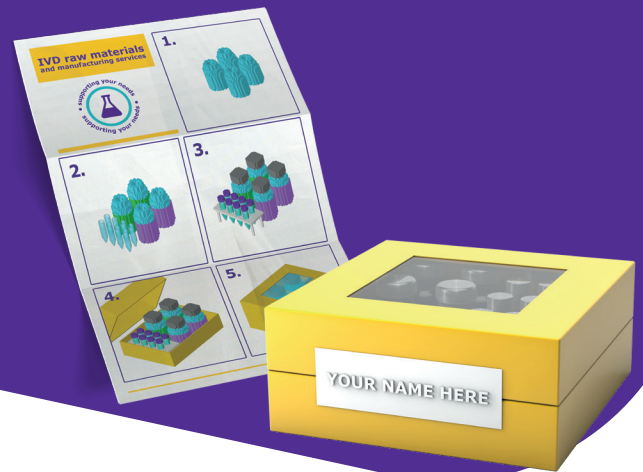


NEWS on diagnostics

Volume 3, 2022



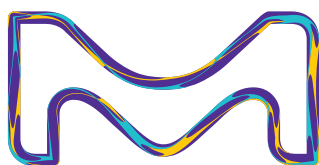
In this issue....

- Antibody Sustainability
- Advantages of Recombinant Antibodies
- ZooMAb technology (RUO)
- Antibody Guarantee
- Recombinant Mouse IgG (IVD Manufacturing Use)
- Key Antibody Manufacturing Sites

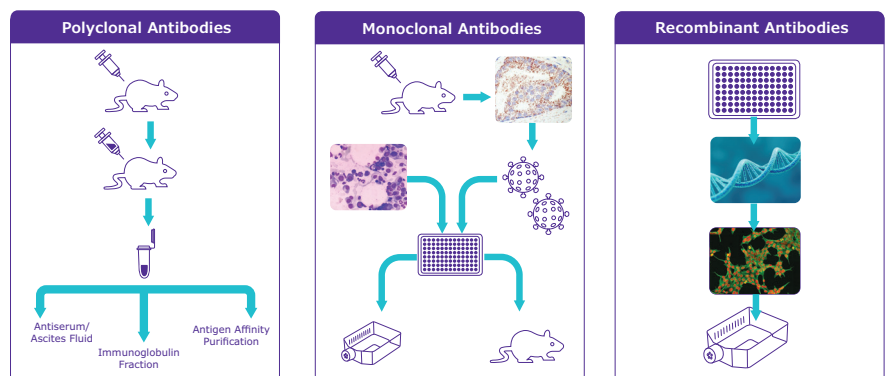
Welcome to the third volume of News on Diagnostics for 2022. This volume will look at our offering for more sustainable antibody supply. Whether you are looking for research use only (RUO), or those suitable for IVD manufacturing use, our portfolio can help accelerate your success, while helping your business achieve its greener sustainability goals.

Antibody Sustainability

Recombinant antibodies are monoclonal antibodies which are generated *in vitro* using synthetic genes. Unlike monoclonal antibodies (mAbs) which are produced using traditional hybridoma-based technologies, recombinant antibodies do not need hybridomas and/or animals in the production process. As they are synthetically manufactured, there is more control over the optimization of the sequencing that leads to a more consistent product when compared to the native equivalent.



The Life Science business of Merck operates as MilliporeSigma in the U.S. and Canada.



Antibody manufacturing processes

These schematics show the differences between polyclonal, monoclonal and recombinant antibody production techniques.

Monoclonal/Recombinant Antibodies versus Polyclonal Antibodies

Trends are moving towards monoclonal manufacturing techniques, and more lately, recombinant antibody production for better product consistency.

Advantages of recombinant antibodies

| Pros | Cons |
|--|--|
| <ul style="list-style-type: none"> Increased reproducibility and control Significantly reduced production time High degree of monovalency Easier isotype conversion Almost no batch to-batch variations Easy to develop humanized version Sequence is known and can always be reconstructed, if necessary | <ul style="list-style-type: none"> High degree of technical skills required to develop and express Higher cost to develop and produce, particularly the up-front development and identification of the recombinant antibody sequence Longer development times |

ZooMAB® Recombinant Monoclonal Antibodies (Research Use Only (RUO))

Our ZooMAB® recombinant antibodies platform represents an entirely new generation of recombinant monoclonal antibodies that offer the superior specificity and affinity of a monoclonal antibody, the reproducibility of recombinant technology, and greener alternatives including sustainability. Each ZooMAB® antibody is manufactured using our proprietary recombinant expression system, purified to homogeneity, and precisely dispensed to produce robust and highly reproducible lot-to-lot consistency. Each antibody is validated to reliably perform across multiple applications, including its most commonly used application. For more information on the revolutionary benefits of our ZooMAB® recombinant antibody technology, please visit our ZooMAB® technical resource page.

