

Superior TrueMAB™ monoclonal antibodies for the recognition of proteins' native epitopes



Outlines

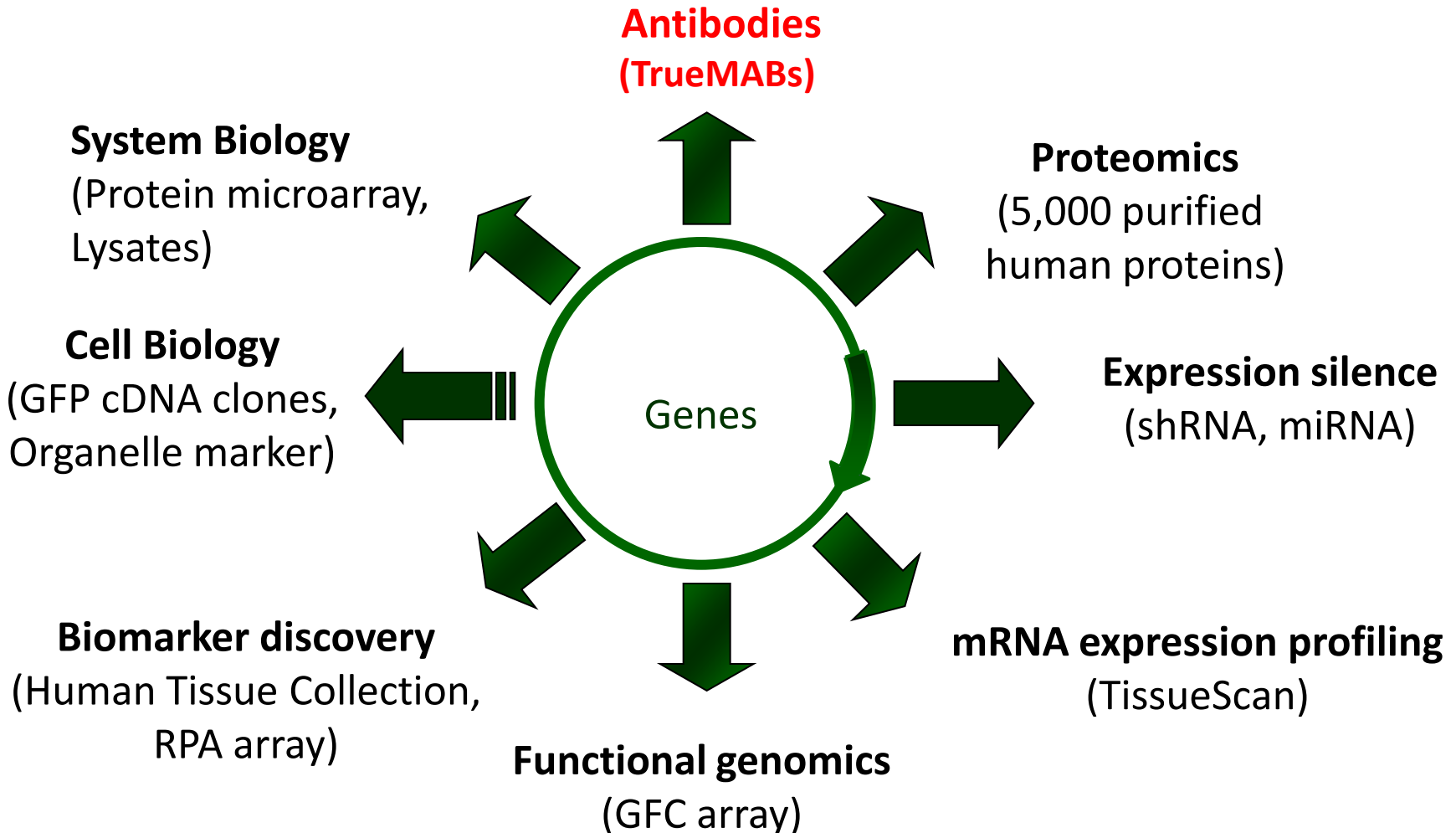
- Brief introduction of OriGene's mission on gene-centric product solution.
- TrueMAB monoclonal antibody development.
- The unique features on TrueMABs.

OriGene Technologies, Inc

• Missions

- To clone full-length cDNAs corresponding to every human gene
- To provide a full product solution for gene centric research
- To develop assays for every human protein

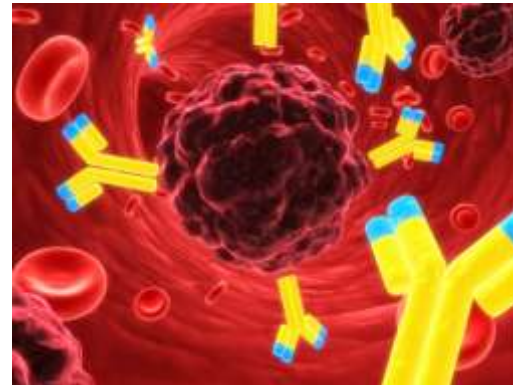
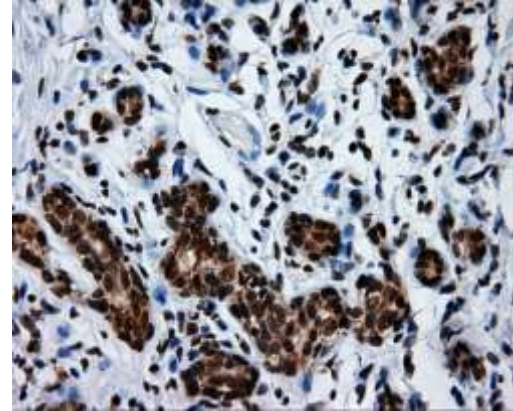
Gene-centric Products from OriGene



