

ErbB2 (HER-2) Recombinant Rabbit Monoclonal Antibody (SP3)

Catalog NumberMA1-39544

Product data sheet

Details		Species Reactivity	
Size	1 mL	Species reactivity	Human
Host/Isotope	Rabbit / IgG	Published species	Human, Mouse, Not Applicable
Class	Recombinant Monoclonal	Tested Applications	Dilution *
Type	Antibody	Immunohistochemistry (Paraffin) (IHC (P))	1:100
Clone	SP3	Published Applications	
Immunogen	Recombinant protein encoding extracellular domain of human c-erbB2	Immunohistochemistry (IHC)	See 70 publications below
Conjugate	Unconjugated	Immunohistochemistry (Paraffin) (IHC (P))	See 9 publications below
Form	Liquid	Immunocytochemistry (ICC/IF)	See 3 publications below
Concentration	0.122 mg/mL	Western Blot (WB)	See 2 publications below
Purification	Protein A	* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.	
Storage buffer	PBS, pH 7.2, with 1% BSA		
Contains	0.1% sodium azide		
Storage Conditions	-20° C, Avoid Freeze/Thaw Cycles		

Product specific information

Heat-mediated antigen retrieval is recommended prior to staining, using a 10mM citrate buffer, pH 6.0, for 10 minutes followed by cooling at room temperature for 20 min. Following antigen retrieval, incubate samples with primary antibody for 30 min at room temperature. A suggested positive control is breast carcinoma.

Background/Target Information

ErbB2 (HER2) is a receptor tyrosine kinase that is overexpressed in some breast tumors. Herceptin, used in treatment of metastatic Her2-positive cancer, is monoclonal antibody targeting this kinase.

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PubMed References For ErbB2 (HER-2) Recombinant Rabbit Monoclonal Antibody (SP3)

70 Immunohistochemistry References

Species / Dilution	Summary
	MA5-16348 was used in immunohistochemistry to study potential prognostic markers in Hungarian breast cancer patients
Human / Not Cited	Anticancer research (2007; 27: 279) "Prognostic factors in Hungarian breast cancer patients." Author(s):Nádasi E,Anga B,Sándor J,Megyesi J,Kelemen D,Mottolese M,Natali PG,Hegedus G,Arany I,Ember I PubMed Article URL: http://www.ncbi.nlm.nih.gov/pubmed/17352244
Human / 1:50	MA1-39544 was used in immunohistochemistry to investigate the mechanism for cellular susceptibility to Herceptin
	Breast cancer research : BCR (2010; 11:) "Presence of HER4 associates with increased sensitivity to Herceptin in patients with metastatic breast cancer." Author(s):Sassen A,Diermeier-Daucher S,Sieben M,Ortmann O,Hofstaedter F,Schwarz S,Brockhoff G PubMed Article URL: http://dx.doi.org/10.1186/bcr2339
Human / Not Cited	MA1-39544 was used in immunohistochemistry to evaluate potential biomarkers for the selection of breast cancer treatment regimens
	BMC cancer (2009; 9:) "The potential biomarkers in predicting pathologic response of breast cancer to three different chemotherapy regimens: a case control study." Author(s):Wang L,Jiang Z,Sui M,Shen J,Xu C,Fan W PubMed Article URL: http://dx.doi.org/10.1186/1471-2407-9-226
Human / 1:100	MA5-16348 was used in immunohistochemistry to study the prognostic value of the immunohistochemical expression of various cell cycle proteins in patients with stage II and stage III colon cancer
	Annals of surgical oncology (2012; 19 Suppl 3: S682) "Cell cycle proteins predict recurrence in stage II and III colon cancer." Author(s):Belt EJ,Brosens RP,Delis-van Diemen PM,Bril H,Tijssen M,van Essen DF,Heymans MW,Beliën JA,Stockmann HB,Meijer S,Meijer GA PubMed Article URL: http://dx.doi.org/10.1245/s10434-012-2216-7
Human / 1:100	MA1-39544 was used in immunohistochemistry to investigate one-carbon metabolism dysfunction in breast cancer progression
	Molecular carcinogenesis (2012; 51 Suppl 1: E32) "Association of aberrations in one-carbon metabolism with molecular phenotype and grade of breast cancer." Author(s):Naushad SM,Pavani A,Rupasree Y,Divyya S,Deepti S,Digumarti RR,Gottumukkala SR,Prayaga A,Kutala VK PubMed Article URL: http://dx.doi.org/10.1002/mc.21830
Human / 1:50	MA1-39544 was used in immunohistochemistry to evaluate tumor cell markers during malignant development in Barrett esophagus
	American journal of clinical pathology (2008; 130: 745) "Immunohistochemical evaluation of a panel of tumor cell markers during malignant progression in Barrett esophagus." Author(s):van Dekken H,Hop WC,Tilanus HW,Haringsma J,van der Valk H,Wink JC,Vissers KJ PubMed Article URL: http://dx.doi.org/10.1309/AJCPO31THGVEUIDH
Human / Not Cited	MA1-39544 was used in immunohistochemistry to evaluate a novel processing method for breast whole-mount histopathology imaging
	American journal of clinical pathology (2009; 131: 383) "An improved processing method for breast whole-mount serial sections for three-dimensional histopathology imaging." Author(s):Sun L,Wang D,Zubovits JT,Yaffe MJ,Clarke GM PubMed Article URL: http://dx.doi.org/10.1309/AJCPVBZZ4IKJHY3U
Human / 1:50	MA1-39544 was used in immunohistochemistry to characterize the relationship between breast cancer immunohistochemistry and prognosis
	Asian Pacific journal of cancer prevention : APJCP (2010; 10: 773) "Immunohistochemical analysis of ER, PR, Her2 and CK5/6 in infiltrative breast carcinomas in Indian patients." Author(s):Munjal K,Ambaye A,Evans MF,Mitchell J,Nandedkar S,Cooper K PubMed Article URL: http://www.ncbi.nlm.nih.gov/pubmed/20104967

