

# Thresholds of Biotin tolerance within the Elecsys® portfolio

Assay	Biotin* (nmol/L)	Biotin* (ng/mL)	Assay	Biotin* (nmol/L)	Biotin* (ng/mL)
ACTH <sup>1</sup>	246	60	Digitoxin <sup>2</sup>	205	50
AFP <sup>1</sup>	246	60	Digoxin <sup>2</sup>	409	100
AMH <sup>1</sup>	123	30	Estradiol III <sup>2</sup>	147	36
Anti-CCP <sup>4</sup>	123	30	Everolimus <sup>2</sup>	287	70
Anti-HAV <sup>2</sup>	205	50	Ferritin <sup>1</sup>	205	50
Anti-HAV IgM <sup>3</sup>	205	50	Folate III <sup>2</sup>	86.1	21
Anti-HBc <sup>2</sup>	123	30	Folate RBC <sup>2</sup>	86.1	21
Anti-HBc IgM <sup>3</sup>	409	100	free PSA <sup>1</sup>	123	30
Anti-HBe <sup>2</sup>	409	100	free βhCG <sup>1</sup>	123	30
Anti-HBs <sup>1</sup>	123	30	FSH <sup>1</sup>	246	60
Anti-HBs II <sup>1</sup>	32.7	8	FT3 III <sup>2</sup>	286	70
Anti-HCV II <sup>1</sup>	172	42	FT4 II <sup>2</sup>	81.8	20
Anti-Tg <sup>2</sup>	246	60	GDF-15 <sup>1</sup>	205	50
Anti-TPO <sup>2</sup>	40.9	10	HBeAg <sup>1</sup>	164	40
Anti-TSHR <sup>2</sup>	41	10	HBsAg II <sup>1</sup>	164	40
C-Peptide <sup>1</sup>	246	60	HBsAg II quant <sup>1</sup>	164	40
CA 125 II <sup>1</sup>	143	35	HCG STAT <sup>1</sup>	164	40
CA 15-3 II <sup>1</sup>	409	100	HCG+β <sup>1</sup>	327	80
CA 19-9 <sup>1</sup>	409	100	HE4 <sup>1</sup>	205	50
CA 72-4 <sup>1</sup>	246	60	hGH <sup>1</sup>	123	30
Calcitonin <sup>1</sup>	163	40	HIV Ag <sup>1</sup>	409	100
Chagas <sup>1</sup>	287	70	HIV combi PT <sup>1</sup>	123	30
CEA <sup>1</sup>	491	120	HIV Duo <sup>1</sup>	115	28
CK-MB <sup>1</sup>	123	30	HSV-1 IgG <sup>1</sup>	205	50
CK-MB STAT <sup>1</sup>	123	30	HSV-2 IgG <sup>1</sup>	205	50
CMV IgG <sup>1</sup>	246	60	HTLV-I/II <sup>1</sup>	246	60
CMV IgG Avidity <sup>1</sup>	246	60	IgE II <sup>1</sup>	409	100
CMV IgM <sup>3</sup>	410	100	IL-6 <sup>1</sup>	123	30
Cortisol II <sup>2</sup>	123	30	Insulin <sup>1</sup>	246	60
Cyclosporine <sup>2</sup>	123	30	LH <sup>1</sup>	205	50
Cyfra 21-1 <sup>1</sup>	205	50	Myoglobin <sup>1</sup>	205	50
DHEA-S <sup>2</sup>	123	30	Myoglobin STAT <sup>1</sup>	205	50

\* Roche Method Sheet: The assay is unaffected by Biotin <x. <sup>1</sup> Sandwich assay, <sup>2</sup> Competitive assay, <sup>3</sup> μ-capture, <sup>4</sup> IgG-capture

Assay	Biotin* (nmol/L)	Biotin* (ng/mL)
N-MID Osteocalcin <sup>1</sup>	205	50
NSE <sup>1</sup>	409	100
PAPP-A <sup>1</sup>	123	30
PIGF <sup>1</sup>	123	30
proBNP II <sup>1</sup>	123	30
proBNP STAT <sup>1</sup>	123	30
Procalcitonin – PCT <sup>1</sup>	123	30
Progesterone III <sup>2</sup>	123	30
ProGRP <sup>1</sup>	143	35
Prolactin II <sup>1</sup>	164	40
PTH <sup>1</sup>	205	50
PTH STAT <sup>1</sup>	205	50
PTH(1-84) <sup>1</sup>	205	50
Rubella IgG <sup>1</sup>	205	50
Rubella IgM <sup>3</sup>	205	50
S100 <sup>1</sup>	205	50
SCC <sup>1</sup>	287	70
sFLT-1 <sup>1</sup>	123	30
SHBG <sup>1</sup>	246	60
Sirolimus <sup>2</sup>	287	70
Syphilis <sup>1</sup>	246	60

Assay	Biotin* (nmol/L)	Biotin* (ng/mL)
T-Uptake <sup>2</sup>	164	40
T3 <sup>2</sup>	40.9	10
T4 <sup>2</sup>	409	100
Tacrolimus <sup>2</sup>	123	30
Testosterone II <sup>2</sup>	123	30
Tg II <sup>1</sup>	123	30
TnI <sup>1</sup>	123	30
TnI STAT <sup>1</sup>	123	30
TnT <sup>1</sup>	205	50
TnT hs <sup>1</sup>	82	20
TnT hs STAT <sup>1</sup>	82	20
TnT STAT <sup>1</sup>	205	50
Toxo IgG Avidity	246	60
total P1NP <sup>1</sup>	205	50
total PSA <sup>1</sup>	246	60
Toxo IgG <sup>1</sup>	246	60
Toxo IgM <sup>3</sup>	246	60
TSH <sup>1</sup>	102	25
Vitamin B12 <sup>2</sup>	205	50
Vitamin D total <sup>2</sup>	287	70
β-CrossLaps/serum <sup>1</sup>	123	30

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According to studies, the average levels of biotin in the body are variable depending on the tested population and range from 0.1 – 0.8 ng/mL<sup>1</sup> and 0.034 – 0.089 ng/mL<sup>2</sup>.

#### References

- 1 Livaniou, E., Evangelatos, G.P., Ithakissios, D.S. et al. (2006). Serum Biotin Levels in Patients Undergoing Chronic Hemodialysis Nephron. 46, 331–332.
- 2 European Commission. Opinion of the Scientific Committee on Food on the Tolerable Upper Intake Level of Biotin 2001. Available at: [http://ec.europa.eu/food/fs/sc/scf/out106\\_en.pdf](http://ec.europa.eu/food/fs/sc/scf/out106_en.pdf) (last accessed July 2016).

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