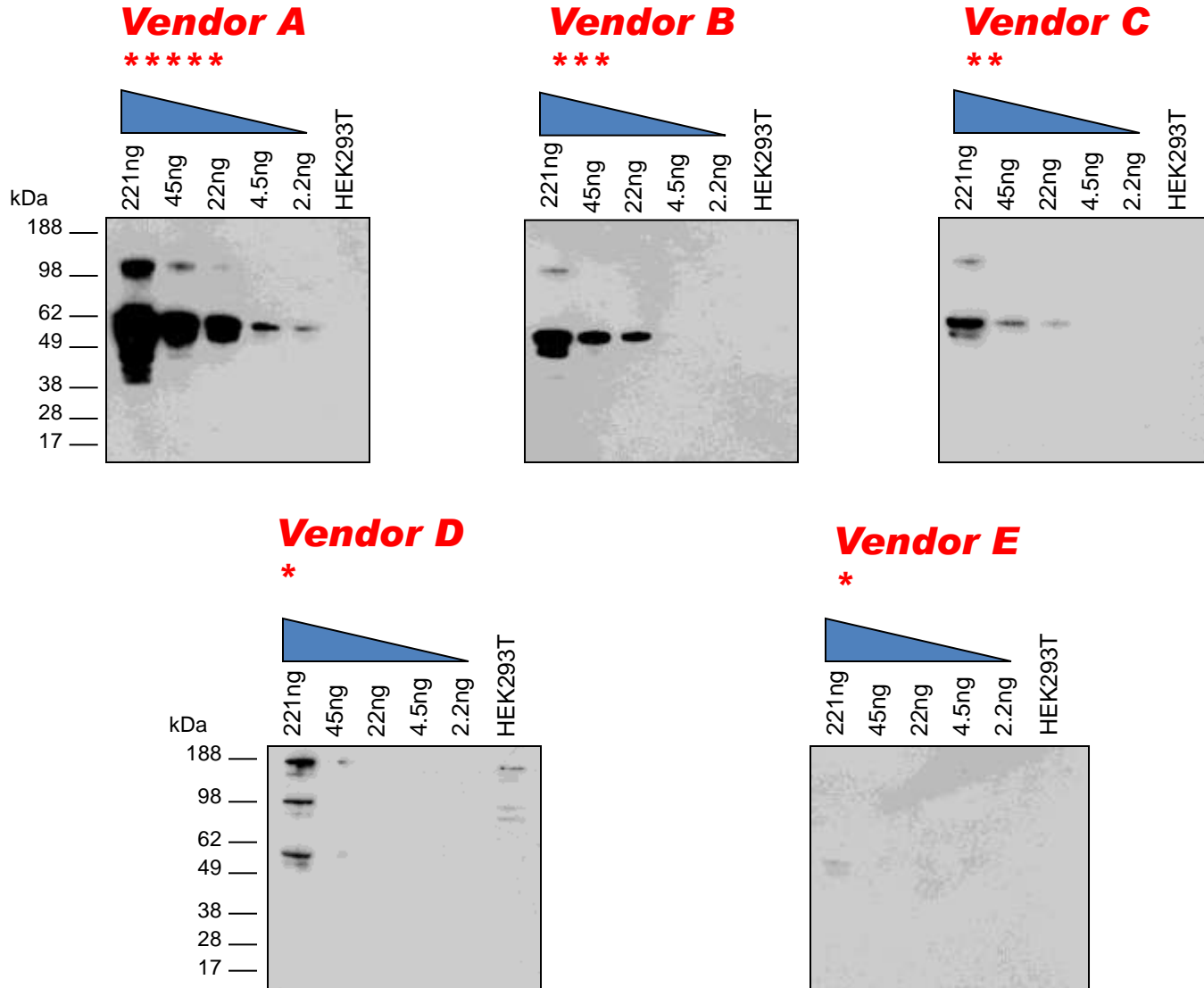
Monoclonal antibody for every human protein

Antibody and its applications

- Research reagents
- Diagnostics
- Therapeutics



The quality comparison of p53 antibodies from five different vendors



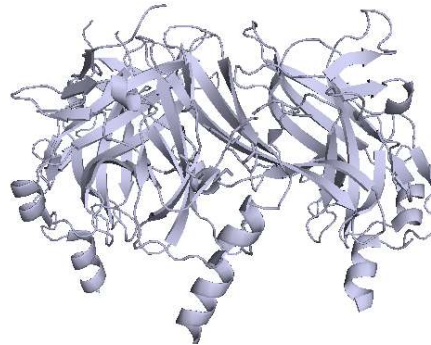
Challenges for high quality antibody generation

- Bottlenecks:
 - High quality immunogens.
 - Approaches for antibody generation.
 - Extensive validations for different immunoassays.
- **OriGene TrueMABs:**
 - **Human full length proteins as immunogens.**
 - **Mouse monoclonal antibodies.**
 - **Extensively validated.**

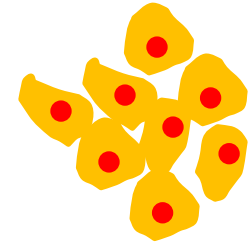
Immunogens used for antibody generation



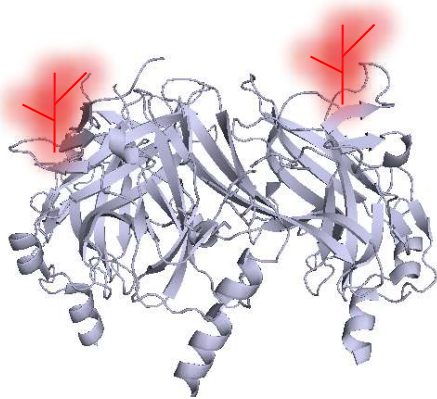
Peptides



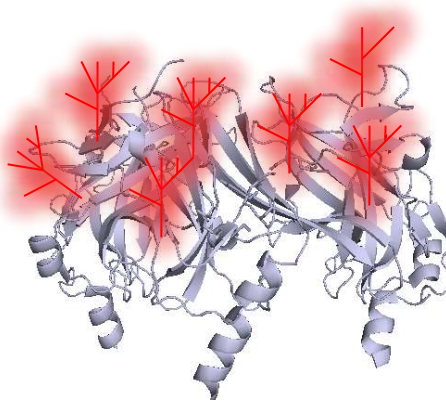
Proteins generated in Prokaryotic expression system



