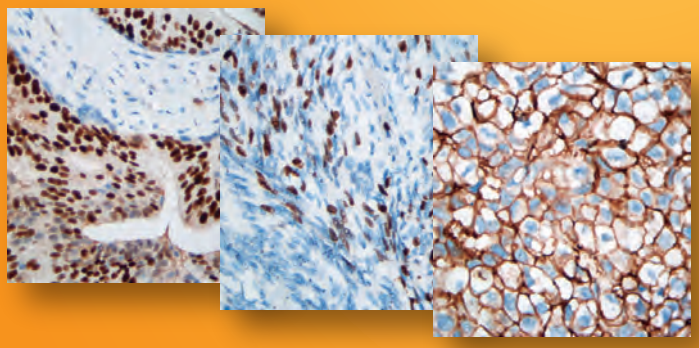
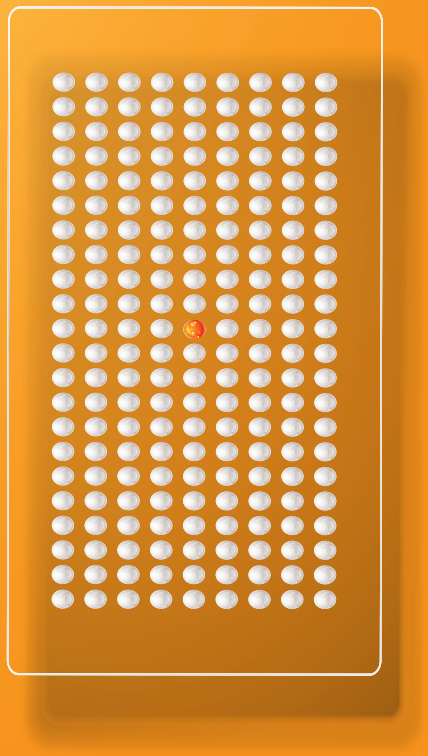
UltraMAB™

The Ultra Specific Antibodies

Validated against >10,000 human antigens





Confidence in your antibody,
Accuracy in your results.

ORIGENE
Your Gene Company
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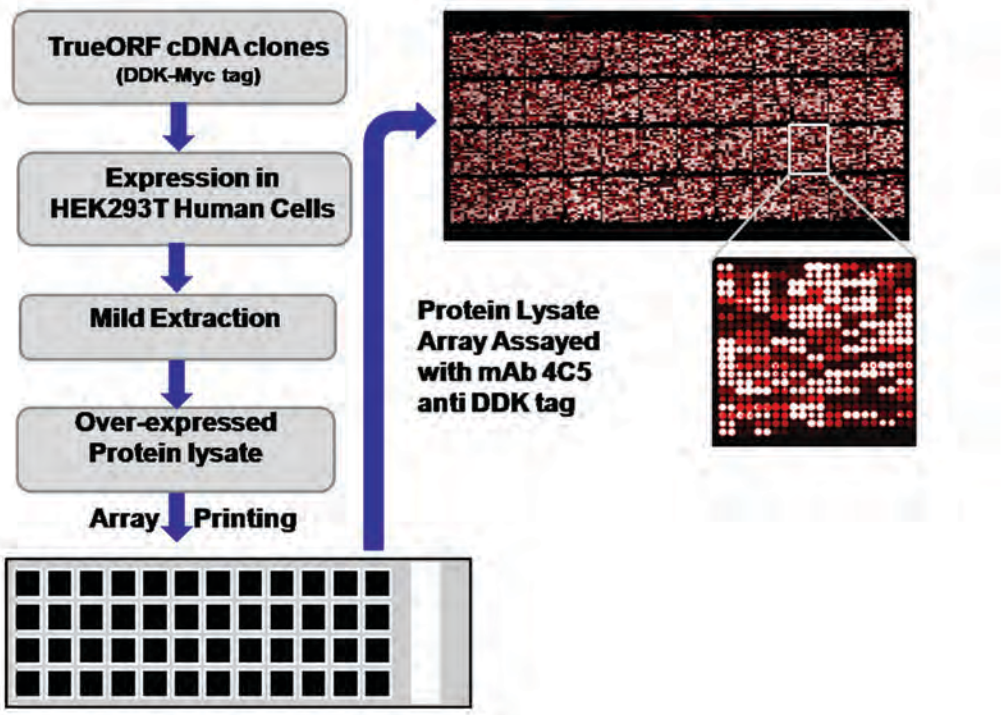
UltraMAB, the Ultra Specific IHC Antibodies

Trust Your IHC Antibodies

High-specificity is the pre-requisite for any antibody used in diagnostic and therapeutic applications. Antibody cross-reactivity will create unexpected side effects or false diagnostic reports for clinicians. Research data from various groups have shown that some monoclonal antibodies on the market are not mono-specific. Similar epitopes are sometimes found across multiple unrelated proteins.

