Singular
Products & services
Quick Reference Catalogue Version 1

'Being aware that superior affinity & high specificity monoclonal antibodies are key to your success, these became the reason for creating our company'.
The SynAbs team.

SYnAbs
Singular Antibodies

Discover SynAbs

In need of a good monoclonal antibody directed against :

- a poor immunogenic compound ?
- a complex antigen ?
- a conformational epitope ?

Or may be that your target is a **small molecule, a steroid, a peptide, a toxin, a lipid, a polysaccharide or an epigenetic modification** ?

SynAbs has acquired a strong expertise in immunology to break immunotolerance in **mouse, rat and Guinea Pig species to generate unique monoclonal antibodies of extreme specificity and superior affinity**. SynAbs also use to provide polyclonal antibodies of rabbits on request.

SynAbs SA - "Singular Antibodies" - is a CRO created to fill that particular gap in custom monoclonal antibody & ELISA development. Our entity is a spin-off from the UCL (Brussels) and the result of a coordinated action by the laboratory of Prof. Dr H. Bazin, and Biotech Investissement, holding company of mAbexperts group.

SynAbs is located in 'Brussels South Charleroi Biopark' (Belgium), a unique ecosystem for the life sciences industry with its large pharma & biotech footprint, brilliant scientific community, and connection to Europe's best financial ecosystem.

SynAbs is ISO 9001:2015 certified and our scientists & management team can rely on a broad and long expertise industry.

Working with SynAbs offers you unique benefits!

- Unique success rate approaching the 90%, securing a superior return on investment thanks to ***unique multi-species immunization approach*** getting access to rat, mouse, and guinea pig immune repertoires.

- Large track record in the generation of innovative monoclonal antibodies against ***poor immunogenic compounds and complex antigens***.

- Strong and transparent ***international reputation***. The SynAbs team encourages you to meet our clients; they are our best sales persons.

- As member of mAbExperts, a group of 5 companies with strongly matching expertise, clients can benefit from a one-stop-shop experience from SynAbs, ***ranging from antigen design to antibody generation, engineering, characterization, production, analytics, assay design & validation***.

- Custom development and manufacturing capabilities coupled with off-the-shelf singular antibodies references: combined solutions that ***grow with your business***!

- Quality environment covered by ISO 9001:2015 certification, SynAbs complies with ***high-quality standards***.

mAbExperts

CUSTOM MONOCLONAL ANTIBODY GENERATION

Antigen design & selection

Over the years, SynAbs has accumulated extensive know-how in the generation of custom antibodies and the design & selection of antigens, such diverse as:

- ✓ Neo-epitopes to detect specific protein cleavage sites.
- ✓ Epigenetic modifications including i.e. methylated, phosphorylated and acetylated forms.
- ✓ Conformational epitopes
- ✓ Steroids
- ✓ Small molecules (drugs…)
- ✓ Peptides
- ✓ Bacteria, Virusses & Toxins (incl. low level detection).
- ✓ High-homology antigens to distinguish between two closely related isoforms (site specific mutations, substitution, deletion, insertion…)
- ✓ Glycans
- ✓ Antibodies related such as anti-idiotypes, anti-isotypes…
- ✓ Difficult to express proteins (ion channel, GPCR)
- ✓ Intracellular targets
- ✓ Fusion proteins

Depending on your target of choice, SynAbs can propose & develop tailor made approaches, combining the best in immunology and chemistry.

Since the first pillar of effective antibody generation is the correct design of your antigen, our goal is to have a fine understanding of your target by establishing its specific identity card.

This mapping will take the essential elements useful to understand against which epitopes it is interesting (*and also achievable*) to generate your antibody.

In case the antigen is a hapten, a small, chemically defined entity, SynAbs will conjugate it to carriers such as BSA, KLH, OVA or even HSA. Next steps include:

- identification of the possible chemical conjugation sites
- checking for a successful conjugation
- discriminating the antibodies that are directed against the carrier, the linker and the antigen during a screening step.