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	MA1-39544 was used in immunohistochemistry to define the prognostic markers of basal-like breast cancer
Human / 1:100	<p>Clinical cancer research : an official journal of the American Association for Cancer Research (2008; 14: 1368) "Basal-like breast cancer defined by five biomarkers has superior prognostic value than triple-negative phenotype." Author(s):Cheang MC,Voduc D,Bajdik C,Leung S,McKinney S,Chia SK,Perou CM,Nielsen TO PubMed Article URL:http://dx.doi.org/10.1158/1078-0432.CCR-07-1658</p>
Human / 1:80	<p>MA5-16348 was used in immunohistochemistry to compare the tissue microarray immunoprofiles of in situ and invasive breast carcinoma components within the same sample</p> <p>Human pathology (2011; 42: 1438) "Molecular phenotypes of matched in situ and invasive components of breast carcinomas." Author(s):Martins D,Sousa B,Lopes N,Gomes M,Veronese L,Albergaria A,Paredes J,Schmitt F PubMed Article URL:http://dx.doi.org/10.1016/j.humpath.2010.08.024</p>
Human / 1:100	<p>MA1-39544 was used in immunohistochemistry to evaluate the methods to detect HER-2 detection in tumors</p> <p>BMC cancer (2009; 9:) "Quantitative real-time RT-PCR and chromogenic in situ hybridization: precise methods to detect HER-2 status in breast carcinoma." Author(s):Rosa FE,Silveira SM,Silveira CG,Bérgamo NA,Neto FA,Domingues MA,Soares FA,Caldeira JR,Rogatto SR PubMed Article URL:http://dx.doi.org/10.1186/1471-2407-9-90</p>
Human / 1:100	<p>MA5-16348 was used in immunohistochemistry to identify prognostic biomarkers for breast cancer involving 4 or more axillary lymph nodes</p> <p>Breast cancer research : BCR (2008; 10:) "Can clinically relevant prognostic subsets of breast cancer patients with four or more involved axillary lymph nodes be identified through immunohistochemical biomarkers? A tissue microarray feasibility study." Author(s):Crabb SJ,Bajdik CD,Leung S,Speers CH,Kennecke H,Huntsman DG,Gelmon KA PubMed Article URL:http://dx.doi.org/10.1186/bcr1847</p>
Human / Not Cited	<p>MA5-16348 was used in immunohistochemistry to establish a panel of biologically diverse and phenotypically stable transplantable cell lines from patient tissues for use in xenograft models of breast cancer</p> <p>Cancer research (2013; 73: 4885) "A renewable tissue resource of phenotypically stable, biologically and ethnically diverse, patient-derived human breast cancer xenograft models." Author(s):Zhang X,Claerhout S,Prat A,Dobrolecki LE,Petrovic I,Lai Q,Landis MD,Wiechmann L,Schiff R,Giuliano M,Wong H,Fuqua SW,Contreras A,Gutierrez C,Huang J,Mao S,Pavlick AC,Froehlich AM,Wu MF,Tsimelzon A,Hilsenbeck SG,Chen ES,Zuloaga P,Shaw CA,Rimawi MF,Perou CM,Mills GB,Chang JC,Lewis MT PubMed Article URL:http://dx.doi.org/10.1158/0008-5472.CAN-12-4081</p>
Human / Not Cited	<p>MA5-16348 was used in immunohistochemistry to perform a literature survey of ErbB2-positive breast cancer in Asia</p> <p>Cancer (2010; 116: 5348) "The prevalence and assessment of ErbB2-positive breast cancer in Asia: a literature survey." Author(s):Tan YO,Han S,Lu YS,Yip CH,Sunpaweravong P,Jeong J,Caguioa PB,Aggarwal S,Yeoh EM,Moon H PubMed Article URL:http://dx.doi.org/10.1002/cncr.25476</p>
Human / Not Cited	<p>MA5-16348 was used in immunohistochemistry to study the prognostic value of CD105 expression in breast cancers</p> <p>Experimental and therapeutic medicine (2012; 4: 231) "Neovascularization evaluated by CD105 correlates well with prognostic factors in breast cancers." Author(s):Rau KM,Huang CC,Chiu TJ,Chen YY,Lu CC,Liu CT,Pei SN,Wei YC PubMed Article URL:http://dx.doi.org/10.3892/etm.2012.594</p>
Human / 1:100	<p>MA5-16348 was used in immunohistochemistry to study the efficacy of trastuzumab therapy in salivary duct carcinoma and the clinical value of HER2 testing</p> <p>The oncologist (2013; 18: 294) "Trastuzumab for the treatment of salivary duct carcinoma." Author(s):Limaye SA,Posner MR,Krane JF,Fonfria M,Lorch JH,Dillon DA,Shreenivas AV,Tishler RB,Haddad RI PubMed Article URL:http://dx.doi.org/10.1634/theoncologist.2012-0369</p>
Human / Not Cited	<p>MA1-39544 was used in immunohistochemistry to examine the therapeutic potential of HSP90 inhibitor NVP-AUY922 in breast cancer treatment</p> <p>Breast cancer research : BCR (2008; 10:) "NVP-AUY922: a small molecule HSP90 inhibitor with potent antitumor activity in preclinical breast cancer models." Author(s):Jensen MR,Schoepfer J,Radimerski T,Massey A,Guy CT,Brueggen J,Quadt C,Buckler A,Cozens R,Drysdale MJ,Garcia-Echeverria C,Chène P PubMed Article URL:http://dx.doi.org/10.1186/bcr1996</p>