Antibody Validation Technology

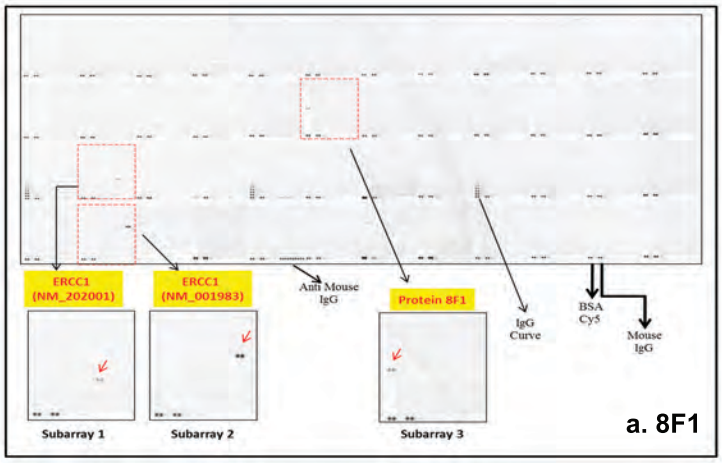
Protein microarray technology can evaluate antibody specificity at the proteome-wide level. With the world's largest collection of overexpression antigen standards, OriGene developed a high density protein microarry chip for antibody validation. This protein chip is spotted with over 10,00 unique overexpression proteins in duplicate on a single nitrocellulose coated glass slide. OriGene's protein microarray technology has been used to validate the specificity of an existing ERCC1 diagnostic monoclonal antibody, and has been applied as a screening method to identify the most specific TrueMAB™ monoclonal antibody for ERCC1.



OriGene's overexpression lysate protein microarray chip comprises of over 22,000 spots. It includes over 10,000 unique protein lysates printed in duplicate and large selections of positive and negative controls. The array was manufactured as indicated and tested with 1:500 dilution of OriGene's anti-DDK (TA500011) tag antibody followed by dylight 649 conjugated goat anti-mouse IgG secondary antibody.

A More Specific ERCC1 Antibody for NSCLC

The excision repair cross-complementation group 1 (ERCC1) protein is an important biomarker for clinicians to predict whether certain patient populations with non-small cell lung carcinoma (NSCLC) will respond to cisplatin chemotherapy. As such, it is critical to develop highly-specific immunohistochemistry validated monoclonal antibodies for this diagnostic test. Several publications reveal that 8F1, the most commonly used antibody clone for ERCC1, exhibits cross-reactivity to an unknown protein in ERCC1 deficient cell lines. By using OriGene's protein microarray technology, the corresponding cross-reactive binding protein for the 8F1 antibody was identified (Figure 1a). This technology also enabled OriGene to successfully develop the most specific UltraMAB™ monoclonal antibody for ERCC1 (clone 4F9) (Figure 1b). This data was further confirmed by western blot analysis (Figure 2) and in IHC by testing on an NSCLC tissue section (Figure 3).



