

Blood Group Collections

Antigens in each Collection have serological, biochemical, and/or classic genetic connection. The i antigen remained the sole antigen in the Ii Collection when the gene controlling the I antigen was identified, and I was promoted to the I System.

Collection			Antigen number					
Symbol	Name	Number	001	002	003	004	005	006
COST	Cost	205	Cs ^a	Cs ^b				
I	Ii	207	...	i				
ER	Er	208	Er ^a	Er ^b	Er3			
GLOB	Globoside	209	LKE	PX2		
	Unnamed	210	Le ^c	Le ^d				
VEL	Vel	212	Vel	ABTI				
MN CHO [^]		213	Hu	M ₁	Tm	Can	Sext	Sj

[^]= M and N antigens associated with different sialic acid-carrying oligosaccharides on GPA.
 Obsolete Collections: 201 (GE), 202 (CROM), 203 (IN), 204 (AU), 206 (GY), and 211 (WR). For
 obsolete antigens see ISBT Working Party publications or the ISBT website: www.isbt-web.org.

Cost Blood Group Collection

Number of antigens 2

Polymorphic Cs^b
 High prevalence Cs^a

Terminology

ISBT symbol (number) COST (205)
 Obsolete name Cost-Sterling

History This collection of phenotypically-associated antigens was established in 1988, and named after the two original patients who made anti-Cs^a (Copeland and Sterling). Five of the original antigens from this collection are now in the Knops system because they are carried on CR1.

Phenotypes

Null Some RBCs type as Kn(a–b–), McC(a–), Sl(a–), Yk(a–), Cs(a–b–), and have very low copy numbers of CR1; however, Cs^a and Cs^b do not appear to be carried on CR1¹

Reference

¹ Moulds, J.M., et al., 1992. Antiglobulin testing for CR1-related (Knops/McCoy/Swain- Langley/ York) blood group antigens: negative and weak reactions are caused by variable expression of CR1. Vox Sang 62, 230–235.

Cs^a Antigen

Terminology

ISBT symbol (number) COST1 (205001 or 205.1)
Obsolete names Cost-Sterling; 900004
History Named in 1965 after two of the original patients (Mrs. Copeland and Mrs. Sterling) who made anti-Cs^a.

Occurrence

Most populations >98%
Blacks 95%

Antithetical antigen

Cs^b (COST2)

Expression

Cord RBCs Expressed; may be slightly weaker

Effect of enzymes and chemicals on Cs^a antigen on intact RBCs

Ficin/Papain	Resistant
Trypsin	Resistant
α-Chymotrypsin	Resistant
DTT 200 mM/50 mM	Variable
Acid	Resistant

In vitro characteristics of alloanti-Cs^a

Immunoglobulin class	IgG
Optimal technique	IAT

Clinical significance of alloanti-Cs^a

Transfusion reaction	No
HDFN	No

Comments

Cs^a has variable expression on RBCs from different people. RBCs of approximately 12% of Caucasians, and 15% of Blacks with the Yk(a–) phenotype are also Cs(a–)¹.

Reference

¹ Rolih, S., 1990. A review: antibodies with high-titer, low avidity characteristics. Immunohematology 6, 59–67.

Cs^b Antigen

Terminology

ISBT symbol (number)	COST2 (205002 or 205.2)
History	Identified in 1987, and named when the antigen it was shown to be antithetical to Cs ^a .

Occurrence

Most populations	34%
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Antithetical antigen

Cs^a (COST1)

Expression

Cord RBCs	Presumed expressed
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Effect of enzymes and chemicals on Cs^b antigen on intact RBCs

Ficin/Papain	Resistant
Trypsin	Resistant
α-Chymotrypsin	Resistant
DTT 200 mM/50 mM	Variable

***In vitro* characteristics of alloanti-Cs^b**

Immunoglobulin class	IgG
Optimal technique	IAT

Clinical significance of alloanti-Cs^b

No data because only one example of antibody published.