

Analytical Characteristics and Clinical Performance of Anti-Müllerian Hormone Immunoassay on the ADVIA Centaur® System: A Comparison with Other Chemiluminescent Methods

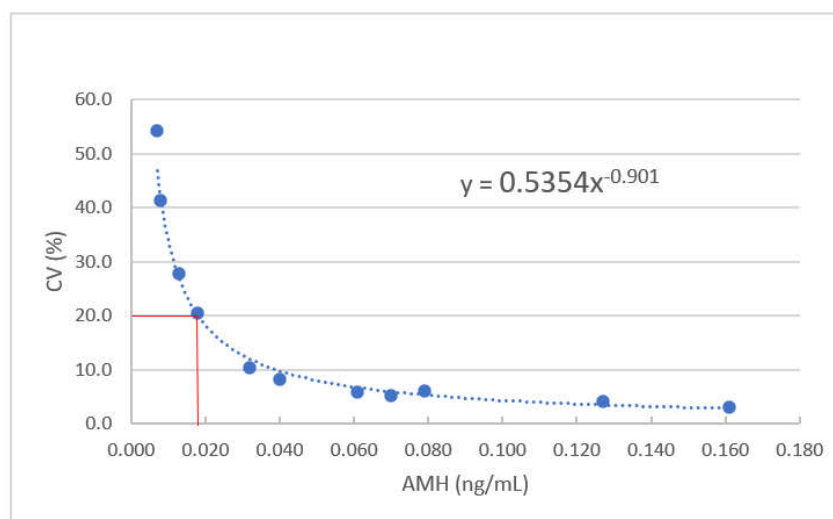
Jelena Bogdanovic, Kaitlin Freeman, Chadwick Brown, Rachel Singleton, Millie Behera, Jeanne E. O'Brien, Edward Zbella, Robert H Christenson

Supplemental Materials

Supplemental Table S1. Summary of analytical sensitivity evaluation.

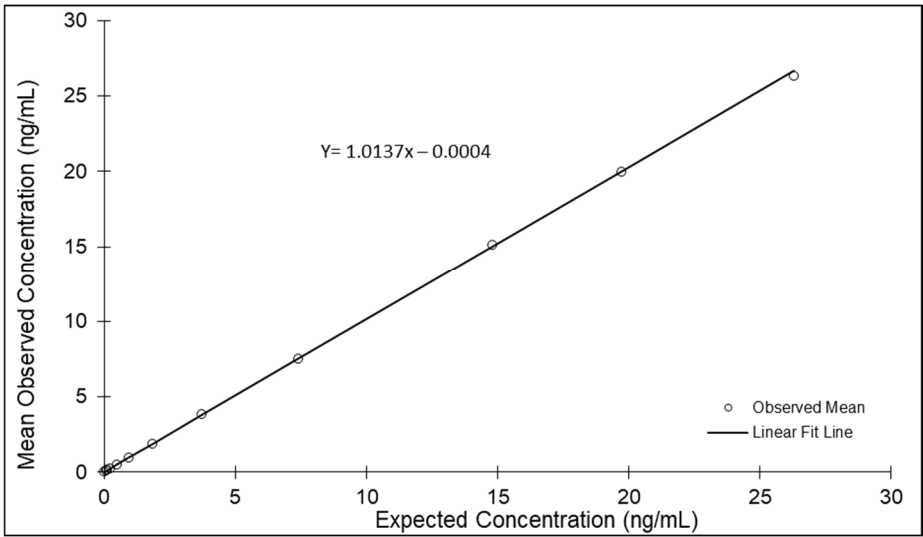
Attribute	Observed per Reagent Lot	Highest Observed (ng/mL)	Manufacturer Claim (ng/mL)
LoB	Lot 1	0.003	0.010
	Lot 2	0.000	
	Lot 3	0.003	
LoD	Lot 1	0.009	0.020
	Lot 2	0.007	
	Lot 3	0.007	
LoQ	Lot 1	0.018	0.043 ^a
	Lot 2	0.015	
	Lot 3	0.012	

Abbreviations: LoB, limit of blank; LoD, limit of detection; LoQ, limit of quantitation. ^a The manufacturer claim LoQ of 0.043 ng/mL was determined by considering both analytical and clinical assay performance data. i.e., AMH agreement with AFC in clinical sample. The lowest amount of AMH in a sample for which the clinical performance was verified and for which the within-laboratory CV is ≤ 15% is 0.043 ng/mL. For the AMH assay sold outside of the U.S, the manufacturer claim is 0.030 ng/mL.