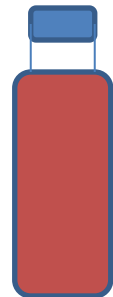
Whole cells



Proteins generated in Eukaryotic Expression system

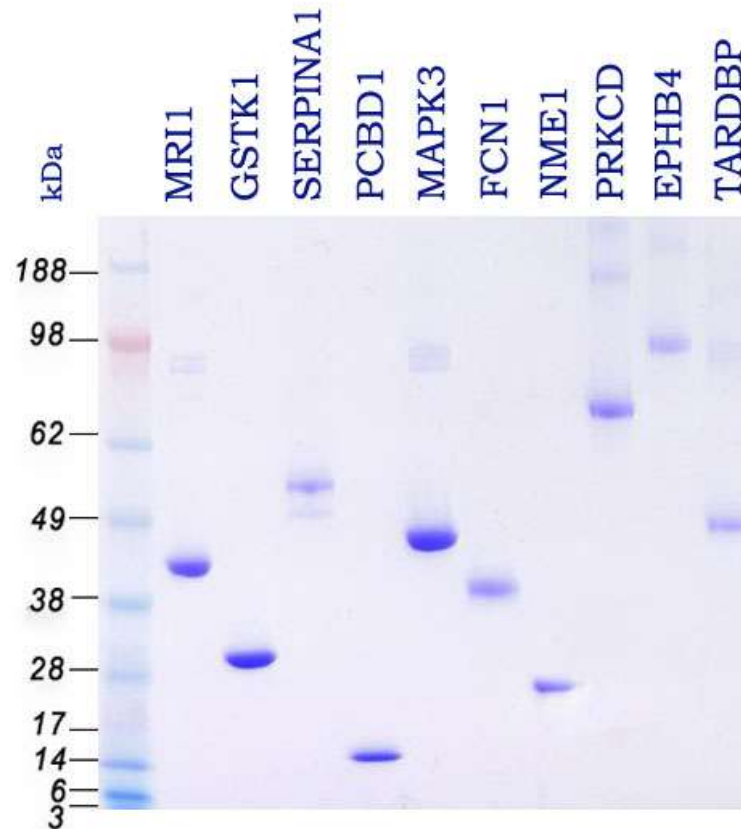


Native proteins



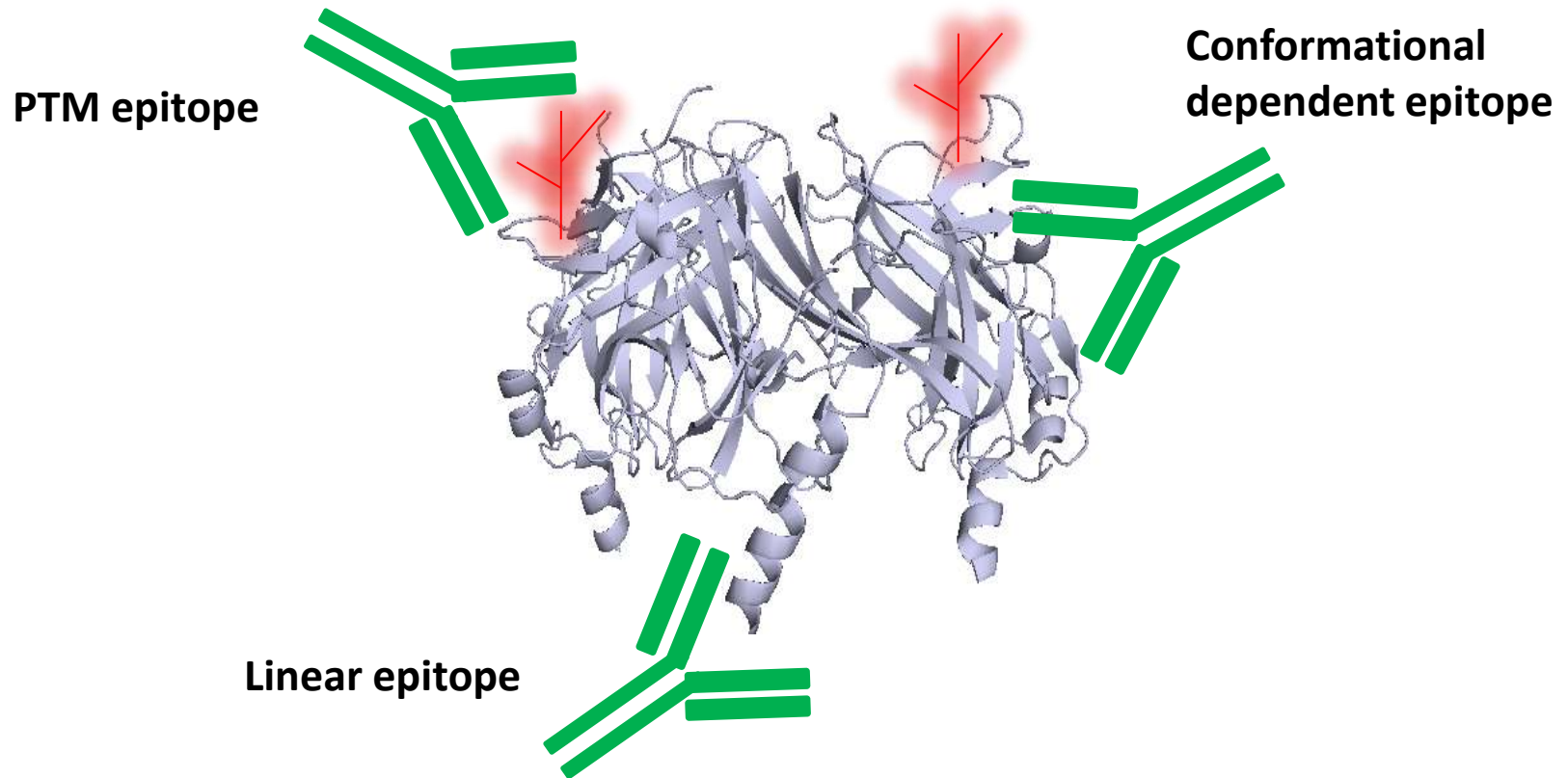
Fractionated biological samples

All OriGene TrueMABs were generated by using full length human recombinant proteins as immunogens



All the proteins were produced and purified from HEK293T cells.

The benefit of using high quality full length recombinant proteins as antigens



Why mAbs are the best quality reagents for biological research?

Polyclonal Antibody

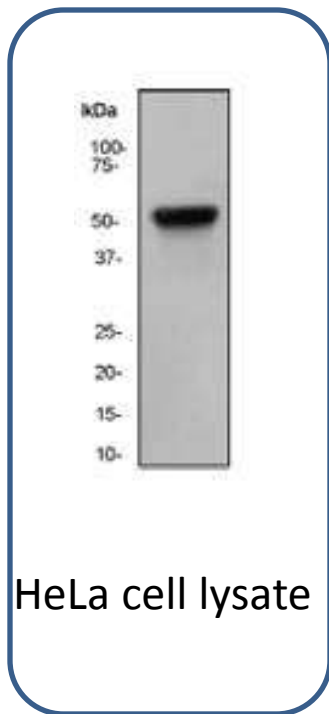
- High background
- High cross-reactivity
- Recognize multiple epitopes
- High batch to batch variability
- Simple process