In case the antigen is a protein, SynAbs will run for you :

- Sequence analysis
- Sequence alignments
- Hydrophobicity analysis
- Secondary structure analysis
- Order & Disorder analysis

Immunization, Fusion & Screening

- Multi-species immunization approach getting access to rat, mouse, and guinea pig immune repertoires
- Different immunization schemes to benefit from natural antibody maturity
- Unique expertise to break immune tolerance for small molecules, peptides and low-immunogenic compounds
- Proprietary DNA immunization technology for native conformation of membrane-spanning proteins
- Proprietary adjuvant to boost immune response
- High efficiency electrofusion to generate a large number of positive hybridomas. The fusion is performed with all the spleen and poplitea lymph nodes to get an average of 60 positives clones per target.
- Positive and negative screening for cross-reactivity checking

Antibody Manufacturing & Characterization

- ✓ Serum-free adaptation,
- ✓ Up-stream & Down-Stream Processing development, scale-up and manufacturing up to several grams,
- ✓ Flexible starting material : hybridoma cells can be developed by SynAbs or provided by the customer,
- ✓ Extensive cell culture expertise

Up Stream Process mode	Quantity of purified antibody	Timelines
T-flasks	2 mgrs	2 weeks
Spinner	20 mgrs	4 weeks
CELLine	200 mgrs	8 weeks
FiberCell	500mgrs to several grams	12 weeks

- ✓ Large panel of Down-Stream process steps :
  - Concentration / Diafiltration, TFF
  - Affinity chromatography (protein A, G, L, ***specific & proprietary immuno-affinity***),
  - Clearance solutions for endotoxins removal
- ✓ A large panel of Quality Controls on your batch :
  - Aggregates (by SEC-HPLC)
  - Endotox testing (by LAL)
  - Mycoplasma testing
  - Bioburden, sterility testing
  - Western-Blot
  - FACS
  - Kinetic features (K_d, K_a) by BLItz & Octet
  - Immunoassay development and testing (competitive ELISA,…)

Services Specifications

Milestone	Work Package	Your delivrables	Times (week)
Immunogen preparation	• Antigen design study • Antigen production • Peptide conjugation to KLH/BSA		1-2
Animal immunization	• Several groups of animals • 2 animals / group • Serum tested on Day30 • Boost immunization		3-4
Cell fusion	• Electrofusion with proprietary myeloma cell line • Dispension in 96 well plates • ELISA test on supernatant		1
Screening	• by ELISA or FACS • Multiple screenings	20 antigen-positive wells delivered for testing	3-4
Subcloning	• Limiting dilution of the chosen clone • Adaptation in normal medium conditions	1 hybridoma finally delivered	4
Manufacturing small scale	• Fast-track production in T-flask mode	1 mgr of purified antibody	2
TOTAL			**14-17**

Special services on request

- Immunizing more animals
- Additional specificity screenings
- Additional positive clones
- Master & Working cell banks generation
- Sequencing of antibody constant & variable domains from hybridoma
- Hybridoma storage (liquid nitrogen)
- Immuno-assay development and validation
- Antibody sequencing
- Antibody reformating (ScFv, Fab, Bispecific…)
- Custom labelling (FITC, HRP, Biotin…)
- Stability studies
- Transfection in CHO/HEK expression system and recombinant production

RD-Biotech

Carbohydrate antibodies : case study

Antibodies to carbohydrate compounds are very tricky to generate because of the T-cell-independent response to carbohydrates. The general outcome is low affinity and difficult to work with IgM antibodies. Screening technologies that include IgM antibodies can cause selections of antibodies with low-affinity binding sites because of the net avidity enhancement. Unfortunately, the low-affinity binding site can also have a similar affinity for unwanted structures.

Examples of SynAbs unique achievements :

- **Anti-galactomannam monoclonal antibody for *Aspergillus* identification**

Neo-epitopes antibodies: case study

Neoepitopes are peptides, located on neoantigens, that arise from mutations and recognized as non-self and presented by antigen-presenting cells (APCs), such as dendritic cells (DCs) and the tumor cells itself. Neo-epitopes can also be created by covalent post-translational modifications like enzyme cleavage process.

The neoepitopes, specifically reactivating T cells, are particularly interesting in immune escape situations after checkpoint inhibitors treatments now considered standard treatments. They are also hugely studied in the context of the creation of new vaccine strategies.

Examples of SynAbs unique achievements :

- **Monoclonal antibodies targeting both epitopes after proteolytic cleavage**

Epigenetic antibodies: case study

The histone H3 of certain tumors is methylated at the level of a lysine in an area which is highly conserved and identical in humans and mice.

Volition company initially worked with a polyclonal but with the specificity problems that this entails. After several unsuccessful attempts to obtain a monoclonal antibody directed against this methylated lysine in mice and rabbits, Volition then entrusted this work to SynAbs to try to obtain a monoclonal in rat species.

