Get Focused

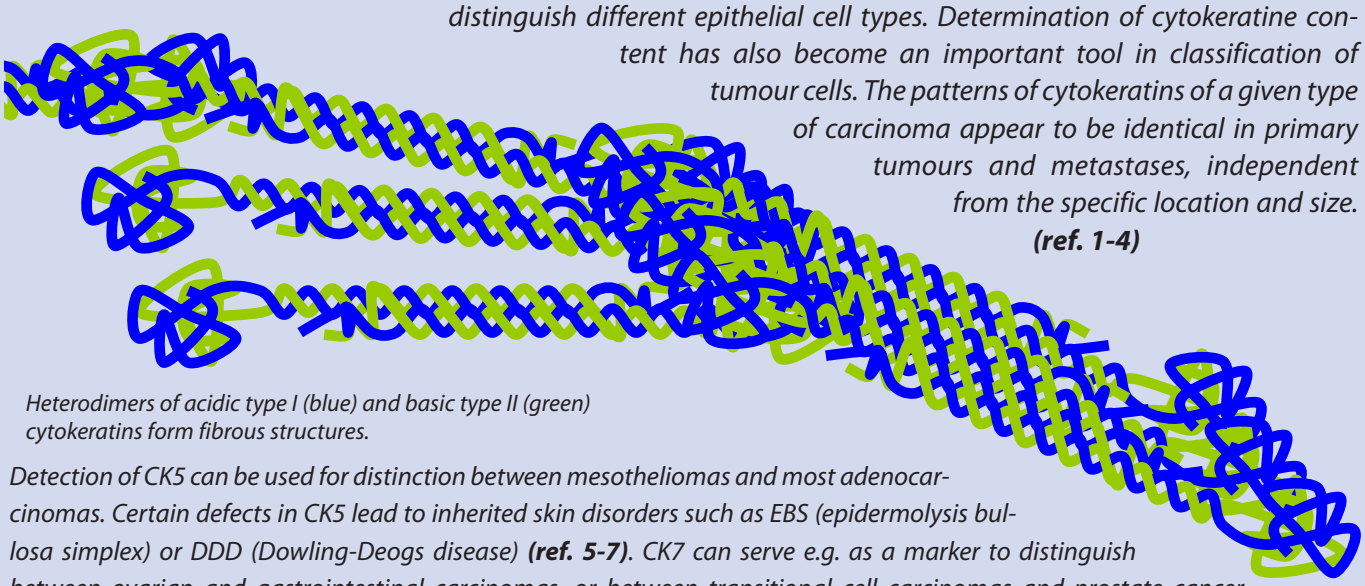
Issue 7

EXBIO Antibodies

CYTOKERATINS

MARKERS IN TUMOUR DIAGNOSTICS

Cytokeratins (CKs), the largest family of intermediate filament proteins, are expressed in epithelial and epithelia-derived cells. Unique combinations of type I (CK9-CK23) and type II (CK1-CK8) cytokeratins serve as specific markers that distinguish different epithelial cell types. Determination of cytokeratine content has also become an important tool in classification of tumour cells. The patterns of cytokeratins of a given type of carcinoma appear to be identical in primary tumours and metastases, independent from the specific location and size. ***(ref. 1-4)***

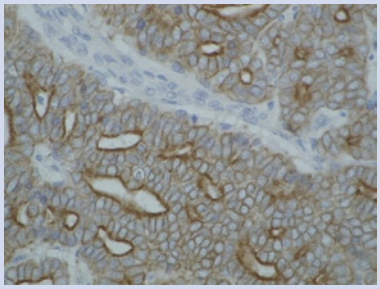


Heterodimers of acidic type I (blue) and basic type II (green) cytokeratins form fibrous structures.