Monoclonal Antibody

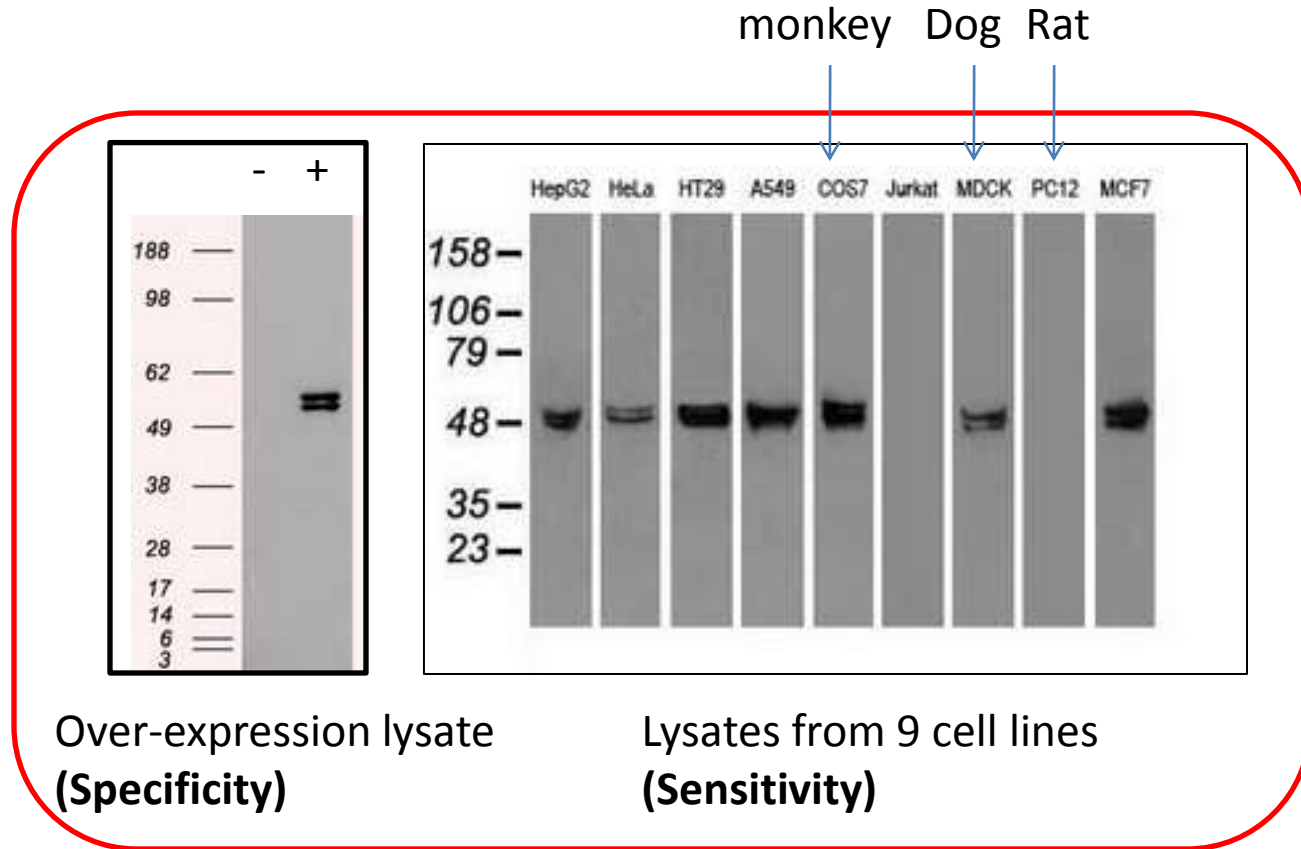
- Low background
- Low cross-reactivity
- Recognize only one epitope
- Consistent and renewable
- High technology required



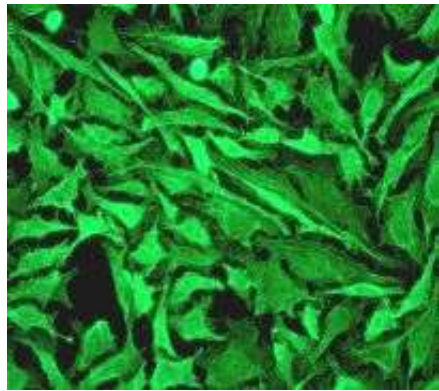
Why can OriGene's TrueMAB antibody give you peace of mind on antibody quality?



Western data from
other vendor's

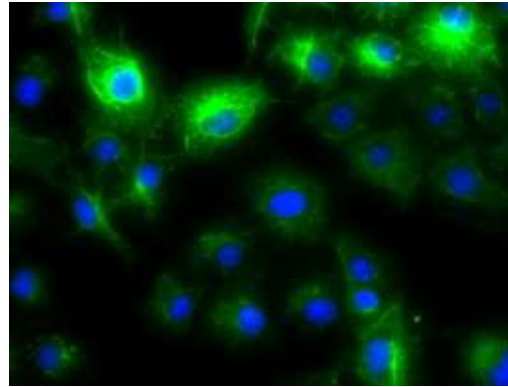


Western data from **OriGene**

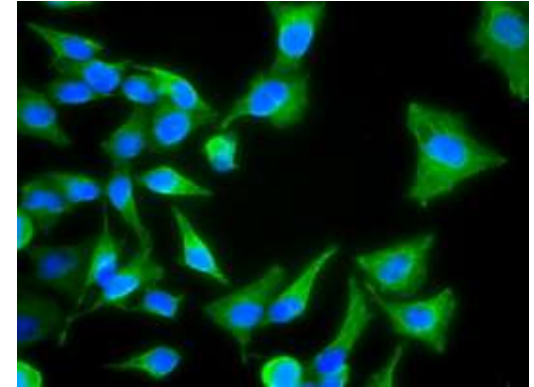


HeLa cells

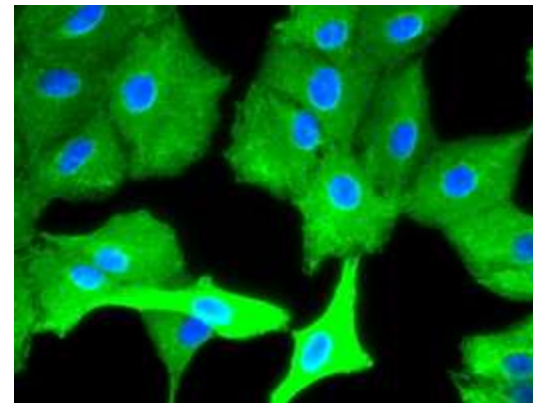
IF data from
other vendor's
Anti-KRT8 antibody



Transfected COS7 cells
(Specificity)



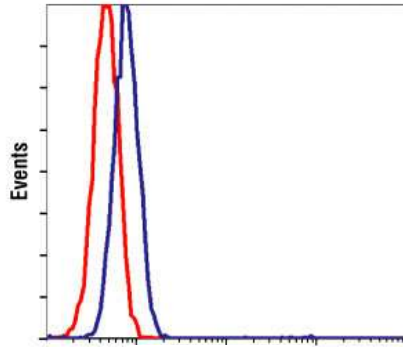
HeLa cells
(Sensitivity)



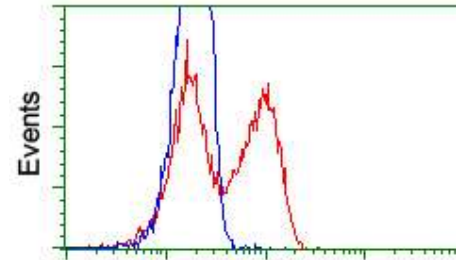
A549 cells
(Sensitivity)

IF data from **OriGene anti-KRT8 antibody**

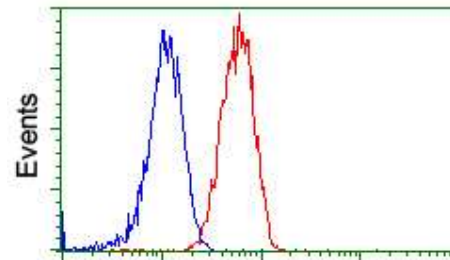
High quality mAbs for Flow cytometry applications



Typical Flow data from
other vendors



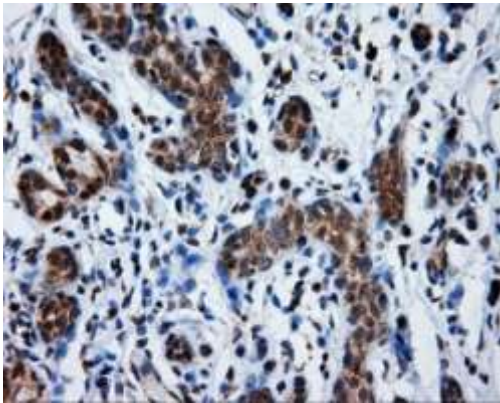
Transfected HEK293 cells
(Specificity test)