Examples of SynAbs unique achievements :

- **Final obtained rat mAbs make the difference between methylated and non-methylated lysine on histone DNA.**
- **An immuno-assay has been consequently developed under NuQ brand and is now marketed.**

" We chose to launch one 'hard' program with SynAbs in order to develop an anti-PTM antibody. Indeed, there is no existing available monoclonal antibody for that given modification as of today.

We are delighted with the collaboration with SynAbs! We got a purified antibody with a high specificity to the very methyl group !

They know what they are talking about and have considerable experience with antibody production. They are also very flexible and the communication flow is efficient as well. As this program is a success, we will initiate new ones shortly "

Gaetan Michel, VolitionRx, CEO

Anti-peptides antibodies: case studies

Peptides are molecules of choice for animal immunization thanks to the selection of appropriate epitopes. SynAbs has developed the know-how to design your peptides, synthesizes them and perform the coupling to BSA and KLH molecules before animal injection.

Examples of SynAbs unique achievements :

- **High affinity and specific monoclonal antibodies against peptides engage in osteoarthritis symptoms: 9 amino acid sequence which comes from the type II collagen,**
- **High affinity and specific monoclonal antibodies against peptides for the detection of the pathological Platelet-Associated Antibodies (PAA) in the sera of adolescent and pediatric patients suffering from early-onset symptoms of schizophrenia.**
- **ELISA kits have consequently been successfully developed allowing the analysis of patients sera and urine to help confirming diagnosis.**

"Our project on joint health degradation biomarker was not on the right track and so we were considering a smart way to bounce back and forth. SynAbs was the solution. They're highly specialized in mAb field, have proved to be a proactive provider, with high commitment to build a long-term partnership"

Yves Henrotin, Founder of Artialis

"SynAbs has done a tremendous job in customized generation of a monoclonal antibody thanks to their unique multi-species immunization approach. They generated the first worldwide monoclonal antibody against our confidential peptide. They also demonstrated great flexibility working with us and dealing with logistic aspects between our respective countries"

Tzvika Tzubery, CSO of Neurogenic Ltd.

Infectious diseases antibodies: case study

Staphylococcus aureus is a type of bacteria that about 30% of people carry in their noses. Most of the time, staph does not cause any harm, however staph can cause infections. Approaches to detect MRSA include culture methods and molecular techniques.

S. agalactiae is a gram-positive coccus with a tendency to form chains, beta-haemolytic, catalase negative, and facultative anaerobe.

Methods to detect GBS are based on nucleic acid amplification test and hybridation probes.

Examples of SynAbs unique achievements :

- **Two monoclonal antibodies in two different species thanks to its unique immunization approach**
- **Develop custom sandwich ELISA immunoassay**
- **First guinea pig monoclonal antibody anti-NDM**

"Coris had identified two promising targets and wished to ultimately develop sandwich ELISA to quantify these biomarkers. The unique approach of SynAbs with multi-species immunization has allowed the generation of high affinity mAbs both in rat and mouse. These two mAbs are now the very basis of our sandwich immuno-assay! "

Thierry Leclipteux, Coris Bioconcept, CEO & Founder

Lipid monoclonal antibodies: case studies

To generate a monoclonal antibody against fat, phospholipid and steroid is a very tricky performance as lipids are typical hapten molecules. Furthermore anti-lipid antibodies may react against proteins or molecules that bind to lipid type particles.

Only a very few antibodies that have the affinity to bind against lipids are available on the market. SynAbs antibodies are part of them.

Examples of SynAbs unique achievements :

- **anti-T3 (triiodothyronine) monoclonal antibody that doesn't cross-react with T4 (thyroxine)**
- **anti-DHT (dihydrotestosterone) guinea pig monoclonal antibody that doesn't cross-react with free testosterone**

« As a leading in-vitro diagnostic provider to the clinical laboratory market, IDS is compelled to continuously rely on strong preferred partners, which commit to high quality standards. For a project involving the development of innovative immunoassays against a particular steroid, SynAbs rapidly came to the conclusion that only rat-LOU specie can deliver the expected outcomes. This small molecule project has become a huge success! »

Mhammed Bougoussa, Project Director, IDS

INNOVATIVE MONOCLONAL ANTIBODY CATALOGUE

As part of custom services, SynAbs is developing unique off-the-shelf references. SynAbs catalog of monoclonals antibodies include:

- High value Primary antibodies (infectiology, steroid hormones, toxins…)
- Innovative Secondary anti-isotype species (targeting human, rat, mouse, guinea pig, llama and many species)
- Isotype controls & Irrelevant antibodies (anti-DNP)
- Plug & Play tools (isotyping kit, immuno-affinity columns…).