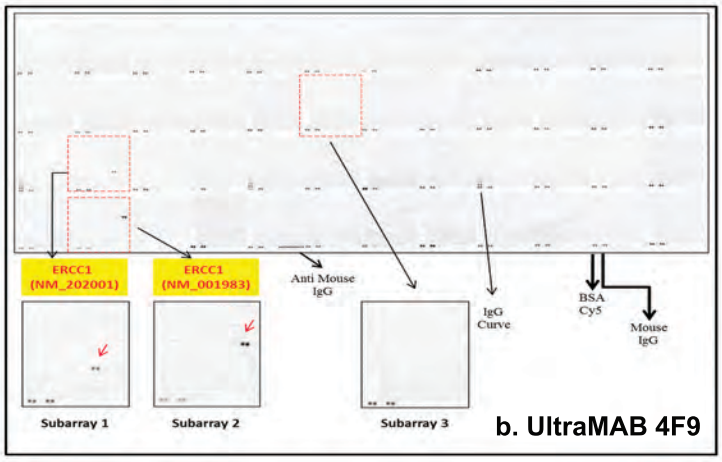


Figure 1. Specificity test results with OriGene's 10K protein microarray chip.
ERCC1 antibodies, 8F1 and UltraMAB 4F9, were used to immunostain a 10K protein microarray chip. 8F1 demonstrates recognition against two ERCC1 variants in subarrays 1 and 2 as well as a third protein in subarray 3, labeled as "Protein 8F1" (a). 4F9 specifically recognizes two ERCC1 variants in subarrays 1 and 2 with no additional proteins in subarray 3 (b).

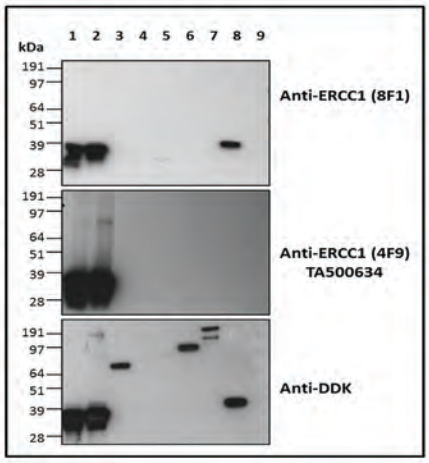


Figure 2. Western Blot Validation of the protein microarray chip data.
Eight gene-sepcific over-expression lysates (lane 1-8) and a empty vector control lysate (lane 9) were probed with 8F1 and UltraMAB 4F9. Lanes 1 and 2 are ERCC1 variants, and lane 8 is "Protein 8F1." The Western blot data verified the cross reactivity of 8F1 and confirms the specificity of UltrMAB 4F9. The lower panel is the control blot using anti-DDK antibody.

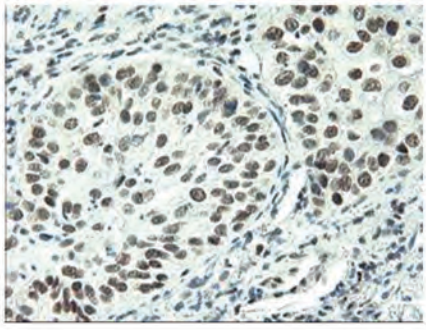


Figure 3. IHC staining of NSCLC tissue sections with ERCC1 UltraMAB 4F9.

Reference: D. Ma, et al., Using protein microarray technology to screen anti-ERCC1 monoclonal antibodies for specificity and applications in pathology. BMC Biotechnology. 2012 Nov 21;12(1):88

A Better HER2 Antibody for Breast Cancer Diagnostics

Human epidermal growth factor receptor 2 (HER2, also known as ERBB2, CD340 or p185 is a member of the epidermal growth factor receptor (EGFR/ErbB) family. Amplification or over-expression of this gene has been shown to play an important role in the pathogenesis and progression of certain aggressive types of breast cancer and gastric cancer and it has evolved to become an important biomarker and target of therapy for the disease.

A semi-quantitative immunohistochemical assay using anti-HER2 antibody is applied to determine HER2 protein overexpression in breast cancer tissues. The specificity of the HER2 antibody (e.g. Clone 4B5) is critical because the test results will help oncologist decide a patient should receive Herceptin™ treatment. By using OriGene's high-density protein microarray, we have revealed that the antibody 4B5 is not specific to HER2 protein. As shown in Figure 1, this antibody also reacts with ZSCAN1B and HER4 (ERBB4). In contrast, HER2 UltraMAB (Clone UMAB36) developed by OriGene only recognizes HER2 protein and is thus specific. The performance of HER2 UltraMABTM is also validated with IHC staining of breast cancer tissues (Figure 2).

