MAYO CLINIC LABORATORIES

Test Definition: VBGN2

Venous Blood Gas without Coox, Blood

Overview

Useful For
Assessment of acid-base status in patients for whom arterial sampling is not indicated or would be difficult

Method Name
Potentiometry/Amperometry

NY State Available
No

Specimen

Specimen Type
Whole Blood Li Heparin

Specimen Minimum Volume
0.5 mL

Reject Due To
No specimen should be rejected.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole Blood Li Heparin	Ambient (preferred)		
	Refrigerated	1 hours	

Clinical & Interpretive

Clinical Information
pH, pCO2, and calculated bicarbonate can be used to assess acid-base status and gas exchange in the lungs (carbon dioxide retention). Assessment of oxygenation is best done with an arterial blood gas determination.

Reference Values
pO2
Not applicable

pCO2 [7]
41-51 mm Hg

pH [6]
7.32-7.43

Base Excess
Not applicable

HCO3
Not applicable

Interpretation

Patient results vary depending on the underlying medical condition and the type of therapy being received. The following assessments should be made:
-Is carbon dioxide being retained?
-Is the acid-base status normal or is there evidence of a respiratory or metabolic acidosis or alkalosis?

Cautions

Reference ranges for pCO2, bicarbonate, and base excess are for mixed venous blood. Specimens drawn from a peripheral vein will often have higher values.

Clinical Reference

1. Tobin MJ: Respiratory monitoring in the intensive care unit. Am Ref Respir Dis. 1988 Dec;138(6):1625-1642
2. McKane MH, Southorn PA, Santrach PJ, et al: Sending blood gas specimens through pressurized transport tube systems exaggerates the error in oxygen tension measurements created by the presence of air bubbles. Anesth Analg. 1995 Jul;81:179-182
3. Kraut JA, Madias NE: Approach to patients with acid-base disorders. Respir Care. 2001Apr;46(4):392-403
4. Malley MJ: Clinical Blood Gases Assessment and Intervention. 2nd ed. Elsevier Saunders; 2005
5. Ernst A, Zibrak JD: Carbon monoxide poisoning. N Eng J Med. 1998 Nov 26;339(22):1603-1608 doi: 10.1056/NEJM199811263392206
6. Burtis CA, Ashwood ER, Bruns DE, Sawyer BG, eds: Tietz Fundamentals of Clinical Chemistry. 6th ed. Elsevier Saunders; 2008
7. Clarke W, eds: Contemporary Practices in Clinical Chemistry. 2nd ed. AACC Press; 2011

Performance

Method Description

From anticoagulated whole blood, the Radiometer ABL827 and Radiometer ABL90 analyzers make quantitative measurements of pH and the partial pressures of oxygen (pO2) and carbon dioxide (pCO2). The Radiometer ABL827 analyzer applies potentiometry in the pH, pCO2, and electrolyte electrodes, and amperometry for the pO2 electrode. Bicarbonate (HCO3) and whole blood base excess (BE) are then calculated from the measured values. The Radiometer ABL90 analyzer applies potentiometry to the pH and pCO2 sensors and an optical system to the pO2 sensor. HCO3 and whole blood BE are then calculated from the measured values.(Instruction manuals: Radiometer ABL800 FLEX, Radiometer Medical A/S, Denmark, Edition J, 6/2012; Radiometer ABL90 FLEX, Radiometer Medical A/S, Denmark, Edition G, 05/2013)

PDF Report
No

Day(s) Performed
Monday through Sunday

Report Available
Same day/1 day

Specimen Retention Time
Not retained

Performing Laboratory Location
Mayo Clinic Health System in Eau Claire

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
82805

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
VBGN2	Venous Blood Gas w/o Coox, B	24339-4

Result ID	Test Result Name	Result LOINC® Value
VSITE	Venous Sample Site	20506-2
PO2V	Venous pO2	2705-2
PCO2V	Venous pCO2	2021-4
BASEX	Venous Base Excess	1927-3
HCO3B	HCO3	14627-4
PHV1	Venous pH	2746-6