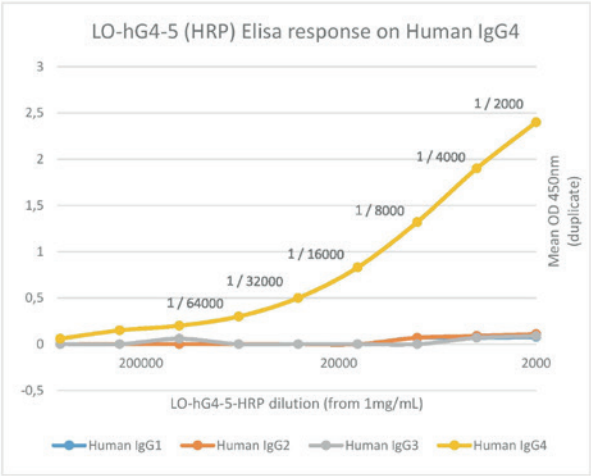
All our references are provided with a data sheet gathering:

- ✓ Immunogen name
- ✓ Origin species
- ✓ Immunocyte donor
- ✓ Host species
- ✓ Immortal cell partner details
- ✓ Isotype of antibody produced
- ✓ Name of the cell line
- ✓ Product name
- ✓ Applications
- ✓ Specificity
- ✓ Cross-reactivity

Remarks:

- Antibodies are available in bulk and can be manufactured on request
- Antibodies are concentrated at 1mgr/mL
- All conjugation formats are available: Phycoerythrin, Alexa Fluor, APC, DyLight, FITC, Biotin, HRP and custom labelling
- Antibodies have been validated for ELISA, WB, immuno-chromatography & FACS application
- On request: azide free, Endotox free, cocktail…

SPECIFICITY ON ELISA (HRP form)



LO-hG4-5 (1mg/mL) dilutions	IgG1	IgG2	IgG3	IgG4
2000	0,100	0,150	0,110	2,730
4000	0,080	0,110	0,090	2,400
8000	0,070	0,090	0,070	1,900
16000	0,070	0,070	0,070	1,320
32000	0,060	0,070	0,060	0,830
64000	0,060	0,060	0,060	0,500
128000	0,060	0,060	0,060	0,300
256000	0,060	0,060	0,060	0,200
512000	0,060	0,060	0,060	0,150
0	0,060	0,060	0,060	0,060

- LO-hG4-5 HRP labelled

FORMAT AVAILABLE:

- Azide Free
- Endotox Free
- Custom labeling available on the full catalog or on request (Phycoerythrin, HRP, FITC, Alexa Fluor, …)
- In cocktail with another antibody

FOR RESEARCH ONLY

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SynAbs Primary Antibodies – Isotype Controls & Irrelevant

Isotype controls are primary antibodies that lack specificity to the target, but match the class and type of the primary antibody used in the application.

Isotype controls are used as negative controls to help differentiate non-specific background signal from specific antibody signal.

- Typically, an isotype control is matched to the host species and isotype of your specific primary antibody.
- Sometimes, it is an antibody that has been raised against an antigen that is not normally expressed in the target tissue, *e.g.* DNP.
- When using directly labeled primary antibodies, it is also necessary to make sure that the isotype control is conjugated to the same fluorochrome or label as the test antibody.

Causes of background staining :

- binding to Fc receptors on target cells,
- nonspecific antibody interactions with cellular proteins, lipids and carbohydrates
- cellular autofluorescence.

Applications:

- ➢ Dinitrophenyl (DNP) is a hapten, not found endogenously in tissues, so serves as a control for immuno-assay.
- ➢ DNP is a negative control but also an excellent alternative to biotin for use in applications requiring biotin-free systems. Probes or antibodies labeled with DNP can be detected using the SynAbs anti-DNP antibodies
- ➢ Using an antibody to DNP, it is possible to visualize and localize the sites of oxidative damage by immunodetection of DNP adduction resulting from reaction of the tissue with DNPH.

