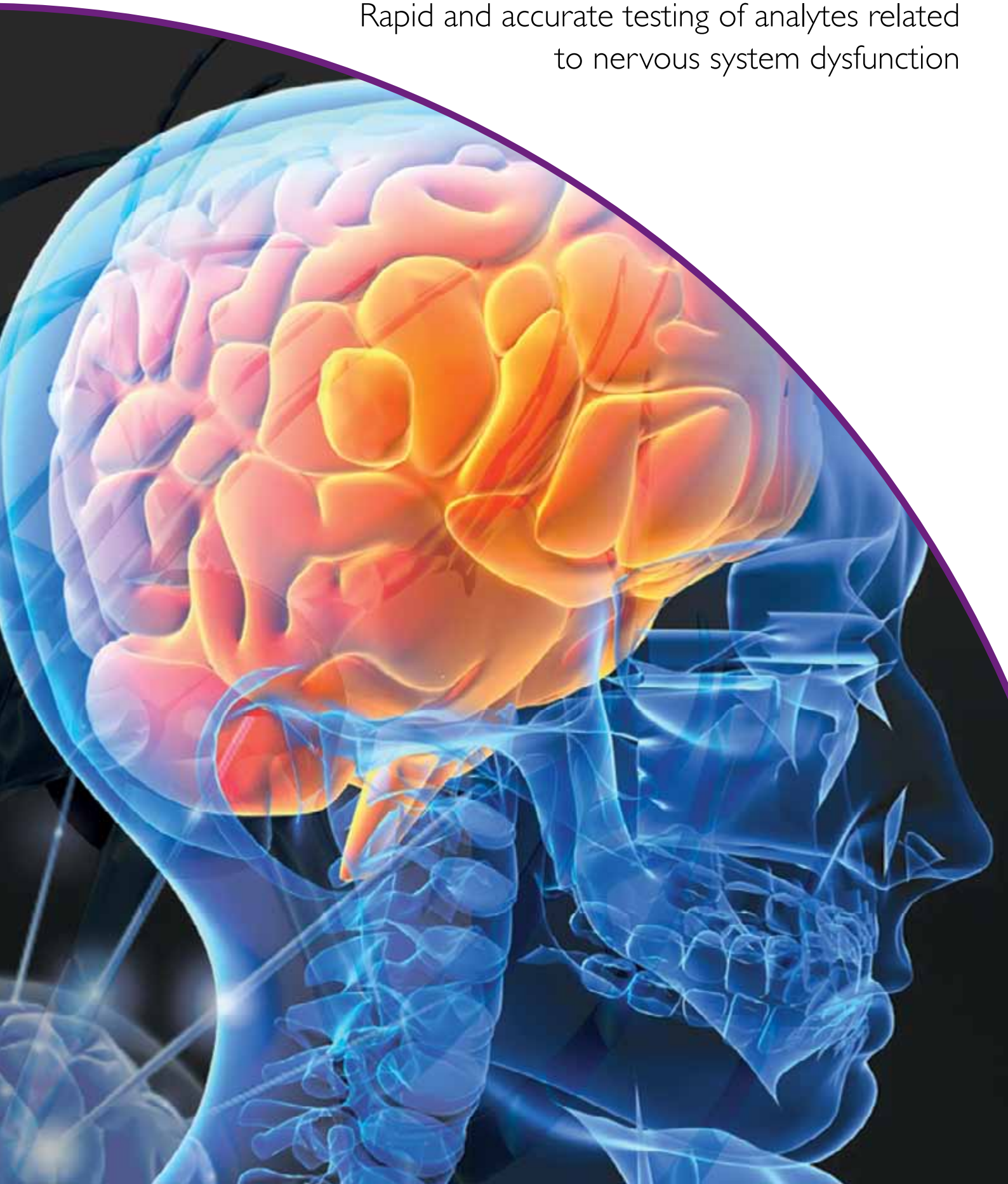


**RANDOX**

## Cerebral Arrays

Rapid and accurate testing of analytes related  
to nervous system dysfunction



# Cerebral arrays

For the simultaneous measurement of analytes associated with nervous system dysfunction

Randox Cerebral arrays are designed for the simultaneous measurement of analytes associated with nervous system dysfunctions such as cerebrovascular disease, Alzheimer's disease and Multiple Sclerosis (MS).



## Key Benefits

- Measures up to six biomarkers simultaneously
- Human serum, plasma and cerebrospinal fluid (CSF) samples
- Small sample volume, just 35 - 100µl
- For use with fully and semi-automated analysers
- Simple sample preparation
- Wide measuring range
- Fast throughput
- Excellent sensitivity, precision and recovery

## Clinical Significance

Neurological disorders can affect the central, somatic and autonomic nervous system. At the molecular level, many analytes have been found to be involved in the pathophysiology of this complex interacting system.