Detection of CK5 can be used for distinction between mesotheliomas and most adenocarcinomas. Certain defects in CK5 lead to inherited skin disorders such as EBS (epidermolysis bullosa simplex) or DDD (Dowling-Deogs disease) ***(ref. 5-7)****. CK7 can serve e.g. as a marker to distinguish between ovarian and gastrointestinal carcinomas, or between transitional cell carcinomas and prostate cancer. Aberrant expression of CK7 in hepatocytes is a marker primary biliary cirrhosis* ***(ref. 8-10)*** *CK8 and CK18 are hallmark of simple epithelia. Despite structural role, they have signaling function in modulation of cell attachment, protein synthesis and G1/S phase transition and are involved in stress adaptation. CK18 is also used as a serum biomarker for monitoring therapy-induced tumour apoptosis and necrosis* ***(ref. 11-14)****. Detection of CK10, CK13 and CK17 can be used in squamous cell carcinoma diagnostics* ***(ref. 15-17)****. Monitoring of CK19 expression is important for prognosis of various tumours. The expression of CK19 may be linked to retention of undifferentiated cell character* ***(ref. 18-22)****.*

Expression of cytokeratins in selected human carcinoma types:

Carcinoma	Cytokeratins
Hepatocellular carcinoma	8, 18
Adenocarcinoma of colon, type 1	8, 18, 19
Adenocarcinoma of colon, type 2	8, (17), 18, 19
Adenocarcinoma of stomach	(7), 8, 18, 19
Adenocarcinoma of esophagus	8, 18, 19
Adenocarcinoma of pancreas	7, 8, (17), 18, 19
Ductal (adeno-) carcinoma of breast, type 1	(7), 8, 18, 19
Basal cell epithelioma	5, (6), (8), 14, (15), 17
Squamous cell carcinoma of skin	5, 6, (11), 14, 16, (17)
Squamous cell carcinoma of tongue	5, 6, 14, 16, 17
Ductal carcinoma of breast, type 2	6, 7, 8, (11), (14), (16), (17), 18, 19
Undifferentiated carcinoma of bronchus (large-cell type)	6, 7, 8, 17, 18, 19
Solid carcinoma of maxillary sinus	5, 8, 17, (18), 19
Adamantinoma	4, 5, 8, 14, (15), 16, 17, 19
Squamous cell carcinoma of epiglottis	4, 5, 6, (8), 14, (15), (16), 17, (18), 19
Squamous cell carcinoma of esophagus	(4), 5, (8), 14, (15), (16), 17, 19
Squamous cell carcinoma of rectal-anal region	(4), 5, 6, (8), (10), (11), 14, (15), 16, 17, (18), 19
Cloacogenic carcinoma	1, 5, (6), 7, 8, (10), (11), 13, (14), 15, 17, 19



Monoclonal (C-11) anti-cytokeratin (pan-reactive)
Paraffin-embedded sections of guinea pig breast carcinoma

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Mouse monoclonal antibodies to cytokeratins

(all also available in 25 µg quantities)

Cytokeratin (Pan-reactive):

Clone	Isotype	Reactivity	Application	Catalogue No.	Format	Quantity
C-11	IgG1	Broad	WB, IP, FC, ICC, IHC	11-108-C100	Purified	0.1 mg
				11-108-M001	Purified	1.0 mg
				A4-108-C100	Alexa Fluor® 488	0.1 mg
				1P-108-C100	Phycoerythrin	0.1 mg
				1A-108-C100	APC	0.1 mg

Cytokeratin 5+18:

Clone	Isotype	Reactivity	Application	Catalogue No.	Format	Quantity
C-50	IgG1	Hu, Por, Ms, Rt, Ham, Bov, Sh, Can	WB, IP, ICC, IHC	11-101-C100	Purified	0.1 mg

Cytokeratin 7+17:

Clone	Isotype	Reactivity	Application	Catalogue No.	Format	Quantity
C-46	IgG1	Hu, Por, Bov	WB, IP, ICC, IHC	11-109-C100	Purified	0.1 mg

Cytokeratin 8:

Clone	Isotype	Reactivity	Application	Catalogue No.	Format	Quantity
C-43	IgG1	Hu, Por, Bov, Sh, Rb	WB, IP, ICC, IHC	11-105-C100	Purified	0.1 mg
C-51	IgG1	Hu, Por, Bov, Sh	WB, IP, ICC, IHC	11-104-C100	Purified	0.1 mg

Cytokeratin 10:

Clone	Isotype	Reactivity	Application	Catalogue No.	Format	Quantity
VIK-10	IgG1	Hu	IP, ICC, IHC	11-111-C100	Purified	0.1 mg

Cytokeratin 10+13:

Clone	Isotype	Reactivity	Application	Catalogue No.	Format	Quantity
DE-K13	IgG2a	Hu, Fel	WB, IHC	11-478-C100	Purified	0.1 mg

Cytokeratin 18:

Clone	Isotype	Reactivity	Application	Catalogue No.	Format	Quantity
C-04	IgG1	Mam	WB, IP, FC, ICC, IHC, ELISA	11-106-C100	Purified	0.1 mg
				1B-106-C100	Biotin	0.1 mg
				1F-106-C100	FITC	0.1 mg
				A4-106-C100	Alexa Fluor® 488	0.1 mg
				A7-106-C100	Alexa Fluor® 700	0.1 mg
DA-7	IgG1	Hu	WB, IP, ICC, IHC, ELISA	11-110-C100	Purified	0.1 mg
				1B-110-C100	Biotin	0.1 mg
DC-10	IgG1	Hu	WB, IP, ICC, IHC, ELISA	11-107-C100	Purified	0.1 mg
				1B-107-C100	Biotin	0.1 mg
				1F-107-C100	FITC	0.1 mg

Cytokeratin 19:

Clone	Isotype	Reactivity	Application	Catalogue No.	Format	Quantity
A53-B/A2	IgG2a	Hu	WB, IP, ICC, IHC, ELISA	11-120-C100	Purified	0.1 mg
				11-120-M001	Purified	1.0 mg
				1B-120-C100	Biotin	0.1 mg
				A4-120-C100	Alexa Fluor® 488	0.1 mg
BA-17	IgG1	Hu	WB, IP, ICC, IHC	11-119-C100	Purified	0.1 mg
				1B-119-C100	Biotin	0.1 mg

Bov = Bovine; Can = Canine; Fel = Feline; Ham = Hamster; Hu = Human; Mam = Mammalian; Ms = Mouse; Por = Porcine; Rb = Rabbit; Rt = Rat; Sh = Sheep

FC = Flow Cytometry; ICC = Immunocytochemistry; IHC = Immunohistochemistry; IP = Immunoprecipitation; WB = Western Blotting

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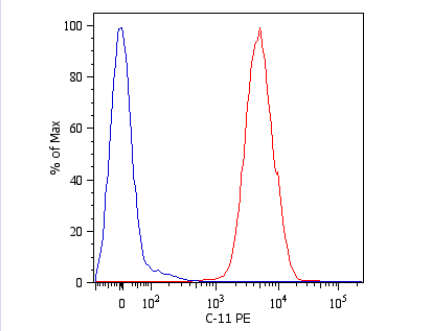
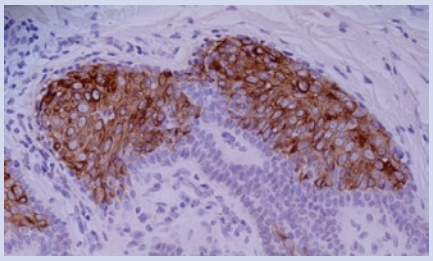
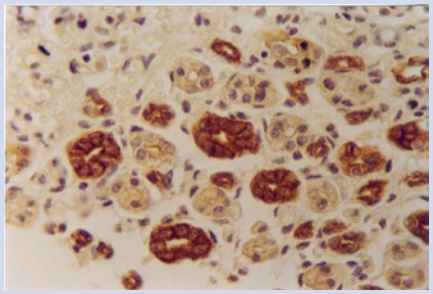


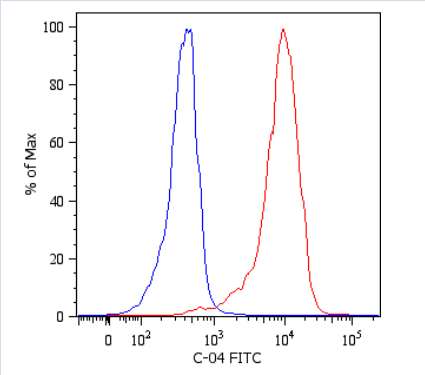
Monoclonal (C-11) anti-cytokeratin (pan-reactive)
Intracellular flow cytometry analysis of cytokeratin expression in HT-29 cell line, compared to isotype control.



Monoclonal (VIK-10) anti-cytokeratin 10
Paraffin-embedded section of skin basaliom.



Monoclonal (C-04) anti-cytokeratin 18
Paraffin-embedded section of kidney.



Monoclonal (C-04) anti-cytokeratin 18
Intracellular flow cytometry analysis of cytokeratin 18 expression in HeLa cells, compared to isotype control.

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