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	MA5-16348 was used in immunohistochemistry to study a tissue micro-array approach for monitoring the sensitivity and specificity of HER2 measurements in breast cancer
Human / Not Cited	Breast cancer research : BCR (2012; 14:) "Determining sensitivity and specificity of HER2 testing in breast cancer using a tissue micro-array approach." Author(s):Dekker TJ,Borg ST,Hooijer GK,Meijer SL,Wesseling J,Boers JE,Schuuring E,Bart J,van Gorp J,Mesker WE, Kroep JR,Smit VT,van de Vijver MJ PubMed Article URL: http://dx.doi.org/10.1186/bcr3208
	MA1-39544 was used in immunohistochemistry to investigate the reliability of rabbit monoclonal antibody immunohistochemical testing
Human / Not Cited	American journal of clinical pathology (2010; 134: 621) "The reliability of rabbit monoclonal antibodies in the immunohistochemical assessment of estrogen receptors, progesterone receptors, and HER2 in human breast carcinomas." Author(s):Rhodes A,Sarson J,Assam EE,Dean SJ,Cribb EC,Parker A PubMed Article URL: http://dx.doi.org/10.1309/AJCPOG3O3KTPZQNK
	MA5-16348 was used in immunohistochemistry to develop a customized microarray for the clinical classification of breast tumors
Human / Not Cited	Clinical cancer research : an official journal of the American Association for Cancer Research (2008; 14: 461) "Clinical validation of a customized multiple signature microarray for breast cancer." Author(s):Tan BK,Tan LK,Yu K,Tan PH,Lee M,Sii LH,Wong CY,Ho GH,Yeo AW,Chow PK,Koong HN,Yong WS,Lim DT, Ooi LL,Soo KC,Tan P PubMed Article URL: http://dx.doi.org/10.1158/1078-0432.CCR-07-0999
	MA1-39544 was used in immunohistochemistry to investigate the association between paxillin expression and HER2 expression in breast cancer patients
Human / 1:800	The breast journal (2007; 13: 130) "The expression of the cytoskeletal focal adhesion protein paxillin in breast cancer correlates with HER2 overexpression and may help predict response to chemotherapy: a retrospective immunohistochemical study." Author(s):Short SM,Yoder BJ,Tarr SM,Prescott NL,Laniauskas S,Coleman KA,Downs-Kelly E,Pettay JD,Choueiri TK, Crowe JP,Tubbs RR,Budd TG,Hicks DG PubMed Article URL: http://dx.doi.org/10.1111/j.1524-4741.2007.00389.x
	MA1-39544 was used in immunohistochemistry to compare the genomic changes between primary breast cancer and their metastases
Human / 1:100	Genes, chromosomes & cancer (2009; 48: 1091) "Genomic alterations in primary breast cancers compared with their sentinel and more distal lymph node metastases: an aCGH study." Author(s):Wang C,Iakovlev VV,Wong V,Leung S,Warren K,Iakovleva G,Arneson NC,Pintilie M,Miller N,Youngson B, McCready DR,Done SJ PubMed Article URL: http://dx.doi.org/10.1002/gcc.20711
	MA5-16348 was used in immunohistochemistry to study the prognostic value of the progesterone receptor in adjuvant tamoxifen therapy of breast cancer
Human / 1:100	Breast cancer research and treatment (2010; 119: 53) "Progesterone receptor is a significant factor associated with clinical outcomes and effect of adjuvant tamoxifen therapy in breast cancer patients." Author(s):Liu S,Chia SK,Mehl E,Leung S,Rajput A,Cheang MC,Nielsen TO PubMed Article URL: http://dx.doi.org/10.1007/s10549-009-0318-0
	MA1-39544 was used in immunohistochemistry to investigate the efficacy of Trastuzumab-DM1 for the treatment of gastric cancer expressing HER2
Human / Not Cited	Cancer letters (2011; 306: 171) "Trastuzumab-DM1 is highly effective in preclinical models of HER2-positive gastric cancer." Author(s):Barok M,Tanner M,Köninki K,Isola J PubMed Article URL: http://dx.doi.org/10.1016/j.canlet.2011.03.002
	MA1-39544 was used in immunohistochemistry to investigate the diagnostic values of Bc1, Bc2 and Bc3 in early breast cancer
Human / Not Cited	International journal of medical sciences (2011; 8: 148) "The value of serum biomarkers (Bc1, Bc2, Bc3) in the diagnosis of early breast cancer." Author(s):Atahan K,Küpeli H,Gür S,Yiitba T,Baskn Y,Yiit S,Deniz M,Cökmez A,Tarcan E PubMed Article URL: http://dx.doi.org/10.7150/ijms.8.148