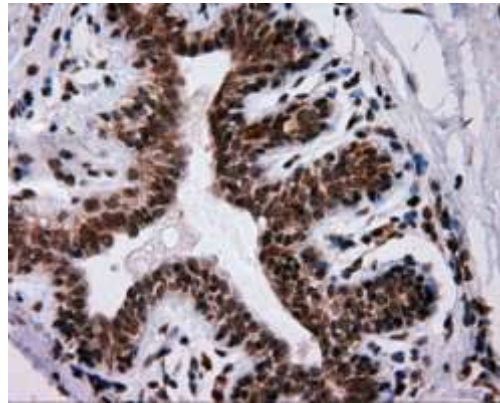
Staining for endogenous protein
(Sensitivity test)

Flow data from OriGene

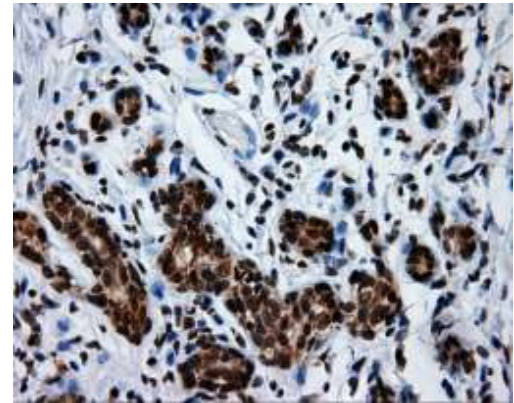
All OriGene antibodies were IHC-validated against 12 human normal and 12 human tumor tissues



ERCC1 (8F1)



ERCC1 (TA500622)



ERCC1 (TA500634)

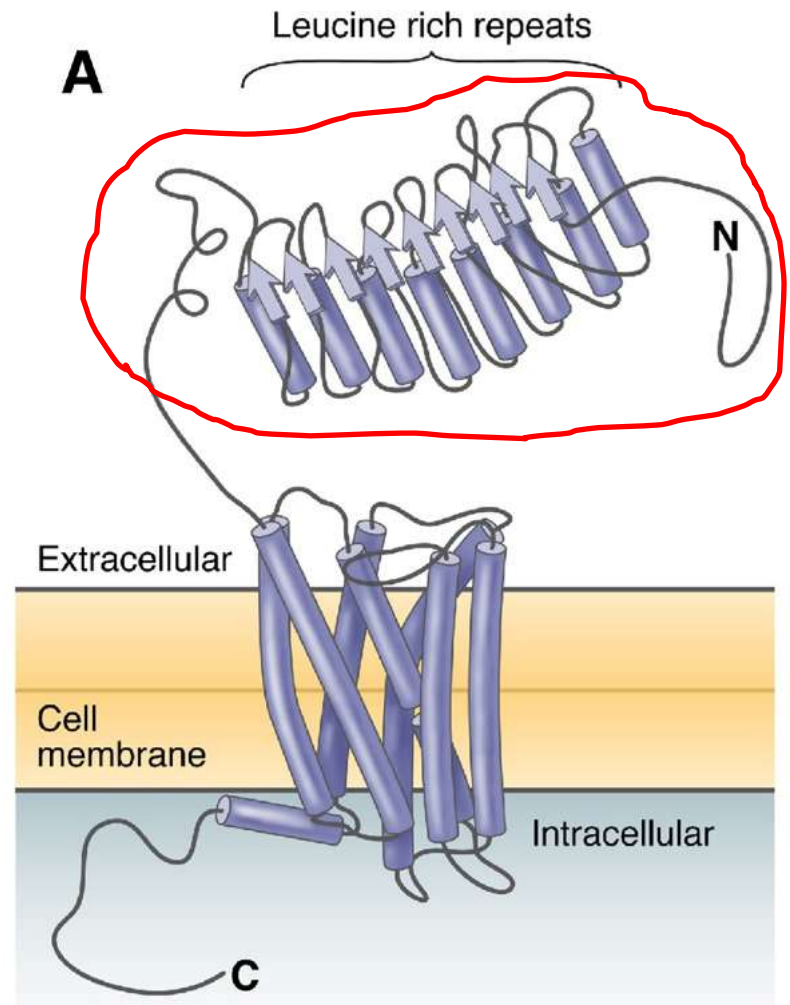
The performance of some of our antibodies are even better than
the existing diagnostic IHC antibody.

