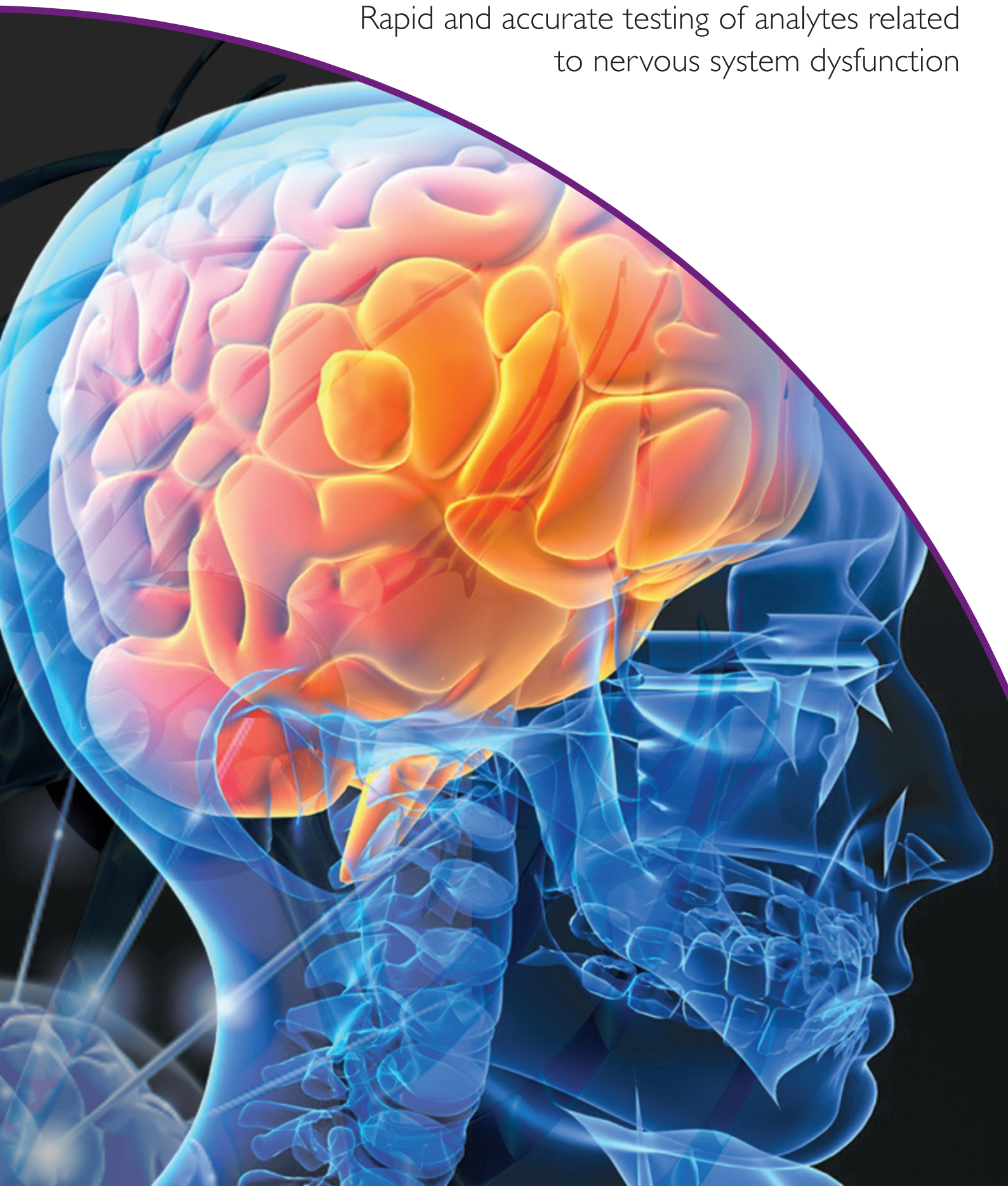




RANDOX

Cerebral Arrays

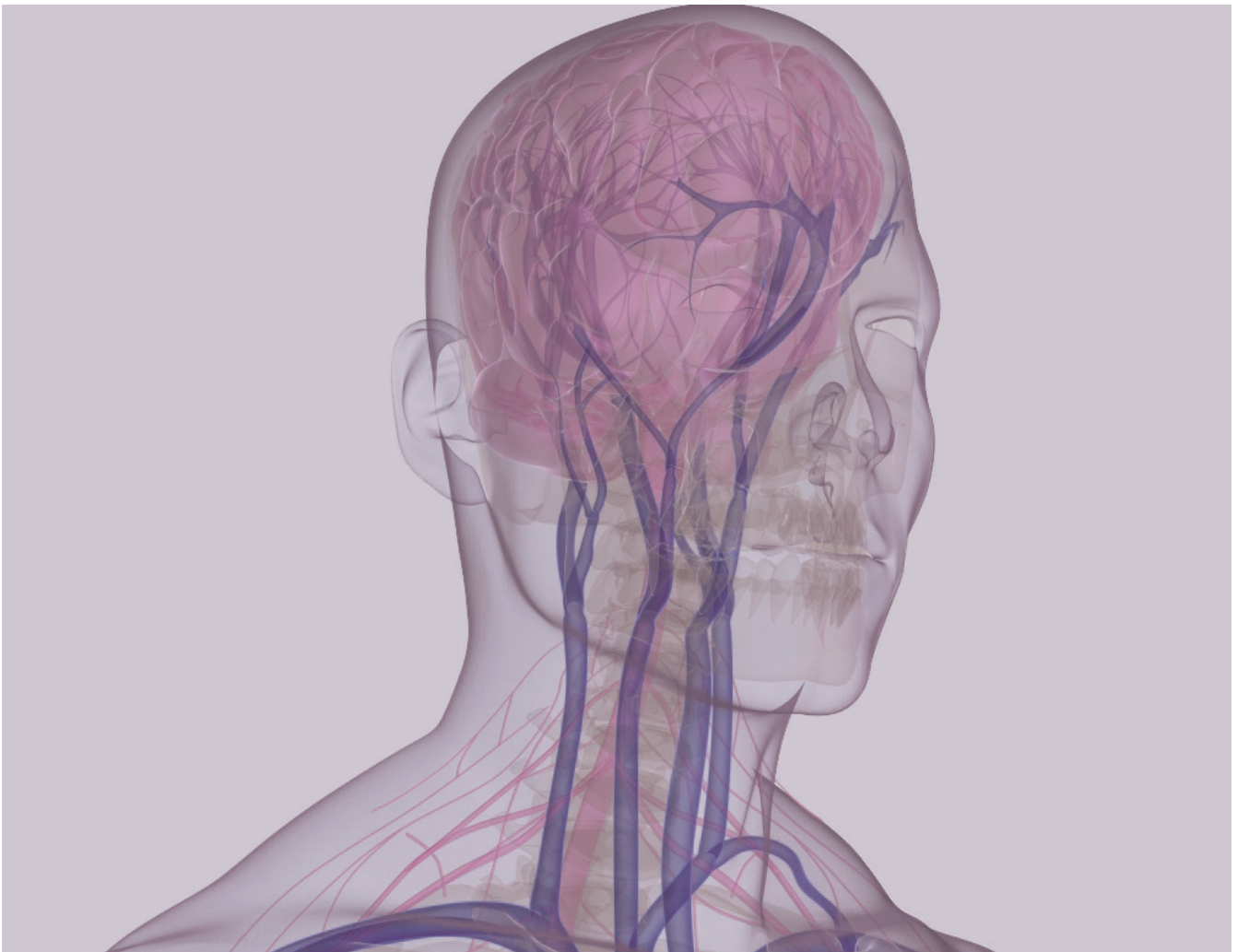
Rapid and accurate testing of analytes related
to nervous system dysfunction



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 five 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 central nervous system. 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.



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.

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

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

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

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.	Ros��n, C. et al. (2011) Front. Ageing Neurosci. 3:1.
End-stage renal disease (ESRD)	Measurement of analytes in plasma in patients and comparison with controls	Davis, R. et al. (2011) Clin. Appl. Thromb. Hemost. 17: E218
Bladder cancer (hematuria)	Biomarkers in multivariate algorithms for diagnosis	Abogunrin, F. et al. (2012) Cancer: 118(10): 2641-2650. Duggan, B. et al. (2012) Cancer: 118(22):5720. Emmert-Streib, F., et al. (2013) BMC Med. 11(1): 12

Biochip Systems

Complementary arrays for nervous system dysfunction research :

- Cytokine arrays
- Adhesion molecules array
- Cardiac array



evidence INVESTIGATOR

- Semi-Automated
- Bench top
- Medium sized laboratories
- Research

Ordering Details

Product Information

Cerebral Array I: EV3573
Cerebral Array II: EV3637

Cerebral Array I Tri-level Controls: CAB5008
Cerebral Array II Tri-level Controls: CBB5009

Multi-analyte calibrators included with Evidence Investigator.



evidence

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

Ordering Details

Product Information

Cerebral Array I: EV3634
Cerebral Array I Calibrators: EV3625

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Cerebral Arrays are for research purposes only



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