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	MA5-16348 was used in immunohistochemistry to study the expression of the stem cell marker ALDH1 in BRCA1 related breast cancer
Human / 1:100	Cellular oncology (Dordrecht) (2011; 34: 3) "Expression of the stem cell marker ALDH1 in BRCA1 related breast cancer." Author(s):Heerma van Voss MR,van der Groep P,Bart J,van der Wall E,van Diest PJ PubMed Article URL: http://dx.doi.org/10.1007/s13402-010-0007-3
Human / 1:100	MA5-16348 was used in immunohistochemistry to study current targets for molecular therapy in esophageal squamous cell carcinoma Diseases of the esophagus : official journal of the International Society for Diseases of the Esophagus (2009; 22: 496) "Targets for molecular therapy in esophageal squamous cell carcinoma: an immunohistochemical analysis." Author(s):Boone J,van Hillegersberg R,Offerhaus GJ,van Diest PJ,Borel Rinkes IH,Ten Kate FJ PubMed Article URL: http://dx.doi.org/10.1111/j.1442-2050.2009.00951.x
Human / 1:100	MA1-39544 was used in immunohistochemistry to investigate the usefulness of HER2 for the prognosis of specific breast tumors Journal of clinical oncology : official journal of the American Society of Clinical Oncology (2008; 26: 5697) "Human epidermal growth factor receptor 2 overexpression as a prognostic factor in a large tissue microarray series of node-negative breast cancers." Author(s):Chia S,Norris B,Speers C,Cheang M,Gilks B,Gown AM,Huntsman D,Olivotto IA,Nielsen TO,Gelmon K PubMed Article URL: http://dx.doi.org/10.1200/JCO.2007.15.8659
Human / Not Cited	MA5-16348 was used in immunohistochemistry to study changes in biomarker expression between primary breast cancer and relapsed metastatic tumors using paired tissue microarray analysis The oncologist (2012; 17: 172) "Molecular alterations between the primary breast cancer and the subsequent locoregional/metastatic tumor." Author(s):Macfarlane R,Seal M,Speers C,Woods R,Masoudi H,Aparicio S,Chia SK PubMed Article URL: http://dx.doi.org/10.1634/theoncologist.2011-0127
Human / Not Cited	MA5-16348 was used in immunohistochemistry to study HER2 status in gastro-oesophageal adenocarcinomas using rabbit monoclonal antibodies and FISH/SISH Histopathology (2011; 58: 383) "HER2 status in gastro-oesophageal adenocarcinomas assessed by two rabbit monoclonal antibodies (SP3 and 4B5) and two in situ hybridization methods (FISH and SISH)." Author(s):Boers JE,Meeuwissen H,Methorst N PubMed Article URL: http://dx.doi.org/10.1111/j.1365-2559.2011.03760.x
Human / 1:800	MA1-39544 was used in immunohistochemistry to investigate the expression of RET finger protein in patients with breast carcinoma Pathology, research and practice (2009; 205: 403) "RET finger protein expression in invasive breast carcinoma: relationship between RFP and ErbB2 expression." Author(s):Tezel GG,Uner A,Yildiz I,Guler G,Takahashi M PubMed Article URL: http://dx.doi.org/10.1016/j.prp.2008.12.014
Human / 1:50	MA5-16348 was used in immunohistochemistry to study the value of using MLPA and CISH to determine HER2 status in patients with invasive breast cancer PloS one (2014; 8:) "Added value of HER-2 amplification testing by multiplex ligation-dependent probe amplification in invasive breast cancer." Author(s):Kuijpers CC,Moelans CB,van Slooten HJ,Horstman A,Hinrichs JW,Al-Janabi S,van Diest PJ, Jiwa M PubMed Article URL: http://dx.doi.org/10.1371/journal.pone.0082018
Human / 1:100	MA5-16348 was used in immunohistochemistry to study the prognostic value of HER2 expression and gene amplification in esophageal adenocarcinoma Annals of oncology : official journal of the European Society for Medical Oncology (2013; 24: 1290) "The significance of the HER-2 status in esophageal adenocarcinoma for survival: an immunohistochemical and an in situ hybridization study." Author(s):Prins MJ,Ruurda JP,van Diest PJ,van Hillegersberg R,Ten Kate FJ PubMed Article URL: http://dx.doi.org/10.1093/annonc/mds640
Human / 1:200	MA5-16348 was used in immunohistochemistry to study whether standard pathological parameters are predictive of Oncotype DX scores in a subset of estrogen receptor-positive breast cancer patients Breast cancer research and treatment (2012; 131: 413) "Routine pathologic parameters can predict Oncotype DX recurrence scores in subsets of ER positive patients: who does not always need testing?" Author(s):Allison KH,Kandalaf PL,Sitlani CM,Dintzis SM,Gown AM PubMed Article URL: http://dx.doi.org/10.1007/s10549-011-1416-3

