

CA19-9

Abbreviations	CA19-9, Sialyl Lewis (a) antigen
Accession Number	N/A
Source	Human carcinoma cell line
Applications	Control Manufacture, Life Science, Clinical Chemistry, Biosensors, ELISA Assay, Lateral Flow

Antigen definition and protein background

The Sialyl Lewis (a) determinant (carbohydrate antigen 19-9) is a typical example of a tumour-associated carbohydrate specific biomarker. The CA19-9 antigen is found on proteins expressed in cancer where the cancer-associated Sialyl Lewis (a) which carries only one 2, 3 linked sialic acid residue is detected by specific antibodies.

N19-9, the monoclonal antibody recognising carbohydrate antigen 19-9 (CA19-9), was first generated and found to have preferential reactivity to cancer tissues through the collaborative studies of researchers at the Wistar institute.¹ The antibody was initially raised against colon cancer cells, but was found to detect the serum glycoprotein antigens that appear more frequently in the sera of patients with pancreatic and biliary tract cancers.

The material BBI provides is derived from a tumour cell line that expresses proteins containing this specific epitope.

Tissue Occurrence & Abundance

Most secretory and membrane-bound proteins produced by mammalian cells contain covalently linked sugar chains. Many epithelial cells will express proteins containing low levels of these carbohydrate residues. Three β - N-acetylglucosaminyltransferases, GnT-III, -IV and -V, play roles in the structural alteration of the complex-type sugar chains in various tumours. CA19-9 is associated with the post translational modification of proteins during specific alterations during tumour cell line propagation.

Quantitation of CA19-9 is derived from the original units allocated. The original pair of antibodies were used to differentiate serum samples from patients with tumours, from those that did not have tumours using the original reference preparation; assay standardisation is required to align methods.²

Function in Disease

The Sialyl Lewis (a) determinant on cancer cells is known to serve as a ligand for endothelial E-selectin, and mediates haematogenous metastasis of cancers. The biological functions of its normal counterpart, Di-sialyl Lewis is currently unknown. However the Di-sialyl Lewis (a) determinant serves as a ligand for siglec-7 and -9, the members of a family of sialic acid recognising molecules expressed mainly on leukocytes.

Clinical immunoassays for CA19-9 use antibodies with specificity for the Sialyl Lewis (a) epitope. CA19-9 is the most widely used and clinically useful serum marker as part of the clinical diagnosis and progression assessment of Pancreatic cancer.³ Elevated serum levels occur in approximately 75% of patients with stage 3 Pancreatic cancer. Serial measurements are helpful in assessing prognosis and for monitoring patients as an indicator for therapeutic response.

Antigenic specificity

Material tested using Roche and Abbott assays which use the antibody 1116-NS-19-9. Also tested on the Beckman Access. Material has not been assessed for Di-sialyl Lewis (a) content.

References

1. Kannagi, R (2007) Carbohydrate Antigen Sialyl Lewis a – Its Pathophysiological Significance and Induction Mechanism in Cancer Progression. *Chang Gung Med J* 30,3 189-209
2. La'ulu, S L and Roberts, W L (2007) Performance Characteristics of Five Automated CA 19-9 Assays *Am J Clin. Pathol*;127:436-440
3. Del Villano, B.C (1983) Radloimmunometric Assay for a Monoclonal Antibody-Defined Tumor Marker, CA 19-9. *Clin. Chem.* 29/3, 549-552

WHY CHOOSE BBI'S CA19-9 ANTIGENS?

- + Our production facilities allow us to offer consistent and reproducible **large batch sizes** up to thousands of Ku
- + With a network of global labs and hospitals, we can access many **diverse testing platforms**, providing you with the exact analysis results you need
- + With over 25 years' experience sourcing human biologicals and a stable cell line you can be confident in a **secure European supply chain**
- + We can provide the **complete package** with CA19-9 antibodies and patient samples too, speak to us about a package deal
- + **Very low cross reactivity** with closely-related molecules
- + We can **adapt dispensations and testing methodologies** to meet your needs

Grade & Concentration	Low cross reactivity grade, >100Ku/ml	
Stability & Formulation	Supplied liquid frozen – Store at below -15°C	
Assay recovery and contamination profile specification	CA125 concentration by Roche Modular	< 10% of CA19-9
	CA15-3 concentration by Roche Modular	< 10% of CA19-9
	CA72-4 concentration by Roche Modular	< 8% of CA19-9
	CEA concentration by Roche Modular	< 8% of CA19-9 based on 1U = 1ng.
Dispensations	10Ku, 100 Ku, 1000 Ku	

Ordering Details

USE THE FOLLOWING CODES WHEN ORDERING

Product	Code	Description
CA19-9	P291-4	Supplied liquid frozen in Phosphate buffered saline, assayed by Roche Modular sourced from human carcinoma cell line

Related Products

CA125	P251-4	Low cross reactivity, high concentration. Formulated at >250Ku/ml.
CA19-9 mAb	BM238-G6C8	WB ELISA – Capture mAb paired with BM238-H7D1 as detection mAb
CA19-9 mAb	BM238-H7D1	WB ELISA – Detection mAb paired with BM238-G6C8 as capture mAb
CA19-9 serum Patient Samples	SG358-2	Serum samples from patients with a raised level of the cancer marker CA19-9.

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