Monoclonal Antibodies – Isotype Controls & Irrelevant

Specificity	Target	Species	Clone	Isotype
None	None	Rat	IR202	IgM kappa
None	None	Rat	IR473	IgM kappa
None	None	Rat	IR22	IgA kappa
None	None	Rat	IR1060	IgA kappa
None	None	Rat	IR2	IgE kappa
None	None	Rat	IR162	IgE kappa
None	None	Rat	IR595	IgG1 kappa
None	None	Rat	IR871	IgG1 kappa
None	None	Rat	IR27	IgG1 kappa
None	None	Rat	IR31	IgG1 lambda
None	None	Rat	IR418	IgG2a kappa
None	None	Rat	IR452	IgG2a kappa
None	None	Rat	IR863	IgG2b kappa
None	None	Rat	IR304	IgG2c kappa
None	None	Rat	IR1148	IgG2c kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-1	IgG1 kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-2	IgG1 kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-16	IgG2a kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-61	IgG2a kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-11	IgG2b kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-57	IgG2b kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-45	IgA kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-64	IgA kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-10	IgE kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-30	IgE kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-34	IgM kappa
DNP	Dinitrophenyl hapten	Rat	LO-DNP-40	IgM kappa
DNP	Dinitrophenyl hapten	Mouse	MADNP-1	IgG1 kappa
DNP	Dinitrophenyl hapten	Mouse	MADNP-2	IgG2a kappa
DNP	Dinitrophenyl hapten	Mouse	MADNP-3	IgG2b kappa
DNP	Dinitrophenyl hapten	Mouse	MADNP-4	IgG3 kappa
DNP	Dinitrophenyl hapten	Mouse	MADNP-5	IgM

SynAbs Primary Antibodies – Toxins & Mycotoxins

A toxin is a toxic substance synthesized by a living organism, to which it confers its pathogenicity. Mycotoxins are low molecular weight molecules produced as secondary metabolites by filamentous fungi that can be found as natural contaminants. These toxins have been shown to have adverse effects on both human and animal health, and are the cause of significant economic losses worldwide.

Specificity	Target	Species	Clone	Isotype
Aflatoxin	Aflatoxin M1	Mouse	MA-Afla	IgG1
Aflatoxin	Aflatoxin B1	Mouse	ATB1	
Aflatoxin	Aflatoxin B2	Mouse	ATB2	
Cholera toxin		Mouse	VCT-006-2	IgG2a
Cholera toxin		Mouse	VCT-007-2	IgG2a
Clostridium Botulinum toxin A		Mouse	BONTA-001	IgG2a
Clostridium Botulinum toxin A		Mouse	BONTA-002	IgM
Clostridium Botulinum toxin A		Mouse	BONTA-004	IgG1
Clostridium Botulinum toxin B		Mouse	BONTB-001	IgG1
Clostridium Botulinum toxin C		Mouse	BONTC-001	IgG1
Clostridium Botulinum toxin C		Mouse	BONTC-002	IgG2b
Clostridium Botulinum toxin C		Mouse	BONTC-004	IgG2a
Clostridium Botulinum toxin D		Mouse	BONTD-001	IgG1
Clostridium Botulinum toxin E		Mouse	BONTE-001	IgG3
Clostridium Botulinum toxin E		Mouse	BONTE-002	IgG1
Clostridium Botulinum toxin E		Mouse	BONTE-004	IgG2a
Deoxynivalenol toxin		Mouse	DON-001-A	IgG1
Fumonisin B1 toxin		Mouse	FUM-001-1	IgG1
Fusariotoxin T2		Mouse	T2-001-A	IgA
Fusariotoxin T2		Mouse	T2-002-A	IgG1
Ochratoxin A		Mouse	OTA-001-A	IgG1
Ochratoxin A		Mouse	OTA-002-A	IgG2a
Ochratoxin B		Mouse	OTB-001A-	IgG1
Ricinus communis toxin		Mouse	RCA-001-A	IgG1
Shigella like toxin 2		Mouse	STX2-001-A	IgG1
Staphylococcus enterotoxin		Mouse	SE-001-A	IgG1
Staphylococcus enterotoxin A		Mouse	SEA-001-A	IgG2b
Staphylococcus enterotoxin A		Mouse	SEA-002-A	IgG1
Staphylococcus enterotoxin A		Mouse	SEA-003-A	IgG2a
Staphylococcus enterotoxin B		Mouse	SEB-002-A	IgG1
Thermolabile toxin		Mouse	LT-001-A	IgG2b
Thermolabile toxin		Mouse	LT-006-A	IgG1
Tetanus toxin		Mouse	TET-001-A	IgG1
Zearalenone toxin		Mouse	ZEA-001-A	IgG1

SynAbs Primary Antibodies – Steroid hormones

Testosterone is converted to DHT by 5-alpha reductase. DHT is the active metabolite of testosterone in the urogenital sinus. Most of the circulating DHT concentrations represent the androgen converter (testosterone, androstenedione, DHA and SDHA).

