Diaclone

The CAM Family

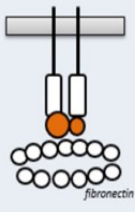
A NEW TARGET FOR MONITORING OR TREATING CANCERS?

The cell adhesion molecules (CAMs) family includes more than 50 proteins with four main groups: immunoglobulin (Ig)-like CAMs, cadherins, selectins, and integrins.

Many cellular functions are directly linked to cell adhesion such as **signal transduction, cellular communication and recognition, embryogenesis, inflammatory and immune responses, apoptosis and some of them also act as viral receptors** [Cohen MB, Am J Clin Pathol. 1997, 107(1):56-63].

The metastatic dissemination of tumor cells is the leading cause of morbidity and mortality in patients with cancer since it designates the transition from a localized, potentially curable to a generalized, usually incurable disease [Makrilia N, Cancer Invest. 2009, 27(10)].

Across the years, it has become evident that the adhesion properties of neoplastic cells play a pivotal role in the development and progression of cancer. [Okegawa T, Acta Biochim Pol. 2004;51(2):445-57].

	A	B	C	D
family	cadherins	Ig-superfamily CAMs	mucin-like CAMs	integrins
type				
members	E-cadherin P-cadherin N-cadherin	VCAM NCAM ICAM Nectins Nectin-like (Necl)	E-selectin P-selectin L-selectin	VLA-4 (α4/ß1) VLA-5 (α5/ß1) LFA-1 (αL/ß2) etc.
interaction	homophilic heterophilic	homophilic heterophilic	heterophilic	heterophilic
regulation/ relation to cancer	E-cadherin: hypermethylated in leukemia	NCAM: regulated by RUNX1	P-selectin: overexpressed in multiple myeloma	VLA-4: activation via SDF1α/CXCR4
experimental targeting strategy	anti-P-cadherin in mammary cancer	anti-NCAM radio-immuno-conjugates	anti-PSGL1 in multiple myeloma; GMI-1271 in E-selectin+ AML	anti-VLA4 in ALL and AML

[Windisch R, Cancers 2019, 11(3), 311]

Changes in the expression or function of the CAMs have been associated with alterations in the adhesive or signaling status of tumor cells, allowing them to acquire a more **motile and invasive phenotype prognostic biomarkers or as potential therapeutic targets in malignancies.**

Additionally, many CAMs can be cleaved and released by proteolytic cleavage activity, and their soluble forms were found increased in serum levels of cancer patients. Even if elevated levels of soluble CAMs are also observed in bacterial and viral infections or in acute inflammation, some of them have been identified as being **interesting prognostic markers of cancer progression**, **such as EpCAM**, described to be upregulated in colorectal cancer with clinical relevance [Han S, Ebiomedicine 2017; 20:61–69].

Diaclone has for many years been interested in adhesion molecules and can provide antibodies against all selectins and integrins families, against most of IgSF CAM family and against EpCAM, H-CAM, M-CAM, and BL-CAM.

Knowing that the soluble form amount could become an innovative tool of cancer monitoring, **Diaclone** has also developed ELISA kits for measuring serum levels of a wide range of sCAM.

Diaclone products available for the analysis of CAM markers

ELISA KITS

	Antigen synonym	Clone	ELISA Kit	ELISA Set
IgSF CAM Calcium-independent	I-CAM-1	CD54	x	x
	I-CAM-2	CD102	x	
	I-CAM-3	CD50	x	
	VCAM-1	CD106	x	x
	PECAM-1	CD31	x	
Selectin Calcium-dependent	E-selection	CD62E	x	x
	L-selection	CD62L	x	
	P-selection	CD62P	x	

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MONOCLONAL ANTIBODIES

	Specificity (Anti-human)	Antigen synonym	Clone	Isotype	Azide free	Unconjugated	FITC	PE	Biotin
IgSF CAM Calcium-independent	CD31	PECAM-1	B-B38	IgG1	x	x	x	x	
	CD31	PECAM-1	B-N14	IgG1	x				
	CD50	I-CAM-3	B-P12	IgG1	x				
	CD50	I-CAM-3	B-R1	IgG1	x	x	x		
	CD54	I-CAM-1	B-H17	IgG1	x	x	x	x	
	CD54	I-CAM-1	B-H22	IgG1	x				x
	CD56	N-CAM	B-A19	IgG1	x	x		x	
	CD102	I-CAM-2	B-R7	IgG1	x				
	CD102	I-CAM-2	B-T1	IgG1	x	x	x		
	CD106	V-CAM-1	B-S6	IgG1	x				
	CD106	V-CAM-1	B-N8	IgG1	x				x
	CD112	Nectin-2	B-C12	IgG2b	x	x			
	CD171	L1-CAM	B-L51	IgG1	x	x			

	Specificity (Anti-human)	Antigen synonym	Clone	Isotype	Azide free	Unconjugated	FITC	PE	Biotin
Integrin Calcium-independent	CD11a	LFA-1	B-B15	IgG1	x	x	x	x	
	CD11b	Macrophage-1 antigen	MEM-174	IgG2a		x	x	x	
	CD11c	Integrin AlphaX	BU15	IgG1		x	x		
	CD18	Integrin Beta2	MEM-48	IgG1	x	x	x	x	
	CD29	VLA-4	B-D15	IgG2a	x	x	x	x	
	CD49d	VLA-4	BU49	IgG1		x			
	CD41a	Glycoprotein IIb (ITGA2B)	HIP8	IgG1		x			

	Specificity (Anti-human)	Antigen synonym	Clone	Isotype	Azide free	Unconjugated	FITC	PE	Biotin
Selectin Calcium-dependent	CD62E	E-selectin	B-P7	IgG1	x	x			
	CD62E	E-selectin	B-S3	IgG1	x				x
	CD62L	L-selectin	B-S13	IgG1	x	x		x	
	CD62P	P-selectin	B-F46	IgG1	x	x			
	CD62P	P-selectin	B-G43	IgG2b	x				

	Specificity (Anti-human)	Antigen synonym	Clone	Isotype	Azide free	Unconjugated	FITC	PE	Biotin
	CD22	BL-CAM	MEM-01	IgG1		x		x	
	CD44	H-CAM	B-F24	IgG1	x	x	x		
	CD44	H-CAM	B-R8	IgG1	x				
	CD146	M-CAM	B-T46	IgG1	x	x			
	CD326	EpCAM	B-E54	IgG1	x	x			
	CD326	EpCAM	B-K46	IgG1	x				
	CD326	EpCAM	B-P43	IgG1	x				

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