DB Biotech's
Monospecific Clonal Antibody Discovery Technology

Dr. Tomas Dobransky, the Chief Science Officer of DB Biotech (DBB), has developed a unique approach to overcome the inherent limitations of traditional antibody development. DB Biotech has the unique ability to develop antibodies that will bind to difficult targets under any circumstances. The advantages of the proprietary DB Biotech approach to developing monospecific clonal antibodies have already been conclusively demonstrated in multiple research and diagnostic applications.

Unique Targeted Epitopes + Entropic In-Vitro Capture System = High Quality Monospecific Antibodies

Comparative studies of selected DB Biotech monospecific clonal antibodies with the monoclonal antibodies from other suppliers, as used in clinical diagnostics. DB Biotech is the original inventor of the antibody discovery technology for research and diagnostic applications. The EDAS and EVAC systems have been used by DB Biotech to produce over 100 consistently better antibodies when compared to other commercially available diagnostic antibodies.

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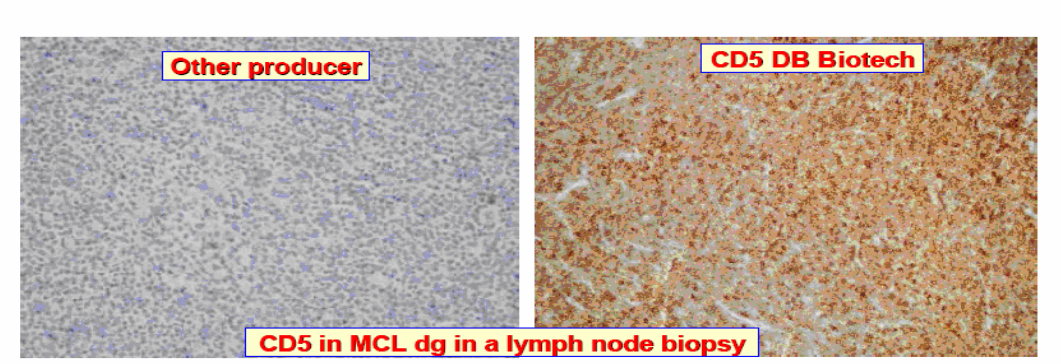

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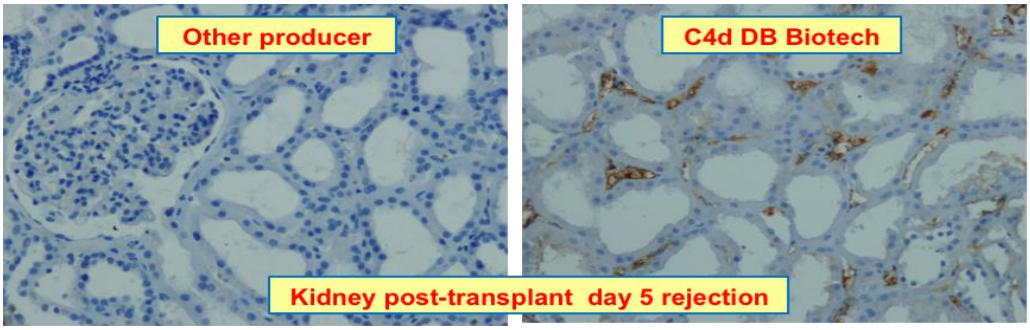

The DB Biotech Monospecific Clonal Antibody Approach

1. The process begins with an exhaustive 18 - 22 step structural analysis of the antigen molecule to identify possible linear epitopes. The possible linear epitopes are viewed in a higher protein structure context, then analyzed using our proprietary techniques and software ("**Epitope Design and Analysis System**" or "***EDAS***"). The *EDAS* epitope mapping process is unique, and goes far beyond traditional epitope mapping software and processes.

2. The analysis encompasses how the protein behaves in nature, its structure, hydrophobic and hydrophilic sites, intracellular and extracellular sites, possible protein/protein interactions with related cell signalling pathways, and DNA/RNA interactions. The final output is three or four linear epitopes that will be accessible to the antibody under any circumstances, and are not subject to target marker conformational changes.

3. The targeted linear epitopes, usually consisting of 4 - 7 amino acids, are made immunogenic with the addition of selected amino acids tagged to the front and back of the epitope amino acid sequences.

4. The proprietary in-vitro cloning technology (**"Epitope-Specific Entropic In-Vitro Antibody Capture System"** or **"*EVAC*"**) then separates a monospecific immunoglobulin based on the criteria of minimal entropy and corresponding to the originally designed epitope. This immunoglobulin is the product of one single B-cell line from the crude anti-peptide polyclonal anti-serum. We do not use traditional immunoaffinity purification as it often results in a heterogeneous mixture of immunoglobulins. Using the DB Biotech ***EVAC*** proprietary in-vitro cloning approach, the result is a purified monoclonal antibody that we call a monospecific clonal antibody.

5. Using rabbits, DB Biotech is now able to provide an antibody that is completely post-translationally modified and properly glycosylated and therefore more stable than antibodies produced by traditional cellular systems. Using the rabbit to naturally create a completed antibody structure avoids the use of a cell system, which often results in an improperly or incompletely glycosylated antibody.

The DBB methodology overcomes the inherent limitations of traditional monoclonal antibody development approaches because:

1. The specific targeting of epitopes by our ***EDAS*** system completely eliminates the use of hybridoma approaches and related technologies, including phage, ribosome and mRNA displays.

2. DB Biotech does not use the shotgun approach - the ***EDAS*** epitope mapping process allows us to dictate what antibody will be made to our specifically designed epitope. We tell nature exactly what antibody to make, instead of nature producing thousands of antibodies and then treasure-hunting for the best one.

3. Since proteins are known to be dynamic entities, steric epitopes often change their conformational parameters, which causes lower affinity or complete disappearance of physiological interaction between the antibody and corresponding epitope. In practice, it means that traditional monoclonal antibodies may work very well in certain applications for which they are designed, but when target for the same application is modified, the antibodies become ineffective.

4. DB Biotech uses only rabbits for antibody production because they produce a single type of immunoglobulin G, unlike mice which have several subfractions of immunoglobulin G. In addition, rabbit immunoglobulin is optimally glycosylated, resulting in higher stability of the final immunoglobulin molecule.

5. DB Biotech does not use traditional immunoaffinity purification techniques, but instead the ***EVAC*** system allows us to capture a monospecific homogenous antibody product of one single line of B-lymphocyte.