## Cerebral Array I

**Brain-Derived Neurotrophic Factor (BDNF)** – A neurotrophin; widely distributed throughout the CNS. It limits neurodegenerative damage after brain injury and is a good marker for stroke detection.

**Glial Fibrillary Acidic Protein (GFAP)** – Specific marker for astrocyte damage. It is significantly elevated following stroke onset. The release pattern of GFAP is dependent on the subtype and pathophysiology of stroke.

**Heart Type Fatty Acid Binding Protein (H-FABP)** – Involved in lipid transport and released rapidly from damaged cells. It is an early marker of cardiac injury, but also shows elevated levels following stroke.

**Interleukin-6 (IL-6)** – IL-6 levels correlate with the extent of brain lesion in ischemic and haemorrhagic stroke.



## Performance outline on Evidence Investigator

### Cerebral Array I

Analyte	Calibration range*	Sensitivity
BDNF	0-7500pg/ml	0.59pg/ml
GFAP	0-120ng/ml	0.18ng/ml
H-FABP	0-100ng/ml	0.29ng/ml
IL-6	0-550pg/ml	0.64pg/ml

07/346,380/305

\*This is a typical range, which may vary with batch of calibrators

Recovery range for three different concentration levels: 89 - 107%  
Intra-assay and inter-assay precision <15%

07/354,382/305

## Cerebral Array II

**C-reactive protein (CRP)** – Fastest acting acute phase protein. While high levels indicate infection/inflammation, mildly increased levels are associated with cardiovascular disease.

**D-dimer** – Mediates both clot formation and fibrinolysis. Elevated levels are dependent on the type of stroke and correlate with the degree of damage and neurological outcome.

**Neutrophil Gelatinase-Associated Lipocalin (NGAL)** – Secreted from specific granules of human neutrophils upon cell activation; prolonged elevation in serum and plasma after stroke.

**Neuron Specific Enolase (NSE)** – A glycolytic enzyme and readily released into the CSF and blood after tissue damage. Blood levels are elevated in stroke and seem to correlate with the extent of infarcted tissue.

**Soluble Tumour Necrosis Factor Receptor I (sTNFRI)** – A soluble receptor shed from the cell surface; elevated levels are found in acute ischemic stroke. It could be a significant predictor of cardiovascular mortality after ischemic stroke.

**Thrombomodulin (TM)** – An endothelial cell membrane injury marker; decreased levels found in acute atherothrombotic and cardioembolic infarctions. Levels increase with age and hypertension and may be proactive against brain infarction.

### Cerebral Array II

Analyte	Calibration range*	Sensitivity
CRP	0-12mg/l	0.67mg/l
D-dimer	0-2000ng/ml	2.10ng/ml
NGAL	0-2000ng/ml	17.80ng/ml
NSE	0-200ng/ml	0.26ng/ml
sTNFRI	0-50ng/ml	0.24ng/ml
TM	0-200ng/ml	0.50ng/ml

08/224/318

\*This is a typical range, which may vary with batch of calibrators

Recovery range for three different concentration levels: 82.7 - 105.5%  
Intra-assay and inter-assay precision <15%

08/216,217,218,221,222/318

# Biochip Systems



## —evidence— INVESTIGATOR

- Semi-Automated
- Medium throughput
- Medium sized laboratories
- Research

### Ordering Details

#### Product Information

Cerebral Array I: EV3573

Cerebral Array II: EV3637

Multi-analyte calibrators included with Evidence Investigator:

Multi-analyte calibrators and controls available for both arrays.

Van Willebrand factor ELISA:VW3457

### Complementary arrays for nervous system dysfunction research :

- Cytokine arrays
- Adhesion molecules arrayw
- Cardiac arrays

**Cerebral Arrays are for research purposes only**



## evidence

- Fully Automated
- Floor standing
- Large throughput laboratories
- Research and clinical arrays

### Ordering Details

#### Product Information

Cerebral Array I: EV3634

### Examples of Research Applications for Cerebral Arrays

Cerebral Arrays have been used in a number of studies with independent publications shown in the table below.

Condition	Research Application	References
Amateur boxers	Observational case-control study. Measurement of analytes in serum.	Zetterberg, H. et al. (2009) Brain Injury 23: 723-726
Down syndrome	Investigation of the relationship between age and BDNF levels in Down syndrome.	Dogliotti, G. et al. (2010) Immunity & Ageing 7: 2
Alzheimer's disease, vascular dementia, frontotemporal dementia, dementia with Lewy bodies, mild cognitive impairment.	Measurement of analytes in plasma and CSF in patients and comparison with cognitively healthy controls.	Rosèn, C. et al. (2011) Front. Ageing Neurosci 3:1

# RANDOX

Randox Laboratories Limited, 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom  
**T** +44 (0) 28 9442 2413 **F** +44 (0) 28 9445 2912 **E** marketing@randox.com **I** www.randox.com



LT168 DEC 11