The determination of DHT is of interest in the exploration of hirsutism, especially idiopathic hirsutism in which the concentrations can be increased. Values are very low in 5-alpha reductase deficiency, which are manifested in boys by male pseudo-hermaphroditism at birth.

Specificity	Target	Species	Clone	Isotype
DHT	Dihydrotestosterone	Guinea pig	LO-DHT-1	Human IgG1 lambda

SynAbs Primary Antibodies: Fluorescent probes & enzyme reporters

Horseradish Peroxidase (HRP) is an enzyme commonly used as an indicator for chemical reactions which produce peroxide. The enzyme is routinely conjugated to antibodies for use in enzyme-based immunoassay systems.

Fluorescein isothiocyanate (FITC) is a derivative fluorescein used in wide-ranging applications including flow cytometry.

Biotin binds to streptavidin and avidin with extreme high affinity, and high specificity.

It is used in detection of the protein via anti-biotin antibodies or avidin/streptavidin-tagged detection strategies such as enzyme reporters (Horseradish Peroxidase (HRP), Fluorescein isothiocyanate (FITC)) or fluorescent probes (DY Quenchers).

Specificity	Target	Species	Clone	Isotype
HRP	Horseradish peroxidase	Rat	LO-HRP-13	IgG1 kappa
HRP	Horseradish peroxidase	Rat	LO-HRP-14	IgG1 kappa
FITC	Fluorescein isothiocyanate	Rat	LO-FLUO	IgM kappa

SynAbs Primary Antibodies: His Tag

A poly-histidine tag is an amino acid motif in consisting of several histidine residues, inserted either at the N- or C-terminus of the protein. It is frequently used for

- purification by IMAC affinity chromatography of proteins produced in *E.Coli* expression system,
- protein-protein interactions,
- fluorescent dyes to follow the circulation of specific proteins.

SynAbs developed 2 rat monoclonal antibodies targeting N-terminal and C-terminal parts of your histidine tag with strong specificity. By using them together as a cocktail (under the same reference LO-His) you target all the His-tagged protein.

Specificity	Target	Species	Clone	Isotype
His Tag (N-Ter & C-Ter)	His Tag (N-Ter & C-Ter)	Rat	LO-His-1	IgG2b kappa
His Tag (N-Ter & C-Ter)	His Tag (N-Ter & C-Ter)	Rat	LO-His-2	IgG2b kappa

	SYnAbs Cocktail	Competitor
Influenza membrane protein	3,300	2,150
metallo-β-lactamase #1	3,200	1,890
Nucleocapsid protein	2,900	1,700
Surface glycoprotein #1	3,300	0,600
Surface glycoprotein #1	3,600	1,900
Surface glycoprotein #3	3,500	1,900
Toxin	1,500	1,900
VHH #1	3,500	2,500
VHH #2	3,100	1,600
metallo-β-lactamase #2	2,700	0,160
metallo-β-lactamase #2 w/o HisTag	0,180	0,180
Binding protein #1	3,300	2,100
Binding protein #2	2,700	1,800
Mannose receptor	2,700	1,700
Surface glycoprotein #4	2,900	0,640
metallo-β-lactamase #3	3,100	3,300
metallo-β-lactamase #4	3,100	0,200
metallo-β-lactamase #5	3,400	0,200
Control	0,120	0,150
FAIL RATE	**0/17**	**3/17**

SynAbs secondary antibodies

Secondary antibodies are used for the indirect detection of a target to which a specific primary antibody is first bound. The secondary antibody must have specificity both for the antibody species as well as the isotype of the primary antibody being used. Also, a secondary antibody generally has a detectable tag or other label facilitating detection or purification.

Advantages of indirect detection :

- increased sensitivity due to the signal amplification from multiple secondary antibodies binding to a single primary antibody

- a given secondary antibody can be used with any primary antibody of the same type and host species, making it an infinitely more versatile reagent than individually labeled primary antibodies.

