



CERTIFIED REFERENCE MATERIAL BCR[®] – 638

CERTIFICATE OF ANALYSIS

HUMAN SERUM			
	Mass concentration		Number of accepted sets of data p
	Certified value ¹⁾ [µg/L]	Uncertainty ²⁾ [µg/L]	
Aluminium	55	7	8
Selenium	104	7	13
Zinc	1430	210	10

1) Unweighed mean value of the means of p accepted sets of data, each being obtained in a different laboratory and/or with a different method of determination. The certified values are traceable to the SI.
2) Expanded uncertainty according to the GUM (coverage factor k = 2).

This certificate is valid for one year after purchase.

Sales date:

The minimum amount of sample to be used is 50 µL.

NOTE

This material has been certified by BCR (Community Bureau of Reference, the former reference materials programme of the European Commission). The certificate has been revised under the responsibility of IRMM.

Brussels, November 2002
Latest revision: November 2007

Signed: _____

Prof. Dr. Hendrik Emons
Unit for Reference Materials
EC-JRC-IRMM
Retieseweg 111
2440 Geel, Belgium

DESCRIPTION OF THE SAMPLE

The CRM is supplied in frozen form in white plastic vials. The serum was sterile filtered prior to filling and no preservatives were added. The content of a vial is approximately 4.5 mL serum.

ANALYTICAL METHOD USED FOR CERTIFICATION

Electrothermal Atomic Absorption Spectrometry, Flame Atomic Absorption Spectrometry, Inductively Coupled Plasma Atomic Emission Spectrometry, Inductively Coupled Plasma Mass Spectrometry, Instrumental Neutron Activation Analysis.

PARTICIPANTS

- Centre for Analytical Sciences, University of Southampton (GB)
- Friedrich-Alexander Universität, Erlangen-Nürnberg (DE)
- GSF – National Research Center for Environment and Health, Oberschleissheim (DE)
- Institut National de Recherche et de Sécurité, Vandœuvre (FR)
- Institute of Occupational Health, University of Brescia (IT)
- Instituto Nacional de Seguridad e Higiene en el Trabajo, Baracaldo (ES)
- Istituto Superiore di Sanità, Rome (IT)
- Laboratory of Analytical Chemistry, University of Ghent (BE)
- National Institute of Occupational Health, Copenhagen (DK)
- Risø National Laboratory, Risø (DK)
- Robens Institute, University of Surrey (GB)
- Scientific Institute of Public Health, Brussels (BE)
- Trace Element Laboratory, Odense University Hospital, Odense (DK)
- Statens arbeidsmiljøinstitutt, Oslo (NO)
- University of Sheffield (GB)

SAFETY INFORMATION

This serum material was produced from blood from healthy blood donors. Each portion of serum was tested negative for Anti-HIV-1&2, Anti-HCV and Anti-HTLV-I&II. However, the material is of human origin and should be handled with adequate care. For in vitro analysis only.

INSTRUCTIONS FOR USE

Unopened vials may be shipped by express post services at 4 °C under controlled conditions. Allow the vial to thaw at room temperature or at 37 °C before opening. If the material is used for quality control of aluminium analyses, special efforts should be considered in order to prevent contamination of the material during the analysis, e.g. working under clean room conditions.

A white “fluffy” precipitate may appear if thawed in the cold (e.g. 5 °C). The precipitate dissolves in few minutes at 37 °C or after some hours standing at room temperature.

STORAGE

Unopened vials should be stored at - 70°C or lower for long-term storage.

However, the European Commission cannot be held responsible for changes that happen during storage of the material at the customer's premises, especially of opened samples.

LEGAL NOTICE

Neither IRMM, its subsidiaries, its contractors nor any person acting on their behalf,

(a) make any warranty or representation, express or implied that the use of any information, material, apparatus, method or process disclosed in this document does not infringe any privately owned intellectual property rights;

or

(b) assume any liability with respect to, or for damages resulting from, the use of any information, material, apparatus, method or process disclosed in this document save for loss or damage arising solely and directly from the negligence of IRMM or any of its subsidiaries.

NOTE

A technical report on the production of BCR[®]-638 is available on the internet (<http://www.irmm.jrc.be>). A paper copy can be obtained from IRMM on request.