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	MA5-16348 was used in immunohistochemistry to compare the expression of growth factor receptors and membrane-bound tumor markers in male and female breast cancer
Human / 1:100	<p>PloS one (2013; 8:)</p> <p>"Differential expression of growth factor receptors and membrane-bound tumor markers for imaging in male and female breast cancer."</p> <p>Author(s):Vermeulen JF,Kornegoor R,van der Wall E,van der Groep P,van Diest PJ</p> <p>PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0053353</p>
	MA1-39544 was used in immunohistochemistry to investigate GATA3 mutations and expression in Malaysian breast tumors
Human / 1:350	<p>The Malaysian journal of pathology (2010; 32: 117)</p> <p>"Expression and mutational analysis of GATA3 in Malaysian breast carcinomas."</p> <p>Author(s):Bong PN,Zakaria Z,Muhammad R,Abdullah N,Ibrahim N,Emran NA,Syed Hussain SN</p> <p>PubMed Article URL:http://www.ncbi.nlm.nih.gov/pubmed/21329183</p>
	MA1-39544 was used in immunohistochemistry to evaluate multiple monoclonal antibodies for breast cancer studies
Human / 1:100	<p>Diagnostic cytopathology (2009; 37: 251)</p> <p>"Evaluation of new monoclonal antibodies in detection of estrogen receptor, progesterone receptor, and Her2 protein expression in breast carcinoma cell block sections using conventional microscopy and quantitative image analysis."</p> <p>Author(s):Hanley KZ,Siddiqui MT,Lawson D,Cohen C,Nassar A</p> <p>PubMed Article URL:http://dx.doi.org/10.1002/dc.20989</p>
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9 Immunohistochemistry (Paraffin) References

