

Endocrine Array

Simultaneous determination of multiple hormones in a single sample



Endocrine Array

For hormone profiling with a single sample

The Randox Endocrine Array has been developed to expand the biochip portfolio to include four major hormones important in human homeostasis.

Cortisol, dehydroepiandrosterone-sulphate (DHEAS) and 17α hydroxyprogesterone (17α OHP) are produced in the adrenal glands, the cortisol/DHEAS ratio regulates multiple body functions and has been found to be a better predictor of health outcomes than the level of either hormone alone.¹ A positive association between cortisol/DHEAS ratio and metabolic syndrome has been reported.² 17α OHP is the immediate precursor to 11-desoxycortisol, which is the precursor of cortisol. As 11-desoxycortisol is produced from 17α OHP by 21-hydroxylase, the measurement of

17α OHP is an indirect measurement of 21-hydroxylase activity. In 95% of cases of congenital adrenal hyperplasia, 21-hydroxylase deficiency is the underlying cause. Leptin is a hormone predominantly produced by adipocytes. In addition to its effects in energy homeostasis, leptin regulates neuroendocrine function and immune function, hematopoiesis, angiogenesis and bone development. Leptin is associated with mechanisms regulating puberty onset, fertility and pregnancy in various species.³

Analyte	Function	Associated conditions
Cortisol (CORT)	- Adrenal gland function - Affects metabolism and immune system	- Stress - Hypoglycaemia - Nutritional deprivation - Adrenal/pituitary tumours - Cushing's syndrome - Addison's disease - Congenital Adrenal Hyperplasia (CAH)
Dehydroepiandrosterone-sulphate (DHEAs)	- Adrenal gland function - Role in immune and stress response	- Adrenal hirsutism and virilism - Adrenal tumours - Alopecia - Congenital Adrenal Hyperplasia (CAH)
17α Hydroxyprogesterone (17α OHP)	- Adrenal gland function - Role in fertility disorders	- Congenital Adrenal Hyperplasia (CAH) - Hirsutism/menstrual disturbances
Leptin (LEPT)	- Maintenance of body weight and energy	- Anorexia nervosa - Hematopoiesis - Adrenal cortex function - Bone development - Immunoregulation

Endocrine Array

- Cortisol (CORT)
- Dehydroepiandrosterone-sulphate (DHEAS)
- 17α Hydroxyprogesterone (17α OHP)
- Leptin (LEPT)

Benefits

- Multiple results from one single sample, providing a more complete patient profile
- Suitable for human serum or plasma samples
- Chemiluminescent immunoassays
- Small sample volume (25µl)
- Excellent analytical performance
- Biochips are ready-to-use
- Multi-analyte controls and calibrators available
- Fully and semi-automated analysers available

Performance outline on Evidence Investigator

Analyte	Unit	Assay range*	Sensitivity
CORT	ng/ml	0 - 800	5.88
DHEAs	µg/ml	0 - 10	0.003
17αOHP	ng/ml	0 - 20	0.10
LEPT	ng/ml	0 - 100	0.64

09/122,131/382

*The assay range may vary with batch of calibrators

Precision

Typical intra-assay precision: (n=20) <12%

Typical inter-assay precision: (n=20) ≤15%

09/134,189/382

Biochip Systems



— evidence — INVESTIGATOR

- Semi-automated
- 702 tests in 70 minutes
- Medium size laboratories
- Medium throughput
- Wide test menu



evidence

- Fully automated
- 1,980 tests per hour
- Large laboratories
- High throughput
- Wide test menu

Complementary arrays available from Randox

Product	Cat. No.
Endocrine Array (Evidence)	EV3711
Endocrine Array (Evidence Investigator)	EV3714
Endocrine Array Calibrators	EV3712
Endocrine Array Controls	EV3713

- Cytokine Arrays
- Fertility Hormone Array
- Metabolic Syndrome Arrays
- Thyroid Arrays

References

1. Butcher SK *et al.* Raised cortisol: DHEAS ratios in the elderly after injury: potential impact upon neutrophil function and immunity. *Aging Cell*. 2005, 4(6):319-324.
2. Phillips AC *et al.* Cortisol, DHEAS, their ratio and the metabolic syndrome: evidence from the Vietnam Experience Study. *Eur. J. Endocrinol.* 2010, 162(s):919-923.
3. Henson MC and Castracane VD. Leptin in pregnancy: an update. *Biol.Reprod.* 2006, 74(2):218-229.

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The Endocrine Array is for research purposes only.

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