Gene centric product solution for TrueMAB generation

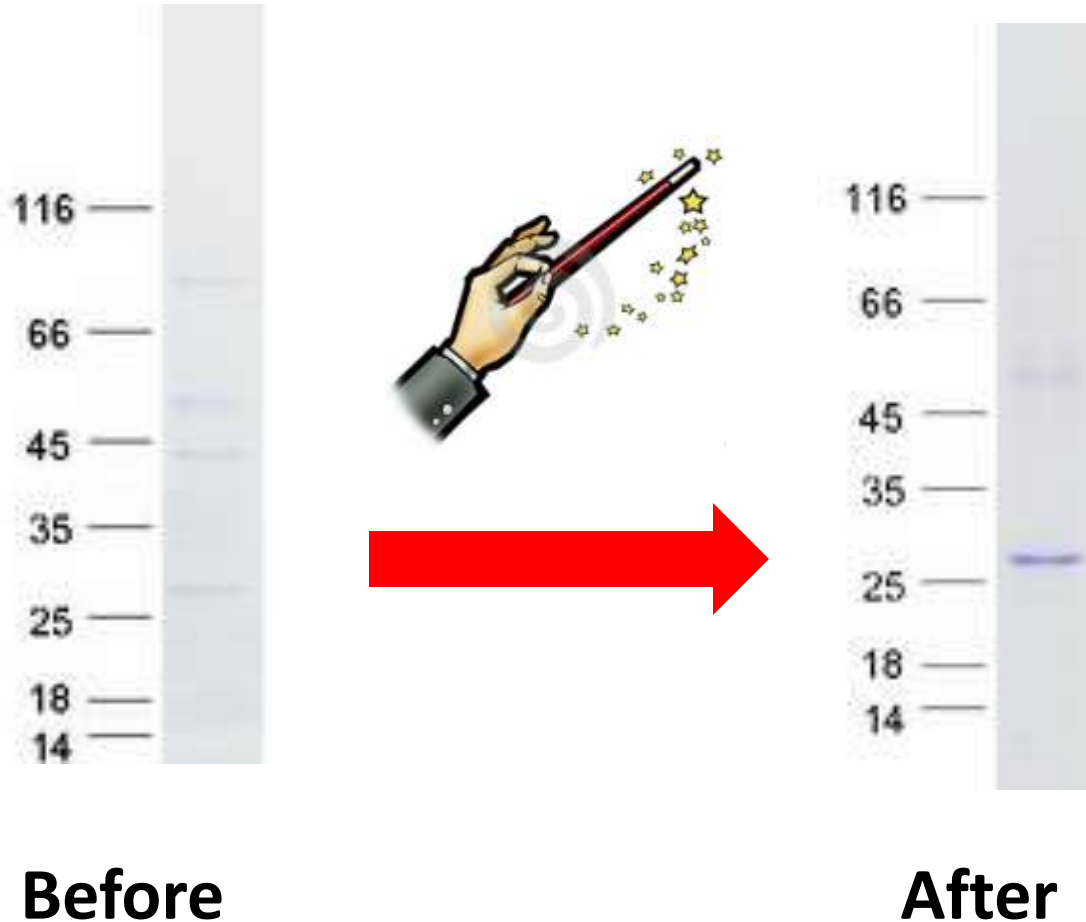
TrueMAB for stem cell biomarker LGR5

- **LGR5/GPR49:**

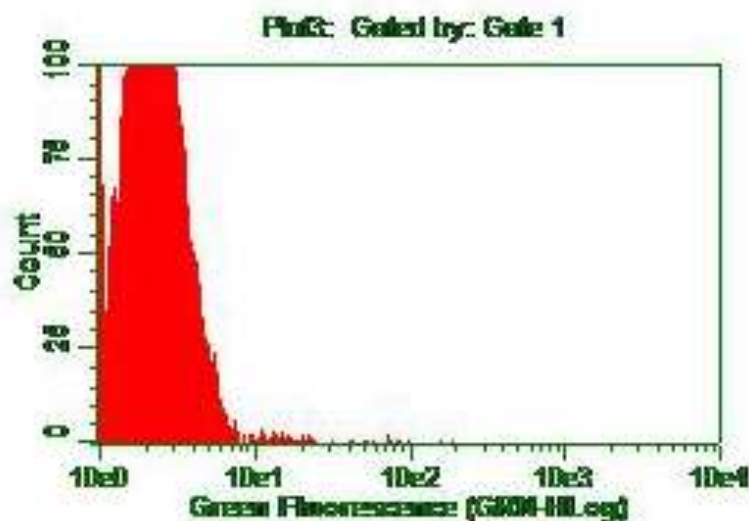
- Orphan GPCR protein
- Large extracellular domain
- Stem cell biomarker for small intestine
- Active in colon cancer; overexpressed in ovary and liver tumors
- **Currently no monoclonal antibodies available for flow cytometry applications.**



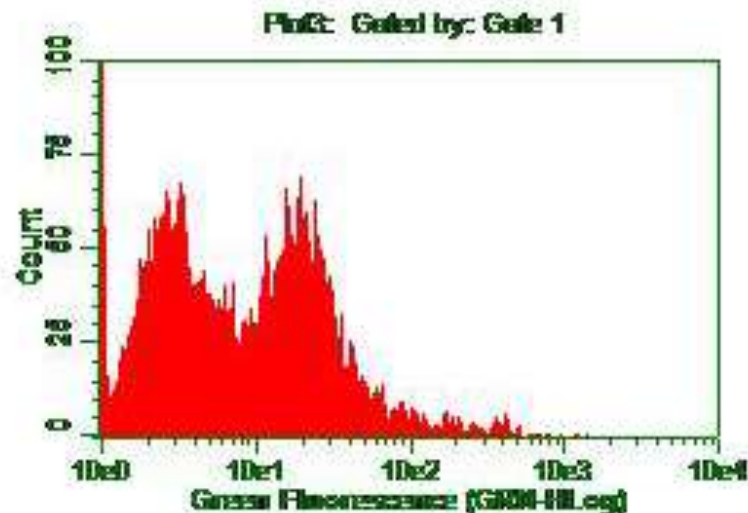
The extracellular domain of LGR5 was codon-optimized and purified for high quality TrueMAB generation



TrueMAB Anti-LGR5: The first monoclonal antibody for flow cytometry application



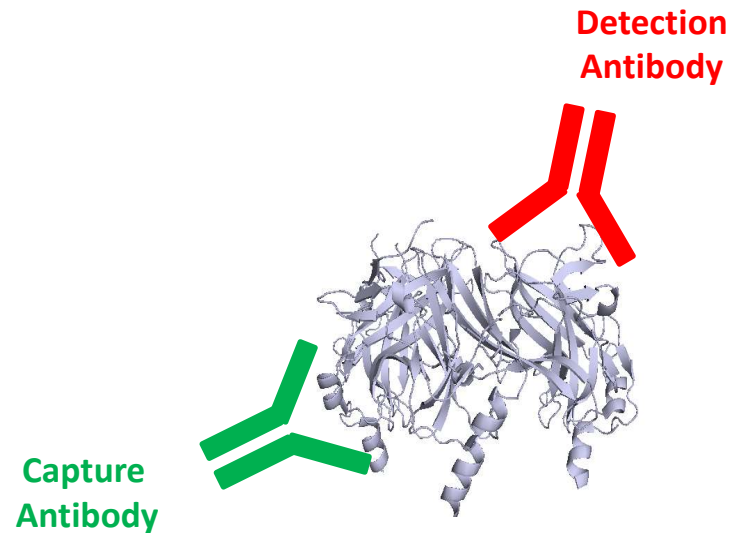
Negative control
(without anti-LGR5)



