

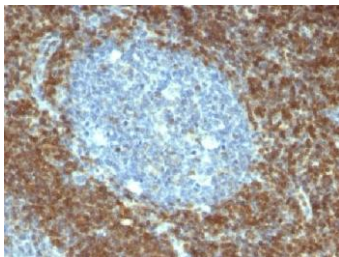
Medaysis

Breast Cancer Markers

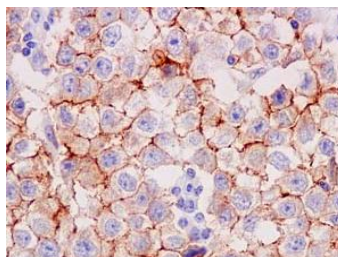


Breast cancer is the 2nd most common cancer in the world and, the most frequent cancer among women with an estimated 1.67 million new cancer cases diagnosed in 2012 (25% of all cancers). Incidence rates vary nearly four-fold across the world regions, with rates ranging from 27 per 100,000 in Middle Africa and Eastern Asia to 92 in Northern America. It ranks as the 5th cause of death from cancer overall (522,000 deaths), the most frequent cause of cancer death in women in less developed regions (324,000 deaths, 14.3% of total), the second cause of cancer death in more developed regions (198,000 deaths, 15.4%) after lung cancer.

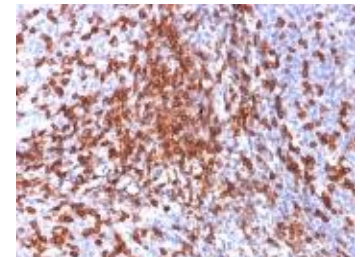
GLOBOCAN database



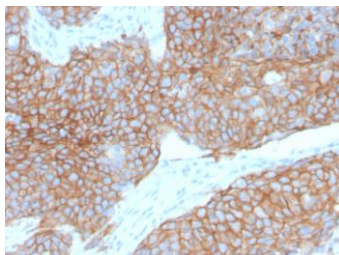
FFPE human tonsil stained with anti-Bcl-2



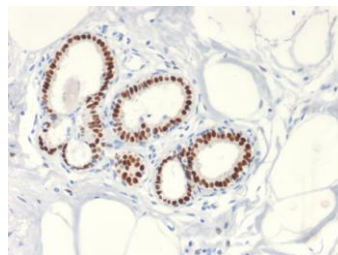
FFPE human seminoma stained with anti-CD117



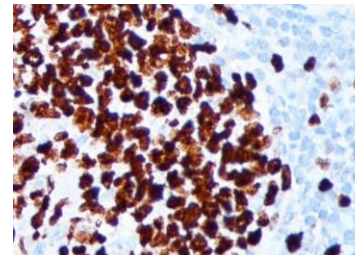
FFPE human breast cancer stained with CD44 [156-3C11]



FFPE human colon ca stained with anti-Cadherin-E [MD128R]



FFPE human breast ca stained with anti-ER [MD4R]



FFPE human tonsil stained with anti-Ki67 [MIB-1]