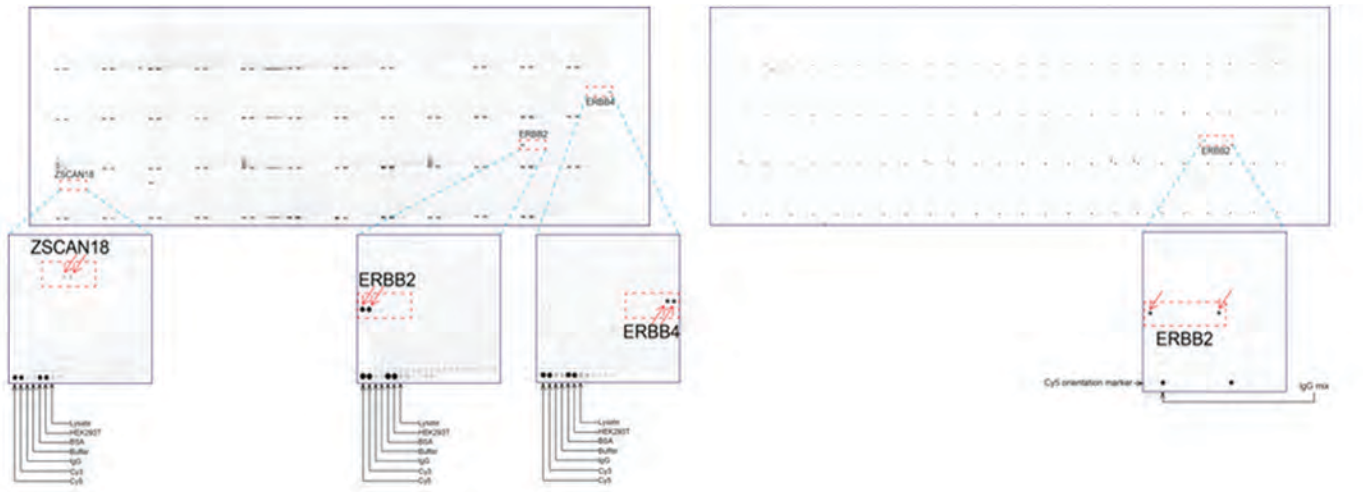


Figure 1. ERBB2 antibody specificity test results with OriGene's 10K protein microarray chip.
Antibody 4B5 (left) and OriGene's HER2 UltraMAB UM500036 (right). The commonly used diagnostic antibody 4B5 recognizes not only HER2 (ERBB2) protein, but also HER4 (ERBB4) and an unrelated protein ZSCAN18. OriGene's anti-HER2 UltraMAB recognizes only HER2 (ERBB2) protein.

