



# MONOSPECIFIC RABBIT CLONAL ANTIBODIES

DB Biotech is focused on the design and production of high quality rabbit clonal antibodies developed by a novel and proprietary in vitro cloning technology which has been developed and perfected by the DB Biotech scientific team. Our unique technology enables the preparation of a pure immunoglobulin fraction corresponding to a single clone of B lymphocytes. The obtained immunoglobulin recognizes only one single linear epitope on the antigen molecule, making a DB Biotech antibody comparable in quality to its monoclonal analogue. In addition, the influence of the protein tertiary structure - frequently present in epitopes formed during production of monoclonal antibodies - is eliminated in the immunoglobulins corresponding to the clonal antibody. DB Biotech produced antibodies correspond strictly to the conserved linear epitope of the antigen molecule, yielding a higher-quality, more specific antibody with significantly better affinity and avidity.

## ADVANTAGES OF DB BIOTECH RABBIT CLONAL ANTIBODIES:

- **Exceptional specificity** recognizing the corresponding antigen at the concentration of  $\geq 5$  ng
- **Highest sensitivity, affinity and avidity**
- **Reliability on any tissue**
- **Cost-effective dilutions**
- **Special focus on difficult targets**



### FAQs:

**Why does DB Biotech select only the linear epitopes when designing clonal antibodies?**

Linear epitopes from the hydrophilic domains of antigen molecule are always accessible, whereas steric epitopes which are often recognized by monoclonal antibodies, frequently change their conformation during tissue preparation/fixation, protein extraction, etc., making the corresponding monoclonal antibody less specific, less avid, and in extreme cases not functional.

**What is the advantage of using rabbit clonal antibody produced from crude rabbit antiserum by in vitro cloning technology, when compared to monoclonal antibodies from hybridoma fusion cell lines?**

Outside of strictly specific linear epitopes characterization, clonal antibodies are mature immunoglobulins (IgG), with the complete post-translational modification of IgG molecule, mainly glycosylation, which plays an important role in stability of immunoglobulins. There are many reports from the literature describing the incomplete glycosylation patterns of monoclonal antibodies produced from hybridoma cell lines, which has an important influence on stability, affinity and avidity of antigen/antibody interactions.

**What are the criteria for the selection of the final clone?**

The highest possible specificity, affinity and avidity in recognizing a single linear epitope.

**Are clonal antibodies similar to immunoaffinity purified polyclonals ?**

No. Immunoaffinity purified polyclonal antibodies (whether the immunogen is the whole protein or selected peptide) are always represented by numerous fractions of immunoglobulins corresponding to all epitopes in the immunogenic sequence. Rabbit clonal antibody is a homogenous fraction of immunoglobulin (IgG) corresponding exclusively to one and only specifically defined epitope on the antigen molecule.

1. Detailed structural analysis of protein antigen molecule



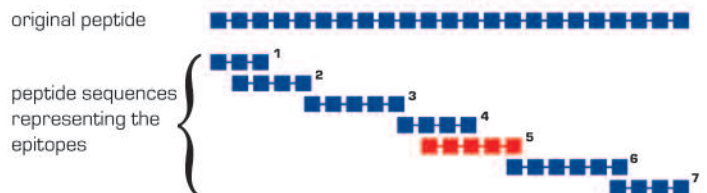
2. Selection of immunogenic sequence which includes the antigen specific epitope, (STRICTLY LINEAR; 3-7 aminoacids) surrounded by another 5-15 aminoacids.



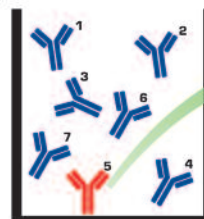
3. Peptide synthesis and rabbit immunization



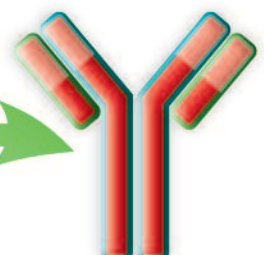
4. Production of crude rabbit anti-peptide polyclonal antiserum, represented by 7-15 fractions of immunoglobulins (IgGs) which correspond to 7-15 linear epitopes.



5. IN VITRO CLONING - ORIGINAL TECHNOLOGY DEVELOPED AND OWNED BY DB BIOTECH - separation of a single homogenous fraction of IgGs.



RESULTING CLONAL ANTIBODY



Corresponding to single clone of B lymphocytes.

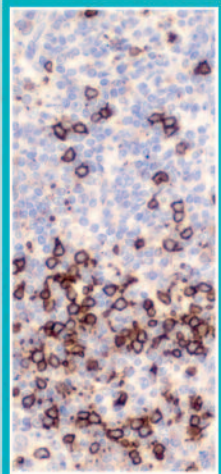


# MONOSPECIFIC SOLUTION FOR CLINICAL DIAGNOSTICS AND RESEARCH

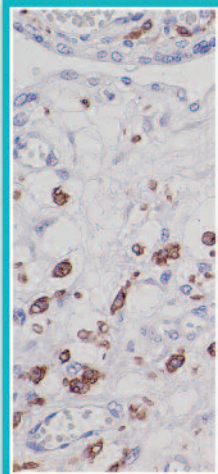
## IMMUNOHISTOCHEMISTRY IHC-P, IHC-Fr.