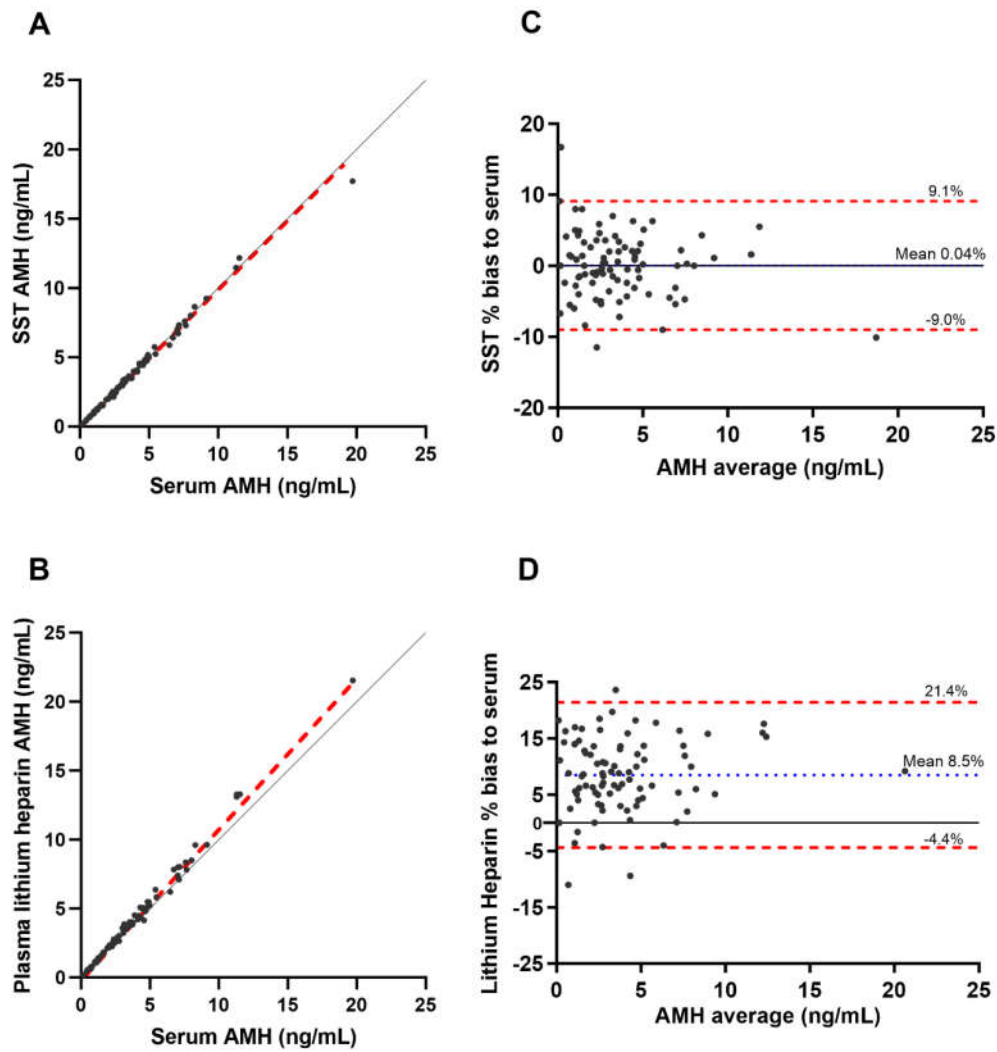


Supplemental Graph showing one example of LoD-LoQ precision profile for AMH reagent lot 1

Supplemental Figure S1. Linearity evaluation for AMH assay on the ADVIA Centaur.



Supplemental Figure S2. Comparison of tube type specimen for the ADVIA Centaur AMH assay.