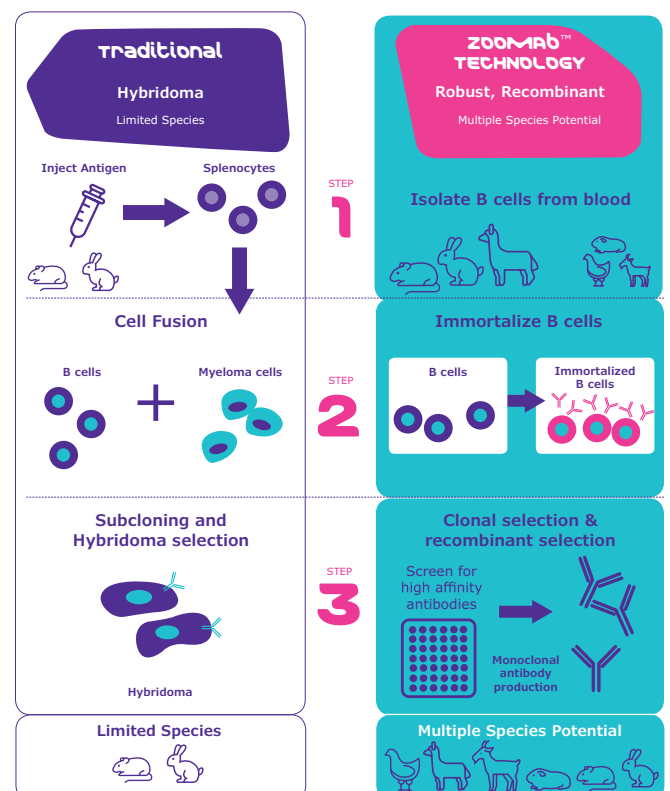
The ZooMAB® recombinant monoclonal antibody platform has been awarded the '2020 Innovative Product of the Year' by CiteAb, a leading life science data provider for citations and market data. We continue to push boundaries to help you make your next big discovery, vial after vial.

Find out more with our technical article and FAQs at SigmaAldrich.com/zoomab

Antibody Bioguarantee Form

We invite you to evaluate our antibody products with complete peace of mind. If the antibody does not perform in applications described in our documentation, including listings on our websites, catalogues or data sheets – we will issue a full credit or replacement antibody.

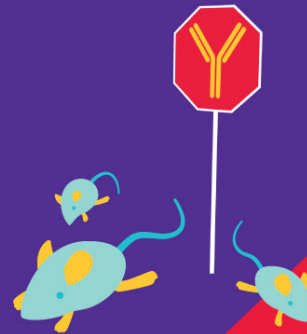
To learn more about our bioguarantee, and to complete our form with the details and results of your experiment, please visit SigmaAldrich.com/bioguarantee



Recombinant Mouse IgG (IVD Manufacturing Use)

Better HAMA Blocking

Improve your assay accuracy challenges using our recombinant mouse IgG with targeted blocking capability & sustainability.



Sigma-Aldrich.
Lab & Production Materials

For customers in the IVD manufacturing industry who need low variability consistent, reliably sourced & delivered, and sustainably produced mouse IgG blocking reagent, Merck developed a recombinant mouse IgG as a novel, sustainable replacement to serum-derived mouse IgG, providing manufacturers a tightly-controlled, non-animal derived blocking solution to efficiently reduce nonspecific antibody interference in diagnostic assays while improving lot reproducibility and test accuracy as well as easing import restrictions.

Recombinant mouse IgG prevents interfering antibodies in human serum such as human anti-mouse antibodies from non-specifically binding to the capture or detection antibodies in an immunoassay. It is a novel and sustainable replacement to serum-derived mouse IgG, providing assay manufacturers with a tightly controlled,

non-animal derived blocking solution to efficiently reduce false negative and false positive test results by removing nonspecific antibody interference. Being animal-free, it also simplifies import regulations into countries outside the US. Generation of a recombinant mouse IgG antibody blocker creates a high level of consistency and reproducibility between lots while maintaining high specificity and affinity through stringent clonal selection.