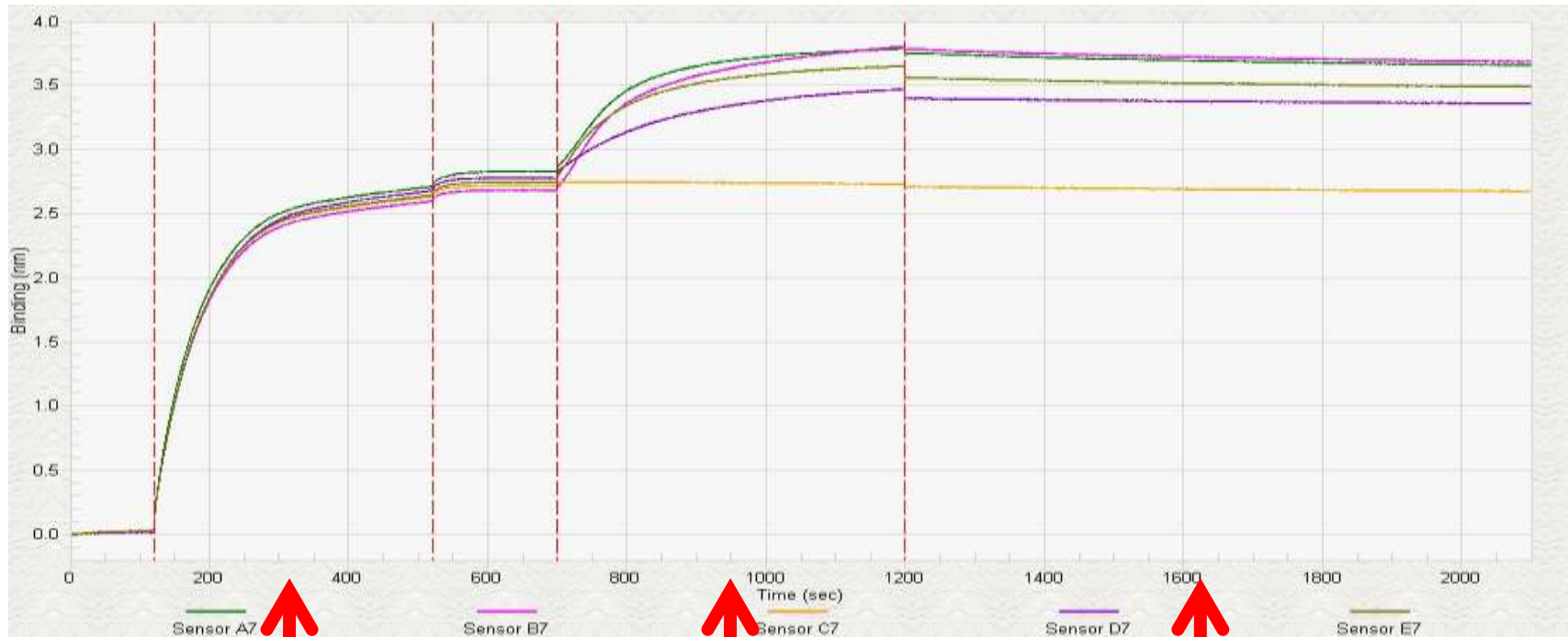
With anti-LGR5 antibody

HEK293 cells were transfected with LGR5 expression plasmid and immunostained with or without anti-LGR5 for flow cytometry test.

OriGene TrueMAbs can be good resources for assay development



SPR data for 9 anti-NEUROG1 TrueMABs



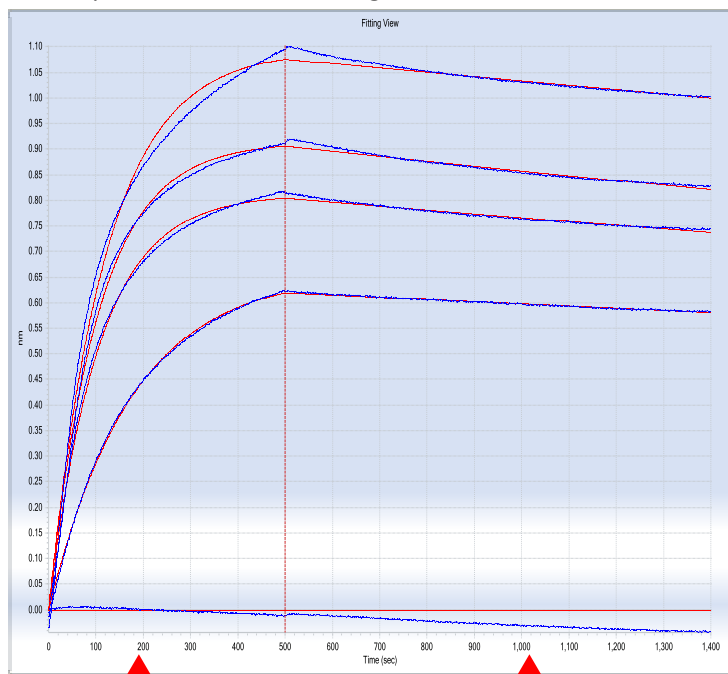
**Antigen
Association
(Biotin-NEUROG1)**

**Antibody
Association**

**Antibody
Dissociation**

Antibody binding kinetics analysis for 9 anti-NEUROG1 TrueMABs

Example: red line is the fitting curve

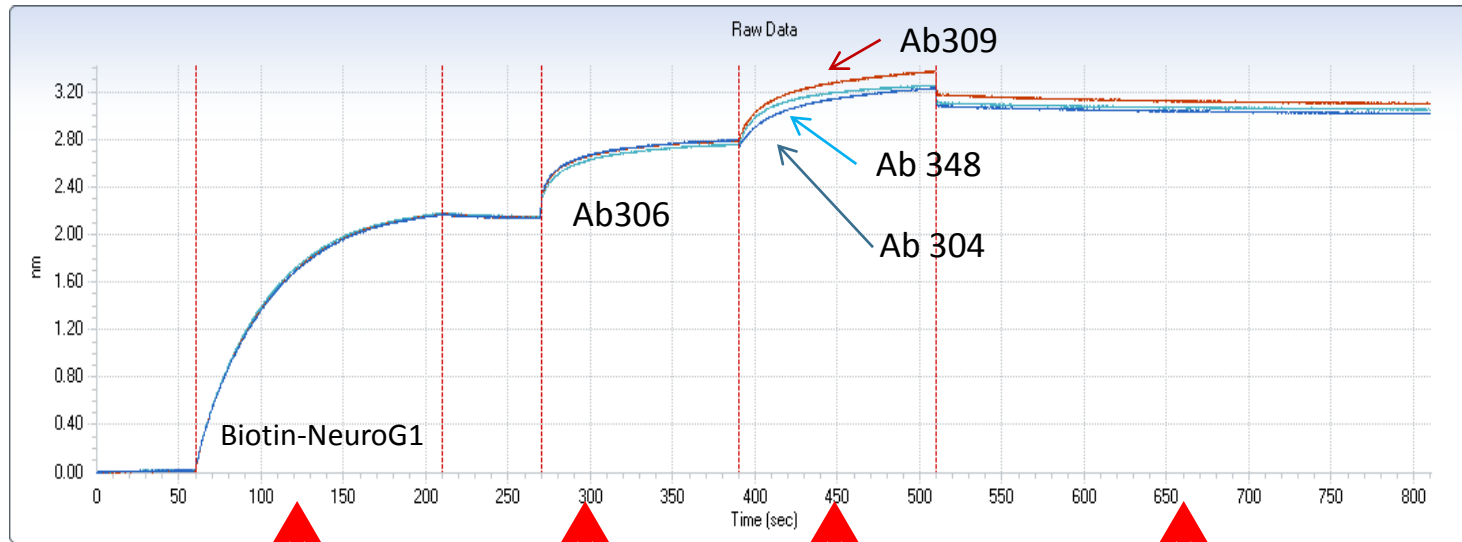


Sample ID	KD (M)	kon(1/Ms)	kon Error	kdis(1/s)	kdis Error	Full R ²
303	2.2E-09	2.8E+04	8.0E+01	6.0E-05	1.2E-06	0.996
304	1.7E-09	2.4E+04	9.3E+01	4.1E-05	1.5E-06	0.994
305	<i>n.a.</i>	n.a.	n.a.	n.a.	n.a.	n.a.
306	4.6E-10	1.6E+04	2.5E+01	7.5E-06	5.6E-07	0.999
308	1.6E-09	2.7E+04	7.0E+01	4.3E-05	1.0E-06	0.997
309	4.1E-10	7.0E+04	9.6E+02	2.8E-05	4.0E-06	0.854
348	4.6E-10	1.0E+05	1.1E+03	4.6E-05	2.8E-06	0.899
354	2.7E-14	1.0E+04	5.2E+02	2.8E-10	1.4E-05	0.844
355	1.0E-09	2.2E+04	1.1E+02	2.2E-05	1.9E-06	0.991

