



# 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, pCO<sub>2</sub>, 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

pO<sub>2</sub>

Not applicable

pCO<sub>2</sub> [7]

41-51 mm Hg

pH [6]  
7.32-7.43

Base Excess  
Not applicable

HCO<sub>3</sub>  
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 pCO<sub>2</sub>, 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 Rev 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 (pO<sub>2</sub>) and carbon dioxide (pCO<sub>2</sub>). The Radiometer ABL827 analyzer applies potentiometry in the pH, pCO<sub>2</sub>, and electrolyte electrodes, and amperometry for the pO<sub>2</sub> electrode. Bicarbonate (HCO<sub>3</sub>) and whole blood base excess (BE) are then calculated from the measured values. The Radiometer ABL90 analyzer applies potentiometry to the pH and pCO<sub>2</sub> sensors and an optical system to the pO<sub>2</sub> sensor. HCO<sub>3</sub> 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