Price CHF
hCG	BTFR-E-2200	309,00
Estradiol	BTFR-E-2000	339,00
Estriol, free	BTFR-E-2100	377,00
Estrone	BTFR-E-2300	396,00
FSH	BTFR-E-2400	309,00
LH	BTFR-E-2600	309,00
Pregnenolone	BTFR-E-2700	396,00
PAPP-A	BTFR-E-3000	Enquire
Progesterone	BTFR-E-2500	363,00
17-OH-Progesterone	BTFR-E-2800	367,00
Prolactin	BTFR-E-2900	309,00

Thyroid Function (TF)

Product	Cat.No.	Price CHF
TSH	BTFE-E-3000	186,00
FT3	BTFE-E-3100	186,00
FT4	BTFE-E-3200	186,00
T3	BTFE-E-3300	186,00
T4	BTFE-E-3400	186,00
antiTG	BTFE-E-3500	218,00
antiTPO	BTFE-E-3600	239,00
Thyroglobulin	BTFE-E-3700	218,00

Tumor Markers (TM)

Product	Cat.No.	Price CHF
AFP	BTTM-E-4000	309,00
CEA	BTTM-E-4100	426,00
PAP	BTTM-E-4200	596,00
CA 125	BTTM-E-4300	491,00
CA 15-3	BTTM-E-4400	491,00
CA 19-9	BTTM-E-4500	491,00
β2-Microglobulin	BTTM-E-4600	353,00
h-NSE	BTTM-E-4700	540,00
S100B	BTTM-E-4800	612,00
Chromogranin A	BTTM-E-9000	708,00

Mineral/Salt balance (MS)

Product	Cat.No.	Price CHF
Cortisol, plasma/serum	BTMS-E-5000	325,00
Cortisol, urine	BTMS-E-5100	435,00
Aldosterone	BTMS-E-5200	420,00
Renin Activity	BTMS-E-5300	629,00
Corticosterone	BTMS-E-5400	463,00

Saliva Assays (SA)

Product	Cat.No.	Price CHF
Cortisol	BTSA-E-6000	416,00
Testosterone	BTSA-E-6100	369,00
Estradiol	BTSA-E-6200	386,00
Progesterone	BTSA-E-6300	416,00
17-OH-Progesterone	BTSA-E-6400	416,00
DHEA-S	BTSA-E-6500	416,00
Estriol	BTSA-E-6600	416,00
α-Amylase	BTSA-P-6900	416,00

Disease Markers (DM)

Product	Cat.No.	Price CHF
TAC (total anti-oxidative capacity)	BTDM-P-4100	442,00
TOC (total oxidative capacity)	BTDM-P-4200	367,00
EPA (endogenous peroxidase activity)	BTDM-P-4300	564,00
oxLDL-IgG	BTDM-E-4400	280,00
oxLDL-IgM	BTDM-E-4500	280,00
C-reactive Protein, high-sensitive	BTDM-E-4600	280,00
Neopterin	BTDM-E-4700	442,00
AChRAb RIA	BTDM-R-4700	725,00

Dopamine Research ELISA

for Small Sample Volumes

Advantages:

- Test any biological fluid without any interferences!
- 48 duplicate determinations or 96 single
- Flexible protocol for various sample volumes and types
- Test Epinephrine and Norepinephrine in combination with Dopamine

Ordering information

High sensitivity Research ELISA Kits		
Product	Cat.No.	Price CHF
Kit: Epinephrine Sensitivity: 3.9 pg/ml (dep. on sample vol.) Standard range: 0.45 - 45 ng/ml Volume: 1 - 750 µl, all biological fluids	BTBA-E-5100	854,00
Kit: Norepinephrine Sensitivity: 2.6 pg/ml (dep. on sample vol.) Standard range: 0.45 - 45 ng/ml Volume: 1 - 750 µl, all biological fluids	BTBA-E-5200	854,00
Kit: Dopamine Sensitivity: 9.1 pg/ml (dep. on sample vol.) Standard range: 0.9 - 90 ng/ml Volume: 1 - 750 µl, all biological fluids	BTBA-E-5300	854,00
Kit: Epinephrine/Norepinephrine Sensitivity: Adrenaline: 8.1 pg/ml Noradrenaline: 5.4 pg/ml (dep. on sample vol.) Standard range: 0.45 - 45 ng/ml Volume: 1 - 750 µl, all biological fluids	BTBA-E-5400	1028,00
Kit: Norepinephrine/Dopamine Sensitivity: Noradrenaline 5.4 pg/ml Dopamine 18.9 pg/ml (dep. on sample vol.) Standard range: 0.45 - 45 ng/ml Volume: 1 - 750 µl, all biological fluids	BTBA-E-5500	1028,00
Kit: Epinephrine/Norepinephrine/Dopamine Sensitivity: Adrenaline: 12 pg/ml plasma Noradrenaline: 8 pg/ml plasma Dopamine: 28 pg/ml plasma (dep. on sample vol.) Standard range: 0.45 - 45 ng/ml Volume: 1 - 750 µl, all biological fluids	BTBA-E-5600	1301,00

Product specification:

Design: This highly specific test uses a combination of affinity extraction. Enzymatic and chemical derivatization and specific ELISA. Flexible sample extraction protocol. Competitive assay design using ligand-coated ELISA plates.

Sample Types:

All biological samples including tissue extracts and other biological fluids

Sample Volume: 1 - 750 µl

Total Assay Time: Extraction and acetylation 4 hours and ELISA overnight

Standard Range: 0.9 - 90 ng/ml

Sensitivity: 8.3 pg/sample

Storage: 2 - 8 °C

Kit: 96 Determinations

Research Applications: This kit can be used with any biological fluid from any species or source.

Catecholamine Kits

for Research

Advantages:

- Flexible test systems for plasma, urine and other biological fluids.
- Our catecholamine test kits can be used in research with almost any biological fluid, including tissue homogenates and micro-dialysates.
- New Fast Track formats reduce incubation times
- Freedom from drug interferences
- Elegant and efficient extraction method
- Lyphocheck controls available from BioRad® for epinephrine, norepinephrine, and dopamine
- Excellent sensitivity / specificity
- also RIA kits available (shelf live 15 weeks) (higher counts lead to better signals)
- Quality- produced according to DIN ISO EN 13485:2003 and 9001:2000
- Excellent HPLC correlation!

Available Kits:

- 5000 Series - High Sensitivity Research Kits for any biological fluid (order information see left)