**Antibody
Association**

**Antibody
Dissociation**

TrueMAB from different hybridoma clone can form effective antibody pairs for ELISA or Luminex assay



Antigen
Association

Antibody
Association

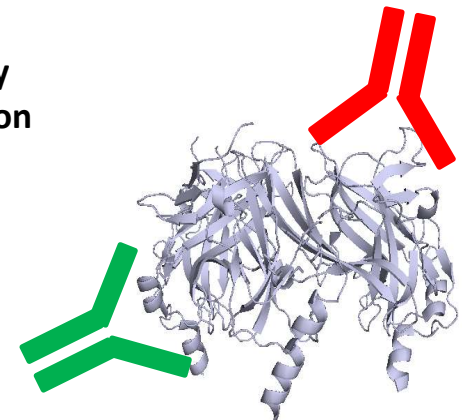
Antibody
Pairs

Antibody
Dissociation

Detection
Antibody

For some of the important druggable target, such as LIPG, we even have more than 20 antibodies for it.

Capture
Antibody



TrueMAB monoclonal antibodies demonstrated superior performance in immunoassays

- 97% of TrueMAB antibodies work for WB application.
- More than 60% are positively validated with IF application.
- More than 50% are positively validated with IHC and Flow applications.
- For every TrueMAB antibody, an overexpression lysate positive control is included for free, and we offer money-back guarantee.

OriGene offers high quality tag antibody for expression validation (The story of 4C5 anti-DDK@) @DDK recognize the same epitope as FLAG)

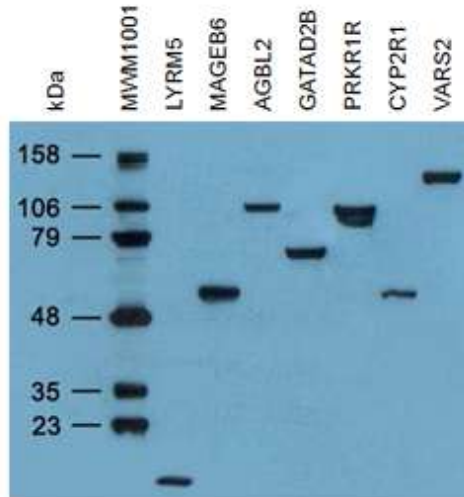


Figure 1: Immunoblot analysis of 7 randomly picked VERIFY Myc/DDK tagged overexpression lysates and Myc/DDK tagged Western molecular weight marker (MWM1001) using 4C5 anti-DDK antibody (TA50011) at 1:2000 dilution.

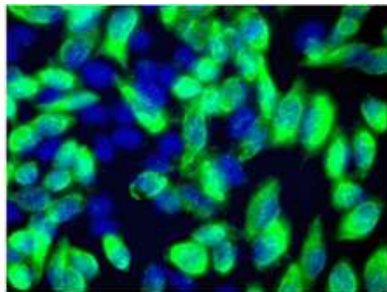
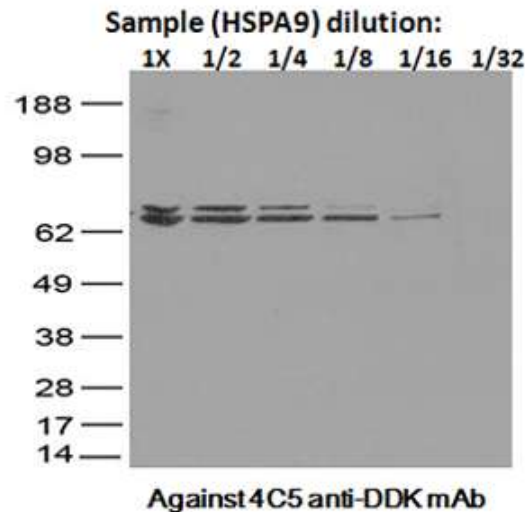
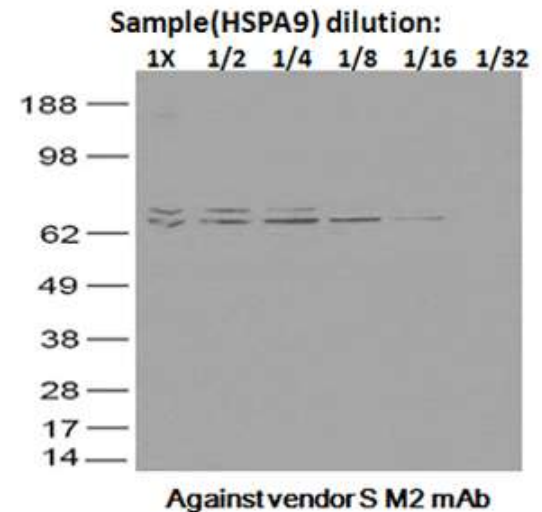


Figure 2: HeLa cells transiently transfected with myc-DDK tagged GFAP ORF cDNA clone were immunostained with OriGene's anti-DDK antibody (TA50011) (1:1,000), and then stained green with an Alexa-488 conjugated secondary antibody (1:2,000). The nuclei (Blue) were counter-stained with DAPI.



Against 4C5 anti-DDK mAb



Against vendor S M2 mAb

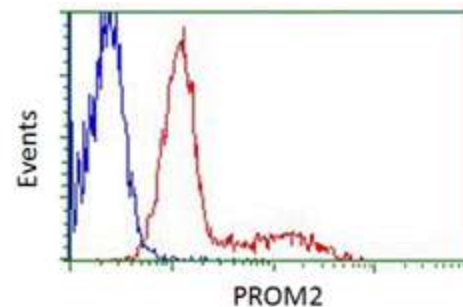
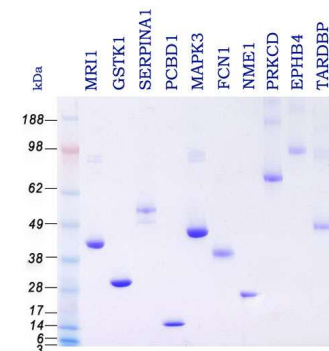


Figure 3: HEK293T cells transfected with either myc-DDK tagged PROM2 ORF overexpression plasmid (Red) or empty vector control (Blue) were immunostained with OriGene's anti-DDK antibody (TA50011) (1:1,000), and then analyzed by flow cytometry.





OriGene is dedicated to generating TrueMAB monoclonal antibodies for every human protein

- OriGene offers more than 6500 primary antibodies on OriGene website.
- 1800 TrueMABs are available for immediate delivery on OriGene website.
- Currently we are releasing 200 to 250 new TrueMABs each month, and by the end of this year, we will be able to release around **400** per month.
- Custom antibody development service plan available.
- We are currently building the world's largest monoclonal antibody production facility.



Questions?

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- techsupport@origene.com
- 1-888-267-4436 (1-888-2-origene)
- [Http://www.origene.com/TrueMAB](http://www.origene.com/TrueMAB)

Thank you