Breast Cancer Markers

Name	Cat. No.	Application
ABCG2/BCRP [B1]	MC0582	Considered as one of three major transporters causing drug resistance
Actin Smooth Muscle [1A4]	MC0004	Myoepithelial marker for detection of invasive carcinoma
Adiponectin [ADPN/1370]	MC0138	Low circulating adiponectin levels associated with an increased breast cancer risk
Annexin 1 [ANXA1/3566]	MC0388	Upregulated Annexin A1 promotes cellular invasion in triple-negative breast cancer
Annexin 1 [EH17a]	MC0481	
Anterior G2 [EPR3278]	RM0352	Positive staining in ER+ breast cancers associated with poorer survival
AR [AR441]	MC0609	Absence associated with higher histological grade, development of recurrence and distant metastasis
AR [MD124R]	RM0004	
BCA-225 [Cu-18]	MC0501	Can be used to differentiate breast ca. from benign or malignant colonic, stomach, prostate, liver, pancreas, thyroid, or parotid tissues
Bcl-2 [8C8]	MC0614	Overexpression can indicate poor prognosis of breast tumors; useful to differentiate Luminal A (more +) vs Luminal B (-)
BRCA1 Protein [MS110]	MC0504	Loss of BRCA-1 nuclear expression or mutation indicates poor prognosis of breast cancer
BRCA1 Assoc P [C4]	MC0136	
BRCA1 Assoc P [MD121R]	RM0398	
CA125 [OCA125/2349R]	RM0219	Over expressed in breast cancer
CA19-9 [121SLE]	MC0506	Useful to differentiate infiltrating ductal (-) vs adenoid cystic (+) ca
Cadherin-E [CDH1/1525]	MC0165	Useful for characterization of ductal (+) vs lobular (-) carcinoma; negative expression of E-Cadherin associated with higher histological grade and development of metastasis
Cadherin-E [MD128R]	RM0088	
Calponin [CALP]	MC0033	Myoepithelial marker for detection of invasive carcinoma
Calponin [MD130R]	RM0015	
Catenin Beta [15B8]	MC0271	Low expression may correlate with a poor outcome; useful to differentiate Luminal A (more +) vs Luminal B (-)
Catenin Beta [EP35]	RM0008	
Cathepsin D [CTSD/3082]	MC0184	Potential prognostic indicator
CD10 [56C6]	MC0277	Myoepithelial marker for detection of invasive carcinoma
CD10 [MME/1870]	MC0272	
CD10 [SP67]	RM0224	
CD117 [C117/370]	MC0233	Useful to differentiate infiltrating ductal (-) vs adenoid cystic (+) ca
CD117 [EPR22566-344]	RM0067	
CD138 [B-A38]	MC0510	Used to identify differentiated plasma cells, multiple myeloma, and subclassification of diffuse large B-cell
CD138 [EPR6454]	RM0023	
CD138 [MD76R]	RM0463	
CD14 [MD85R]	RM0024	Used as a differentiation marker for monocytes/macrophages, labels Langerhans' cells and dendritic cells

Breast Cancer Markers

Name	Cat. No.	Application
CD15 [[FUT4&815]	MC0646	Used to identify Chronic Myelogenous Leukemia, mononuclear Hodgkin's cells and Reed-Sternberg cells in Hodgkin's lymphoma
CD16 [DJ130C]	MC0331	Useful to differentiate hepatosplenic gamma delta T-cell lymphoma and gamma delta T-cell large granular lymphocyte leukemia from other peripheral T-cell lymphomas, such as mucosal and cutaneous gamma delta T-cell lymphoma
CD163 [EPR14336]	RM0027	Might be used for identifying tumors of monocytic origin
CD163 [M130/1210]	MC0367	
CD19 [MD77]	MC0394	A pan B cell marker expressed in a wide range of maturational stages including pre B cells, found in the majority of B cell-derived malignancies
CD1a [O10]	MC0278	Used for identification of Langerhans Cell Histiocytosis, thymoma, precursor T-lymphoblastic leukemia/lymphoma
CD2 [MD150R]	RM0283	A pan T-cell marker, Useful for identification of precursor and mature T-cell lymphomas. Aberrant loss of CD2 in T-cell lymphomas may help to distinguish them from reactive T-cell proliferations
CD20 (B Cell) [L26]	MC0056	Used to identify B lymphocyte
CD21 [CR2/3124R]	RM0311	Used to identify follicular lymphoma, follicular dendritic cells, mature B cells and angioimmunoblastic T-cell lymphoma
CD21 [EP64]	RM0032	
CD22 [BLCAM/1795]	MC0252	Expressed in B lymphocytes and hairy cell leukemia
CD23 [HD50]	MC0158	Used to identify both normal B cells and malignant lymphomas such as B-cell chronic lymphocytic leukemia/small lymphocytic lymphoma
CD23 [MD78R]	RM0033	
CD235a [EPR8200]	RM0101	strongly labels normal erythroid cells at all stages of differentiation from the erythroblast to the mature red cell and does not react with glycophorin B
CD235a [GYPA/280]	MC0651	
CD25 [EP218]	RM0034	Used to distinguish neoplastic mast cell aggregates from reactive proliferations. It is a minor criterion for the diagnosis of bone marrow involvement in systemic mastocytosis (SM)
CD25 [IL2RA/2395]	MC0395	
CD3 [PC3/188A]	MC0273	Used to identify T- and NK-cell lymphomas and mycosis fungoides
CD44 [156-3C11]	MC0666	Useful to differentiate infiltrating ductal (+) vs adenoid cystic (-) ca
CD44 [MD132R]	RM0044	
CK [AE1&AE3]	MC0115	A panel of AE1&AE3(-), CAM5.2(-), CK7(-), p63(+) is useful to differentiate metaplastic ca. of breast from myofibroblastoma and PT
CK [CAM 5.2]	MC0526	
CK14 [EPR17350]	RM0075	Basal phenotype defined by the expression of CK5/6 or CK14 associated with development of recurrence and increased mortality from breast cancer
CK14 [LL002]	MC0111	