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3 Immunocytochemistry References

Species / Dilution	Summary
Human / 1:40	MA5-16348 was used in immunocytochemistry to study the feasibility of performing cytopathological, immunohistochemical and molecular biological analyses on samples prepared using a combination of PreservCyt [®] and Cellient [®] technologies Diagnostic cytopathology (2013; 41: 734) "Effective application of the methanol-based PreservCyt(™) fixative and the Cellient(™) automated cell block processor to diagnostic cytopathology, immunocytochemistry, and molecular biology." Author(s):van Hemel BM,Suurmeijer AJ PubMed Article URL: http://dx.doi.org/10.1002/dc.22963
Human / Not Cited	MA5-16348 was used in immunocytochemistry and western blot to study the ability of a microfluidic device utilizing an anti-HER2 antibody to isolate circulating breast cancer and gastric cancer tumor cells Lab on a chip (2014; 14: 147) "Isolation of breast cancer and gastric cancer circulating tumor cells by use of an anti HER2-based microfluidic device." Author(s):Galletti G,Sung MS,Vahdat LT,Shah MA,Santana SM,Altavilla G,Kirby BJ,Giannakakou P PubMed Article URL: http://dx.doi.org/10.1039/c3lc51039e
Mouse / 1:50	MA1-39544 was used in immunocytochemistry to develop an in vivo model for noninvasive breast tumors Breast cancer research : BCR (2010; 11:) "An intraductal human-in-mouse transplantation model mimics the subtypes of ductal carcinoma in situ." Author(s):Behbod F,Kittrell FS,LaMarca H,Edwards D,Kerbawy S,Heestand JC,Young E,Mukhopadhyay P,Yeh HW,Allred DC,Hu M,Polyak K,Rosen JM,Medina D PubMed Article URL: http://dx.doi.org/10.1186/bcr2358

2 Western Blot References

Species / Dilution	Summary
Human / Not Cited	MA5-16348 was used in western blot to study a beta2-adrenergic receptor-Her2 positive feedback loop and its role in human breast cancer Breast cancer research and treatment (2011; 125: 351) "The 2-adrenergic receptor and Her2 comprise a positive feedback loop in human breast cancer cells." Author(s):Shi M,Liu D,Duan H,Qian L,Wang L,Niu L,Zhang H,Yong Z,Gong Z,Song L,Yu M,Hu M,Xia Q,Shen B,Guo N PubMed Article URL: http://dx.doi.org/10.1007/s10549-010-0822-2
Human / Not Cited	MA1-39544 was used in western blot to investigate the involvement of 14-3-3 delta in the chemotherapeutic sensitivity of MCF-7 cells FEBS letters (2012; 586: 163) "14-3-3 regulation by p53 mediates a chemotherapy response to 5-fluorouracil in MCF-7 breast cancer cells via Akt inactivation." Author(s):Zheng G,Xiong Y,Yi S,Zhang W,Peng B,Zhang Q,He Z PubMed Article URL: http://dx.doi.org/10.1016/j.febslet.2011.11.034

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