Candidate Tube (y)	n	Slope (95% CI)	Intercept (95% CI)	r	Sample Range (ng/mL)
Gel-Barrier Tube (SST)	88	1.00 (0.99, 1.01)	0.003 (-0.008, 0.015)	0.997	0.110 - 19.7
Plasma, Lithium Heparin	88	1.08 (1.07, 1.10)	-0.004 (-0.020, 0.012)	0.997	0.110 - 19.7

(A-B) Weighted Deming regression analysis. Red dashed lines represent regression lines and solid gray lines represent identity lines. Regression equations slope and intercept are reported in bottom table. (C-D) Bland-Altman plots. Blue dotted lines represent mean bias. Red dashed lines indicate the limits of agreement, defined as the mean difference ± 1.96 times the standard deviation of the differences.

Supplemental Table S2. Interferences testing.

Substance	Substance Test Concentration	Substance	Substance Test Concentration
Acetaminophen	20 mg/dL (1324 μ mol/L)	Human IgG	2500 mg/dL (25.0 g/L)
Acetylcysteine	15.0 mg/dL (920 μ mol/L)	Human IgM	500 mg/dL (5.0 g/L)
Acetylsalicylic Acid (Aspirin)	65.0 mg/dL (3608 μ mol/L)	Ibuprofen	50.0 mg/dL (2425 μ mol/L)
Ampicillin sodium	100 mg/dL (2693 μ mol/L)	Levodopa	2.00 mg/dL (101 μ mol/L)
L-Ascorbic acid	3.00 mg/dL (170 μ mol/L)	Levothyroxine	0.020 mg/dL (0.258 μ mol/L)
Bilirubin, conjugated	66.0 mg/dL (783 μ mol/L)		
Bilirubin, unconjugated	39.0 mg/dL (667 μ mol/L)		
Biotin	0.350 mg/dL (14.3 μ mol/L)	Metformin hydrochloride	200 mg/dL (12,076 μ mol/L)
Cefoxitin sodium salt	250 mg/dL (5563 μ mol/L)	Methyldopa	2.00 mg/dL (83.9 μ mol/L)
Cholesterol	500 mg/dL (13.0 mmol/L)	Metronidazole	20.0 mg/dL (1168 μ mol/L)
Cyclosporine	0.500 mg/dL (4.16 μ mol/L)	Phenylbutazone	40.0 mg/dL (1296 μ mol/L)
Doxycycline hyclate	5.00 mg/dL (48.7 μ mol/L)	Rheumatoid Factor	1000 IU/mL
Folic acid	0.040 mg/dL (0.906 μ mol/L)	Rifampicin	6.00 mg/dL (73.2 μ mol/L)
Gonapeptyl (Triptorelin acetate)	0.010 mg/dL (0.073 μ mol/L)	Theophylline	10.0 mg/dL (555 μ mol/L)
Hemoglobin	1000 mg/dL (10.0 g/L)		
Heparin	500 U/dL	Total Protein	12.0 g/dL (120 g/L)
Human IgA	1800 mg/dL (18.0 g/L)	Uric acid	25.0 mg/dL (1487 μ mol/L)

The following substances do not interfere with the assay when present in serum at the concentrations indicated. Bias due to these substances does not exceed 10% at an AMH concentration of 0.782–1.38 ng/mL (5.58–9.85 pmol/L) and 5.86–7.49 ng/mL (41.8–53.5 pmol/L). This assay was not evaluated for HAMA/heterophilic antibody interference.

Supplemental Table S3. Clinical Performance of the AMH assay on each instrument tested stratified by age.

Reproductive Age	Females < 35 years of age	Females ≥ 35 years of age
Prevalence by Age (AFC >15)	66.7%	37.7%
ADVIA Centaur		
PPV ^a	72.8% (66.6, 78.3)	58.5% (50.6, 66.1)
NPV ^b	65.1% (50.2, 77.6)	89.7% (82.8, 94.0)
Beckman Access		
PPV ^a	73.2% (67.0, 78.6)	57.1% (49.2, 64.7)
NPV ^b	65.9% (51.1, 78.1)	88.6% (81.5, 93.2)
Roche Elecsys		
PPV ^a	77.3% (70.7, 82.8)	69.2% (59.9, 77.1)
NPV ^b	56.6% (45.9, 66.8)	83.2% (76.7, 88.2)

^aPPV (positive predictive value) and ^bNPV (negative predictive value) are dependent on prevalence.