Biosimilar antibodies for research use to complement our most popular anti-biotherapeutic antibodies

Studying the biological effects of a drug or doing proof of concept ligand binding assay development for large molecule biotherapeutics requires a source of the drug, for instance, for use in cell based assays or as a calibration standard in a pharmacokinetic (PK) assay. However, it can be challenging to source original pharmaceutical grade biotherapeutic drugs (also known as reference products) for research use, rather than for use in a clinical application.

Bio-Rad’s non-therapeutic biosimilar antibodies for research use enable fast and inexpensive assay development. They avoid the need to use a therapeutic reference product, which can be expensive and only available in large quantities.

Biotherapeutic Antibody | Antibody Specificity | Biosimilar (Catalog #)
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Adalimumab | Human Anti-TNF alpha | MCA6141
Alemtuzumab | Human Anti-CD52 | MCA6101
Bevacizumab | Human Anti-VEGF | MCA6089
Brentuximab | Human Anti-CD30 | MCA6149
Cetuximab | Human Anti-EGFR | MCA6102
Eculizumab | Human Anti-C5 | MCA6145
Infliximab | Human Anti-TNF alpha | MCA6090
Natalizumab | Human Anti-Integrin Alpha 4 | MCA6104
Omalizumab | Human Anti-IgE | MCA6105
Rituximab | Human Anti-CD20 | MCA6091
Tocilizumab | Human Anti-IL6R | MCA6106
Trastuzumab | Human Anti-ErbB2 | MCA6092

Each biosimilar research antibody, produced using a recombinant platform, incorporates the publicly available sequence of the variable region (specificity) of the original monoclonal antibody drug. These biosimilar products are supplied in research grade format, in PBS buffer with preservative; they are not manufactured or formulated in the same way as the therapeutic reference product. A comparison of these antibodies with their respective therapeutic reference products was carried out to show biosimilarity (Figures 1 and 2).

Purity and Monodispersity

All of our biosimilar research antibodies show comparable purity and monodispersity with the reference product. Purity was measured by band quantification of a Coomassie stained SDS-PAGE gel; monodispersity was compared using size exclusion chromatography (SEC). Example data for Anti-TNF Alpha Antibody and adalimumab are shown in Figures 1a and 1b. (Detailed comparison data for each antibody with its reference product is available on bio-rad-antibodies.com)
Performance in Pharmacokinetic (PK) Bridging ELISA

In Figure 2b, a microtiter plate was coated overnight with Human Anti-Adalimumab Antibody clone AbD18654 (#HCA202) at a concentration of 1 µg/ml. After washing and blocking with PBST + 5% BSA, 10% human serum was added spiked with increasing concentrations of adalimumab (therapeutic reference product; red squares) or Human Anti-TNF alpha Antibody (#MCA6141, adalimumab biosimilar research grade; black circles). Detection was performed using HRP conjugated Human Anti-Adalimumab Antibody, clone AbD18654_hIgG1 (#HCA203) at a concentration of 2 µg/ml in HISPEC Assay Diluent (#BUF049A) and QuantaBlu Fluorogenic Peroxidase Substrate. Data are shown as the mean of three measurements. HRP conjugation of the antibody used in this assay was performed using a LYNX Rapid HRP Antibody Conjugation Kit (#LNK001P-LNK006P).

For in vitro research purposes only. Research grade biosimilar. Not for use in therapeutic or diagnostic procedures for humans or animals.

Visit bio-rad-antibodies.com for more information.

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