

**Biotin Interference in Certain Immunoassays performed at  
Hendrick Regional Laboratory  
HMC Laboratory and Satellite ED Laboratory**

**Interference on testing performed at the Satellite ED Laboratory**

Analyte	Immunoassay Format	Analyte Concentration	Biotin Test Level (ng/mL)				
			50	100	250	500	1200
Free T3	Competitive	2.92 pg/mL	NA	2.5	20.9	293.9	Above AR
		7.79 pg/mL	NA	6.8	57.7	Above AR	Above AR
Free T4	Competitive	1.1 ng/dL	NA	-3.6	43.7	Above AR	Above AR
		3 ng/dL	6.1	13.1	90.3	Above AR	Above AR
Troponin	Sandwich	1.2 ng/mL	NA	-5.6	-26.3	-68.8	-99.0
TSH	Sandwich	0.3 µIU/mL	NA	-3.0	-10.4	-32.5	-93.6
		8 µIU/mL	NA	-3.5	-9.9	-39.9	-99.4

\*\*Above AR = Above Assay Range

## **Interference on testing performed at the HMC Laboratory**

Analyte	Immunoassay Format	Analyte Concentration	Biotin Test Level (ng/mL)					
			50	100	250	500	1200	1500
			% Bias					
HCG	Sandwich	25 mIU/mL	NA	0.8	0.8	0.8	-3.1	-7.0
Troponin	Sandwich	1.5 ng/mL	NA	-6.2	-27.8	-90.8	Below AR	
Digoxin	Competitive	0.4 ng/mL	NA	-1.5	-1.0	2.5	87.9	
		2.0 ng/mL	NA	-1.3	-0.8	1.5	25.7	
Ferritin	Sandwich	20 ng/mL	NA	-0.1	-1.6	-4.5	-16.8	
Folate	Competitive	2.9 ng/mL	NA	0.0	8.8	48.2	Above AR	
Free T3	Competitive	5.5 pg/mL	7.7	18.8	110.8	Above AR	Above AR	
Free T4	Competitive	1.4 ng/dL	NA	1.5	8.4	37.6	Above AR	
CPK MB	Sandwich	5 ng/mL	NA	2.0	-6.0	-12.4	-35.2	
Myoglobin	Sandwich	115 ng/mL	NA	-0.3	-0.7	-2.0	-4.6	-9.5
TSH	Sandwich	4.32 µIU/mL	NA	-5.8	-18.2	-56.2	-99.1	
		200 pg/mL	NA	9.5	32.5	108.6	Above AR	
Vitamin B12	Competitive	1000 pg/mL	NA	0.2	5.2	19.0	Above AR	

\*\*Above AR = Above Assay Range, Below AR = Below Assay Range

## Quantitative Assays with Bias at Biotin Concentrations <1500 ng/mL

Analyte	Immunoassay Format	Analyte Concentration (Target)	Biotin Test Level (ng/mL) % Bias						1200	1500
			30	50	75	100	250	500		
BNP	Sandwich	382 pg/mL	-4%	-6%	NA	-8%	-10%	-11%	-10%	-12%
		1456 pg/mL	-1%	-2%	NA	-2%	-6%	-6%	-5%	-5%
Testosterone	Competitive	83 ng/dL	3%	6%	NA	23%	86%	382%	4169%	7021%
		292 ng/dL	1%	4%	NA	19%	108%	456%	>AR*	>AR

\*>AR = Above Assay Range

#### **Qualitative Assays with a change in Interpretation at Biotin Concentrations <1500 ng/ml**

Qualitative Assays with a Change in Interpretation at Biotin Concentrations >1500 ng/mL									
Analyte	Immunoassay Format	Analyte Concentration	Units	Biotin Test Level (ng/mL)					
				50	100	250	500	1200	1500
Hepatitis A IgM Ab	Sandwich	0.63 (Negative) 2.66 (Positive) (Equivocal 0.8 – 1.2)	S/CO	Negative Positive	Negative Positive	Negative Positive	Negative Positive	Negative Equivocal	Negative Equivocal
Hepatitis B core IgM Ab	Sandwich	0.16 (Negative) 2.31 (Positive)	Index	Negative Positive	Negative Positive	Negative Positive	Negative Positive	Negative Positive	Negative Positive
Hepatitis A Total Ab	Competitive	0.30 (Negative) 1.77 (Positive)	Index	Negative Positive	Negative Positive	Positive Positive	Positive Positive	Positive Positive	Positive Positive