### SOLUTION FOR PROBLEMATIC TARGETS

- Concentrated and ready-to-use formats
- Minimum dilution 1:100 up to 1:1500



DB085  
CD8

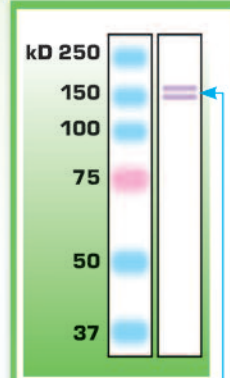


DB045  
CD163

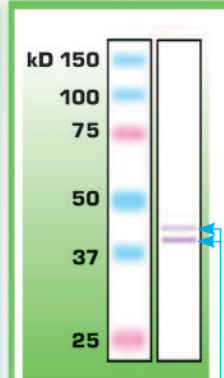
**Product list:** actin, iNOS, p53, CD5, CD10, kappa light chain, lambda light chain, CD20, CD45, CD 205 (RCC, DEC 205), CD163, PLAP, CD 227 (Mucin-1, EMA), Melanosome, Melan A, cytokeratin 7, ER (Estrogen receptor), S-100, PR (Progesterone receptor), EBV/LMP-1, CD117, Bcl-2, cyclin D1, Ki-67, CD1a, CD3, CD8, TTF-1, EGFR, C-erb-2 (Her-2/neu), cytokeratin 8, cytokeratin 14, cytokeratin 16, cytokeratin 17, cytokeratin 18, cytokeratin 19, C3d complement, C4d complement, CD7, cytokeratin 20, p63, p16, synaptophysin, chromogranin A, CD23, alpha smooth muscle actin, CD34, MSH2, IgG.

## WB, ELISA, IP, ICC UNIQUE ANTIBODIES ON THE MARKET

- 2 hours protocol
- no more overnight incubations
- Background free blots
- Exceptional dilutions



**DB003 iNOS**  
Western blot of i(n)NOS  
in mouse brain crude  
lysate (50µg of protein  
loaded).

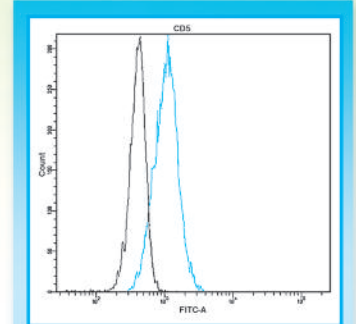


**DB012 Erk-1,2**  
Western blot of Erk 1,2  
in rat brain crude lysate  
(100µg of protein  
loaded).

**Product list:** actin, p53, iNOS, PKC $\alpha$ , PKC  $\beta$  I, PKC  $\beta$  II, PKC  $\gamma$ , PKC  $\delta$ , PKC  $\epsilon$ , PKC  $\zeta$ , Erk 1,2, Phospho-Erk 1,2, Metallothionein, Nephlin, CTRP5, CTRP7, Trypsin, PRION, BAX, Bcl-2, Akt1, CD56/NCAM, CD8, TTF-1, p63/TP63, c-FOS.

## FLOW CYTOMETRY NEW LINE OF CLONAL ANTIBODIES

- FITC conjugated
- Unconjugated form available



**Profile of peripheral blood  
lymphocytes analyzed  
by the BD FACSCanto II.**

Cells were fixed, permeabilized  
and stained with anti-human  
CD5 FITC (blue, used 10 µl per  
test) or with an isotype control  
(black).

**Product list:** PKC $\alpha$ , PKC  $\beta$  I, PKC  $\beta$  II, PKC  $\gamma$ , PKC  $\delta$ , PKC  $\epsilon$ , PKC  $\zeta$ , BAX, Bcl-2, p53, actin, cyclin D1, ER (Estrogen receptor), CD5, CD8, CD10, CREB, c-FOS, B-raf, V600-E.

## Custom Production Services

**DB Biotech offers custom services and cooperation on special projects pertaining to the design and production of clonal antibodies against any protein or its modification whose name, detailed description of the modification or amino-acid sequences are supplied by the project contractor.**

- agreement based projects - clearly defined:
  - technical requirements
  - minimum volumes
  - price per ml
- DB Biotech will design several clones for the same target and let the client choose the most suitable
- 4-5 months delivery time with detailed protocol and testing

**We are proud to present our  
90% project success rate.**

**For further information on our custom  
projects please contact us at  
info@dbbiotech.com.**



To review our comprehensive panel for  
routine IHC diagnostics as well as our research WB  
ELISA, IP and FC line, please visit our website

**www.dbbiotech.com**