Breast Cancer Markers

Name	Cat. No.	Application
CK20 [KRT20/1993]	MC0174	Expression more prevalent in adenoca. originated in the GI tract than that of pulmonary or breast origin, may be used for differentiation purpose
CK20 [Ks20.8]	MC0114	
CK5 [EP42]	RM0083	Basal phenotype defined by the expression of CK5/6 or CK14 associated with development of recurrence and increased mortality from breast cancer
CK5 [KRT5/2080]	MC0429	
CK5/6 [D5/16B4]	MC0327	
CK5/6 [KRT5-6/2437]	MC0211	
CK6 [LHK6]	MC0750	
CK7 [OV-TL12/30]	MC0754	Often used in conjunction with CK20 and CDX-2 to distinguish pulmonary, ovarian and breast carcinomas (CK7+) from most colon carcinomas (CK7-)
CK8 [35BH11]	MC0755	Assists in the identification of adenocarcinoma
CK8/18 [K8.8&DC10]	MC0764	
CK Acid [AE1]	MC0120	Suited to distinguish poorly differentiated carcinomas from non-epithelial neoplasms
CK Basic [AE3]	MC0119	Stains most epithelia and their neoplasms; used to identify neoplasms derived from epithelium
CK HMW [34BE12]	MC0328	Useful for characterization of ductal (+) vs lobular (-) carcinoma
Claudin 5 [EPR7583]	RM0068	May play a role in the metastasis and progression of breast cancer
COX2 [COX2/2377]	MC0286	Elevated expressed in breast ca. and associated with poor prognosis and decreased survival in patients with breast cancer
COX2 [MD144R]	RM0200	
Cyclin D1 [DCS-6]	MC0732	Overexpression in breast carcinoma can indicate malignant transformation
Cyclin D1 [EP12]	RM0071	
EGFR (E746-A750 del)	RM0444	Expression associated with poor prognosis in several types of tumors including breast cancer
EGFR (L858R) [MD27R]	RM0330	Presented in some triple negative breast cancers
EGFR [GFR/1667]	MC0157	For identification of basal-like breast carcinoma along with CK5/6
EGFR [MD115R]	RM0089	
EGFRvIII [MD99R]	RM0366	Tumor specific and not expressed in normal human tissues
ER [1D5]	MC0335	Invasive breast cancer marker; useful to differentiate infiltrating ductal (+) vs adenoid cystic (-)
ER [EP1]	RM0092	
ER [MD4R]	RM0247	
ER [SP1]	RM0248	

