

Neurotrophins; the rising stars of biomarker research

In the past few years there has been an increased interest in the potential of neurotrophins (a family of growth factors that consist of four members Nerve Growth Factor (NGF), brain-derived neurotrophic factor (BDNF), neurotrophin (NT)-3 and NT-4/5) as biomarkers in various fields including those of psychiatry, cancer and lung disease.

Could these neurotrophins be the elusive biomarkers that you seek in your research?

A selection of publications highlighting neurotrophins as potential biomarkers in various disease states are featured below:

Disease state	Potential biomarker	Effect	Paper
Chronic stress and disease conditions	BDNF	Supports an association between increasing levels of serum BDNF and forms of stress, including chronic muscular stress and disease conditions such as Myofascial Pain Syndrome or Fibromyalgia	Polacchini et al., 2018
Alzheimer's disease (AD)	BDNF	Supports an association between decreasing levels of BDNF and the progression of AD	Qin et al., 2017
Prostate Cancer (PC)/ Benign Prostatic Hyperplasia (BPH)	BDNF	High expression of BDNF in prostate tissue of PC and BPH patients	Bronzetti et al., 2008
Lung Cancer	NGF, BDNF	Typical human pulmonary carcinoid tumors express NGF to a greater extent than atypical carcinoids (which express more BDNF)	Ricci et al., 2009
Bronchopulmonary Dysplasia (BPD)	BDNF	Pre term BDP neonates have significantly lower serum BDNF than preterm control group	Simpson et al., 2017
Asthma	NGF, BDNF, NT3	Significantly increased NGF, BDNF and NT3 levels in bronchoalveolar lavage fluid from allergic bronchial asthma patients after segmental allergen provocation	Virchow et al., 1998
Bipolar disorder	BDNF	Plasma BDNF levels are significantly reduced in manic and depressive patients	Fernandes et al., 2015
Overactive Bladder (OAB)	NGF, BDNF	Urinary BDNF and NGF were found to be elevated in patients with OAB as compared to controls. Urinary BDNF levels correlated with OAB symptom severity	Wang et al., 2014

If you are quantifying just one neurotrophin in your research, you maybe missing out on important data!

'Biosensis' Multi-Neurotrophin Rapid™ Screening Kits allows estimation of multiple neurotrophins (NGF, BDNF, NT3, NT4/5) with the precision, accuracy and ease you have enjoyed when using our full-size Rapid™ ELISA kits. Catalog No. [BEK-2227](#) (Human), [BEK-2231](#) (Mouse), [BEK-2232](#) (Rat).

Or kits offer:

- High sensitivity
- It's quick-Get results within 4 hours
- Uses low sample volumes - perfect when samples are precious

Some recent publications in quality journals using our Human kit:

- [Carnevale G, et al. \(2018\)](#) J Tissue Eng Regen Med Application: Supernatant of human dental pulp stem cells (hDPSCs).
- [Lindsay SL, et al. \(2016\)](#) Stem Cell Reports. 6(5):729-42 Application: MSC-conditioned medium/cell supernatant