

# Greiner Bio-One Customer Information

## VACUETTE® Homocysteine Detection Tube



Homocysteine occurs in cell metabolism as an intermediary product during the catabolisation of methionine. A higher concentration of homocysteine in the blood can increase the risk of heart attacks and strokes. Determination of homocysteine in blood plasma is applicable in many areas and contributes to the patient's individual risk profile.

The preanalytical phase is of decisive importance for the determination of the homocysteine value; after blood collection, the cellular components of blood continually release homocysteine. This process can corrupt the analysis results, causing a false increase. For this reason it is important to stabilise the sample if it is not centrifuged immediately after blood collection. Several studies have proven that blood samples in **VACUETTE®** Homocysteine Detection Tube remain stable for at least 6 hours without refrigeration. This uncomplicated sample handling method is time and cost saving for the doctor sending in the sample as well as for the laboratory.

Prior to analysis in the laboratory, the **VACUETTE®** Homocysteine Detection Tube should be centrifuged at 2000 - 2200g for 10 minutes. Please note that the homocysteine concentration analysis result must be multiplied by the factor 1.11 to compensate for the dilution by citrate. This is necessary to achieve the actual homocysteine concentration value in plasma.

### The **VACUETTE®** Homocysteine Detection Tube has following product features:

- ▶ Total homocysteine is stable for at least 6 hours at room temperature and up to 72 hours at 4°C
- ▶ Established vacuum technology for easy blood collection
- ▶ Clearly defined dilution factor (1.11)
- ▶ Centrifugation immediately after blood collection is **not** necessary
- ▶ Transport without refrigeration possible (within 6 hours of sample collection)

The new **VACUETTE®** Homocysteine Detection Tube can be ordered under this item number:

Item number	Description	Packaging
454421	<b>VACUETTE®</b> Homocysteine Detection Tube 2ml, ridged, sandwich	50 pcs. per rack 1200 pcs. per carton

P.T.O

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## VACUETTE® Homocysteine Detection Tube

When an EDTA whole blood sample is stored at room temperature, the measured homocysteine concentration can increase significantly (fig. 1). When **VACUETTE®** Homocysteine Detection Tubes are used, the measured homocysteine concentrations remain stable for 6 hours at room temperature (fig. 2).

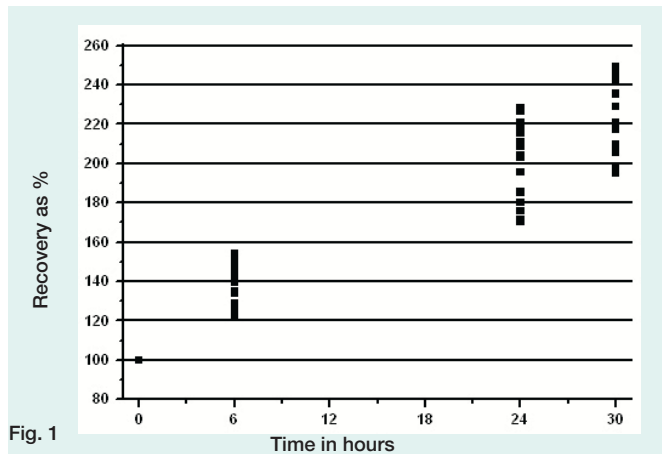


Fig. 1

**Figure 1:** Time dependent relative homocysteine concentration at room temperature in EDTA whole blood (n=30). Analysis method: HPLC with fluorescent detection (reagents from Bio Rad).

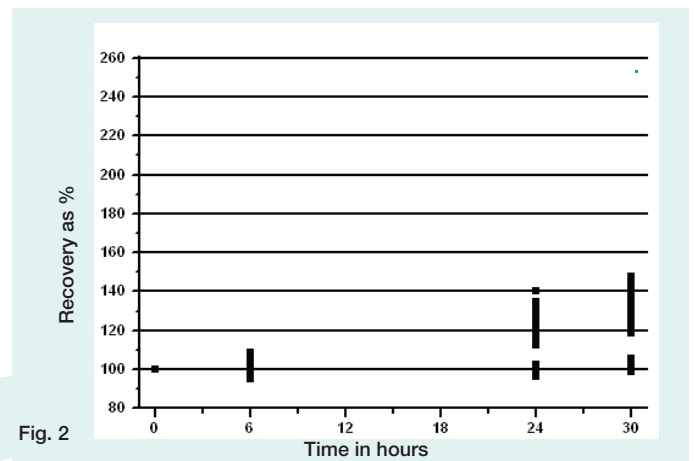


Fig. 2

**Figure 2:** Time dependent relative homocysteine concentration at room temperature using the **VACUETTE®** Homocysteine Detection Tube (n=30). Analysis method: HPLC with fluorescent detection (reagents from Bio Rad).

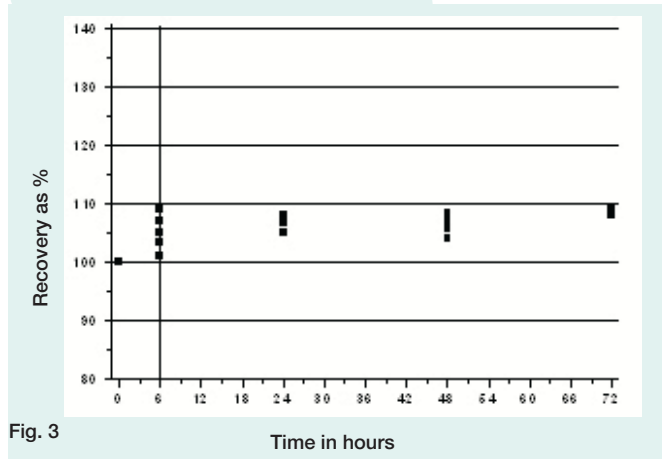


Fig. 3

**Figure 3:** Time dependent relative homocysteine concentration when stored for 6 hours at room temperature and then at 4°C (n=5). Analysis method: HPLC fluorescence detection (reagents from Bio Rad).

### Literature

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- Ueland PM, Refsum H, Stabler SP, Malinow MR, Andersson A, Allen HA: Total homocysteine in plasma or serum: methods and clinical applications. *Clin Chem* 1993,39:1764-79.
- Andersson A, Isaksson A, Hultberg B: Homocysteine export from erythrocytes and its implication for plasma sampling. *Clin Chem* 1992,38:1311-5.
- Nauck A, Bisse E, Nauck M, Wieland H: Pre-analytical conditions affecting the determination of the plasma homocysteine concentration. *Clin Chem Lab Med* 2001,39:675-80.
- Stanger, O. et. al.: Konsensuspapier der D.A.CH.-Liga Homocystein über den rationellen klinischen Umgang mit Homocystein, Folsäure und B-Vitaminen bei kardiovaskulären und thrombotischen Erkrankungen - Richtlinien und Empfehlungen. *J. Kardiol.* 10(5): 190-199, 2003.
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