Learn more about our Mouse IgG in our technical note <https://www.sigmaaldrich.com/deepweb/assets/sigmaaldrich/product/documents/128/063/recombinant-mouse-igg-technote-mk.pdf>

If you would like to have a deeper discussion with a specialist about our recombinant mouse IgG, please complete our information form, and we will arrange a meeting. SigmaAldrich.com/RecombinantMsIgG

Adaptive Learning Course: Rapid Point of Care Test Development



Michael Mansfield, Ph.D.
Merck
Applications Development
Scientist

Duration : ~ 4 hours
Language : English
Presented : Mon, May 9, 2022

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Find these and other clinical & diagnostic webinars at SigmaAldrich.com/webinars

Efficient Scale-up & Manufacture of mAbs for Diagnostics



Paul Beckett, Ph.D.
Merck
Senior Technology Manager



Josselyn Haas Durr, M.Sc.
Merck
Senior Manager,
Manufacturing Sciences and
Technology

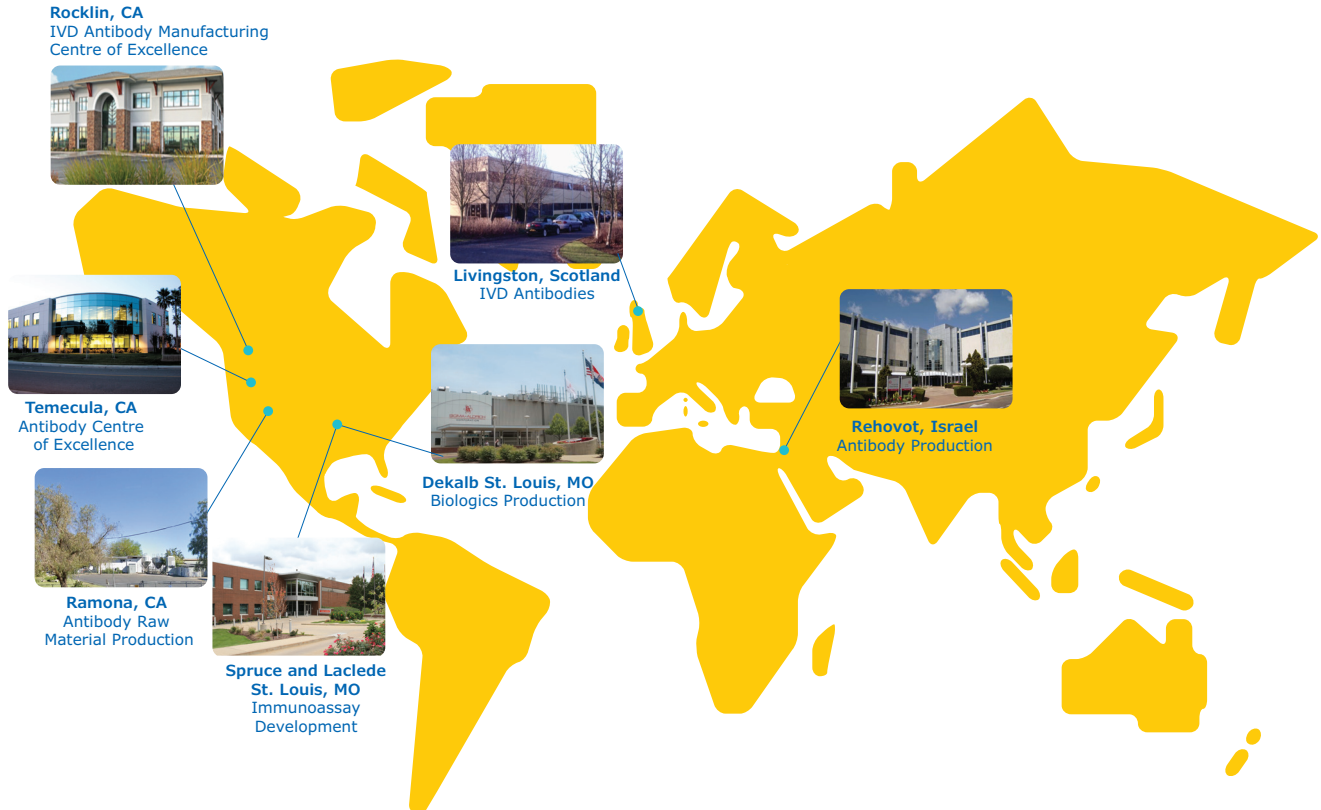
Duration : 1 hour
Language : English
Presented : July 21, 2021

[Learn More](#)

Key Global Antibody Production sites

We are a pioneer and leader in antibody technologies, from engineered antibodies to multiplexed immunoassays for research and diagnostic applications. The map below shows the centers

of excellence that have significant input into our antibody offering, whether through research, direct production or further modification or purification of raw materials.



Try Our Antibody Explorer tool
**Recombinant, Polyclonal &
Monoclonal Antibodies**

[Learn More](#)