Breast Cancer Markers

Name	Cat. No.	Application
ER-beta [ERb455]	MC0973	a mediator of estrogen action in breast cancer cells with tumor-initiating capabilities (BSCs) and a novel target for endocrine therapy
ERCC1 [EP219]	RM0093	Expression correlated significantly with favorable prognostic factors, such as smaller tumor size and ER-positivity, a predictive and/or prognostic marker in breast cancer
FOXA1 [FOXA1/1512]	MC0275	Expression correlated with ER positivity, especially in luminal subtype A breast cancers, which is associated with favorable prognosis
GATA3 [C11]	MC0125	Expression associated with estrogen receptor-alpha expression in breast cancer
GATA3 [GATA3/2442]	MC0536	
GATA3 [L50-823]	MC0538	
GATA3 [MD22R]	RM0325	
GCDFP-15 [PIP/1571]	MC0312	A less sensitive but more specific marker than Mammaglobin for breast carcinoma. Together the two markers may help establish the correct interpretation of metastatic breast carcinoma
HSP27 [G3.1]	MC0154	Increased levels correlated with the presence of ER and PR in breast ca.
HER2 [EP3]	RM0104	Overexpressed in 15-30% breast cancers, prognostic and therapeutic marker
HER2 [ERBB2/3257]	MC0168	
HER2 [MD13R]	RM0254	
HER2 [SP3]	RM0446	
IMP3/KOC [MD123]	MC0426	
Ki67 [MDKI67]	MC0196	Proliferation marker; positive expression of p-Cadherin, p53 and Ki67 associated with higher grade
Ki67 [MIB-1]	MC0185	
Ki67 [SP6]	RM0255	
Mammaglobin [304-1A5]	MC0546	A more sensitive but less specific marker than GCDFP-15 for breast carcinoma. Together the two markers may help establish the correct interpretation of metastatic breast carcinoma
MDM2 [SMP14]	MC0548	Amplification is an independent prognostic feature of node-negative, estrogen receptor-positive early-stage breast cancer
Myosin SM HC [SMMS1]	MC0206	Distinguishes between benign sclerosing breast lesions and infiltrating carcinomas in difficult cases since it strongly stains the myoepithelial layer in the benign lesions while it is negative in the infiltrating ca.
OCT3/4 [C-10]	MC0561	Expressed in breast cancer associated with SLN and non-SLN metastasis, a potential candidate for predicting metastasis
OCT4 [EPR17929]	RM0148	

Breast Cancer Markers

Name	Cat. No.	Application
p120 Catenin [MD153R]	RM0151	Cytoplasmic accumulation associated with lobular breast carcinoma whereas ductal neoplasms retain membranous localization
p16/INK4a [CDKN2A/4844R]	RM0140	Expression correlated with basal-like triple-negative breast carcinoma, may play a role in the poor prognosis
p16/INK4a [G175-405]	MC0280	
p53 [BP-53-12]	MC0218	Positive expression of p-Cadherin, p53 and Ki67 are associated with higher grade
p53 [DO-7]	MC0219	
PAX6 [SPM612]	MC0983	Overexpression associated with the poor prognosis of invasive ductal breast cancer
PD-1 [NAT105]	MC0547	The presence of PD-1 positive tumor-infiltrating lymphocytes (TIL) associated with poor prognosis in breast cancers
PD-1 [PDCD1/922]	MC0909	
PD-L1 [MD21R]	RM0324	a promising biomarker for the prognosis of breast cancer
PD-L1 [PDL1/2746]	MC0300	
Podoplanin [D2-40]	MC0329	A useful marker in identification of lymphatic invasion of primary tumors, may be a specific marker for cells of mesothelial origin
PR [EP2]	RM0164	Invasive breast cancer marker; useful to differentiate infiltrating ductal (+) vs adenoid cystic (-)
PR [MD8R]	RM0264	
PR [PR484]	MC0920	
PR [SP2]	RM0265	
PR [SP42]	RM0453	
SOX2 [MD113R]	RM0179	A novel SOX2-mediated regulatory axis that plays critical roles in the proliferation, migration and invasiveness of breast cancer cells
SOX2 [SOX2/1791]	MC0299	
STMN1/Stathmin1 [SP49]	RM0318	A potential tool for predicting the outcome of breast cancer patients with lymph node metastasis
TFF1/pS2 [MD119R]	RM0183	Expressed predominantly in gastric epithelia, in the upper portion of the glandular pits, and highly expressed in some adenoca. such as breast cancer

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