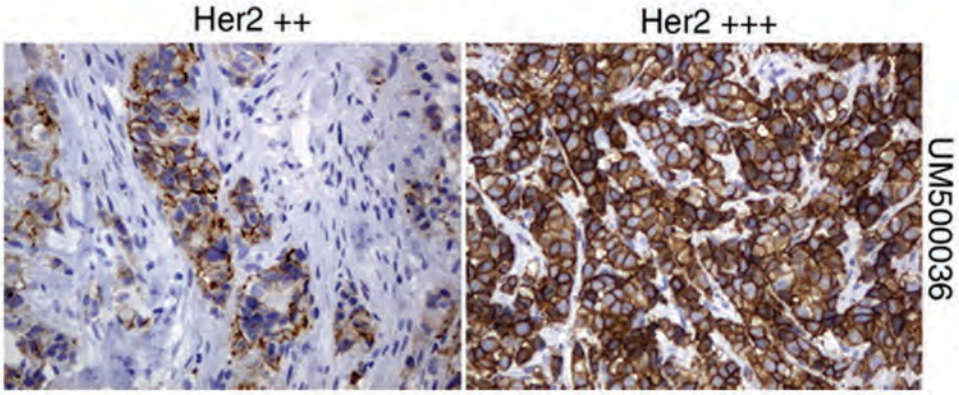


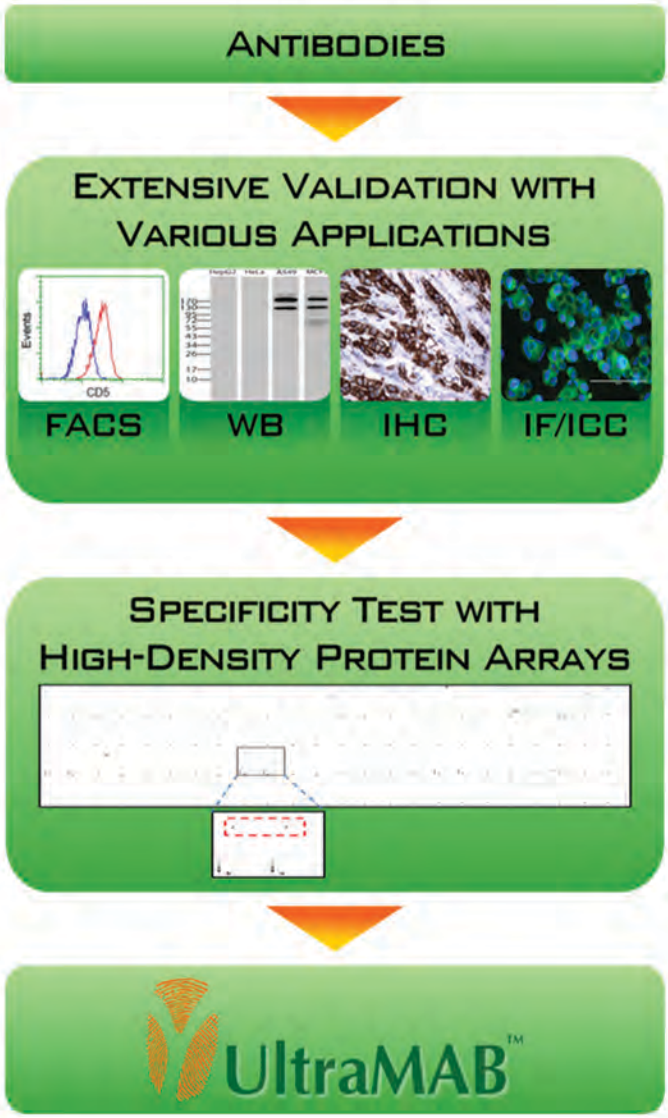
Figure 2. Immunohistochemical staining of paraffin-embedded Carcinoma of breast tissue (HER2+++) using anti-ERBB2 mouse monoclonal antibody. (Clone UMAB36, Dilution 1:100)

UltraMAB™ Development

The ultra specific antibody with outstanding performance

In additional to speficity, performance is also crucial to antibodies used for diagnostic and therapeutic applications. To ensure the superior performance, OriGene validates every UltraMAB™ monoclonal antibody according to the scientific findings and the medical records of related diseases. Major applications of validation include WB, IHC staining with over 25 types of normal and cancer human tissues, IF/ICC, and FACS.

UltraMAB™ Development Flowchart



Selected UltraMAB™s Available

ALDH1L1	BMP4	BTLA
BUB1B	CD1C	CD2
CD20	CD3E	CD4
CD5	DEF6	ERBB2
ERCC1	FCGR2A	FOLH1
GFAP	HP	JUN
KRT18	KRT19	KRT8
L1CAM	MEF2C	MGMT
MS4A1	MUC1	PECAM1
S100P	SOX5	SERPINB4
SQSTM1	TP53	B-Catenin
TP63	XPF	XRCC1

Interested? Try UltraMAB™ Today

- 30ul Trial Package
- Visit www.origene.com/ultramab

OriGene, Your Partner in Gene Research and Beyond

KEY TECHNOLOGIES AND PRODUCTS

- Full-length cDNA clones, ORF clones in expression-ready vectors
- Gene synthesis: any gene, any variant, any vector
- RNAi research reagents: shRNA, siRNA, and miRNA function and detection
- SYBR Green qPCR assays for mRNA and miRNA detection, primer panels
- Recombinant human proteins and overepxression lysates
- TrueMAB™ monoclonal antibodies
- Luminex multiplex immunoassays
- Cancer tissue biorepository, TMA, RPPA, and TissueScan qPCR arrays
- UltraMAB, the ultra specific antibodies

ORIGENE
Your Gene Company

OriGene USA
9620 Medical Center Drive, Suite 200
Rockville, MD 20850
1.301.340.3188
www.origene.com

ZS-Bio
Xuan Wu District
Building 2
South Riverside Road
Beijing, CHINA
86.010.6347481
www.zsbio.com

OriGene CHINA
HuiLongSen International Science
& Technology Industry Park
Build 11, No.99, Kechuang
Fourteenth Street, D4
Beijing, CHINA 101111
86.10.59755312
www.origene.com.cn