SynAbs Secondary Antibodies: Anti-mouse antibodies

Specificity	Species	Clone	Isotype
Mouse IgM heavy chain	Rat	LO-MM-3	IgM kappa
Mouse IgM heavy chain	Rat	LO-MM-8	IgG1 kappa
Mouse IgM heavy chain	Rat	LO-MM-9	IgG2a kappa
Mouse IgA heavy chain	Rat	LO-MA-7	IgM kappa
Mouse IgA heavy chain	Rat	LO-MA-10	IgM kappa
Mouse IgD heavy chain	Rat	LO-MD-6	IgG2a kappa
Mouse IgD heavy chain	Rat	LO-MD-8	IgG1 kappa
Mouse IgE heavy chain	Rat	LO-ME-2	IgG2a kappa
Mouse IgE heavy chain	Rat	LO-ME-3	IgG1 kappa
Mouse Kappa ligth chain	Rat	LO-MK-1	IgG2a kappa
Mouse Kappa ligth chain	Rat	LO-MK-2	IgG1 kappa
Mouse IgG1 heavy chain	Rat	LO-MG1-2	IgG1 kappa
Mouse IgG1 heavy chain	Rat	LO-MG1-13	IgG1 kappa
Mouse IgG1 heavy chain	Rat	LO-MG1-15	IgG1 kappa
Mouse IgG1,IgG2a, IgG2b, IgG3 heavy chain	Rat	LO-MGCOC-2	IgG1 kappa
Mouse IgG2a heavy chain	Rat	LO-MG2a-2	IgG2a kappa
Mouse IgG2a heavy chain	Rat	LO-MG2a-3	IgG2a kappa
Mouse IgG2a heavy chain	Rat	LO-MG2a-7	IgG1 kappa
Mouse IgG2a heavy chain	Rat	LO-MG2a-9	IgG1 kappa
Mouse IgG2b heavy chain	Rat	LO-MG2b-1	IgG1 lambda
Mouse IgG2b heavy chain	Rat	LO-MG2b-2	IgG1 kappa
Mouse IgG3 heavy chain	Rat	LO-MG3-7	IgM kappa
Mouse IgG3 heavy chain	Rat	LO-MG3-13	IgG1 kappa

SynAbs Secondary Antibodies: Anti-rat antibodies

Specificity	Species	Clone	Isotype
Rat Kappa light chain	Mouse	MARK-1	IgG1 kappa
Rat Kappa light chain	Mouse	MARK-3	IgG1 kappa
Rat Kappa light chain of IgK-1b allotype	Rat	LO-RK1b-1	IgG1 kappa
Rat Kappa light chain of IgK-1b allotype	Rat	LO-RK1b-2	IgG1 kappa
Rat Lambda light chain	Mouse	MARL-15	IgG1 kappa
Rat kappa + lambda light chain	Mouse	MAR(K+L)	IgG1 kappa
Rat IgM heavy chain	Mouse	MARM-4	IgG1 kappa
Rat IgM heavy chain	Mouse	MARM-7	IgG1 kappa
Rat IgD heavy chain	Mouse	MARD-3	IgG1 kappa
Rat IgA heavy chain	Mouse	MARA-1	IgG1 kappa
Rat IgA heavy chain	Mouse	MARA-2	IgG1 kappa
Rat IgE heavy chain	Mouse	MARE-1	IgG1 kappa
Rat IgG1 heavy chain	Mouse	MARG1-1	IgG1 kappa
Rat IgG1 heavy chain	Mouse	MARG1-2	IgG1 kappa
Rat IgG1 heavy chain	Mouse	MARG1-5	IgG1 kappa
Rat IgG2a heavy chain	Mouse	MARG2a-1	IgG1 kappa
Rat IgG2a heavy chain	Mouse	MARG2a-7	IgM kappa
Rat IgG2b heavy chain	Mouse	MARG2b-3	IgG1 kappa
Rat IgG2b heavy chain	Mouse	MARG2b-8	IgG1 kappa
Rat IgG2c heavy chain	Mouse	MARG2c-3	IgG2a kappa
Rat IgG2c heavy chain	Mouse	MARG2c-5	IgG2a kappa
Rat IgG1,IgG2a,IgG2b, IgG2c heavy chain	Mouse	MARG-COC-1	IgG1, IgG2a kappa
Rat IgG1,IgG2a,IgG2b, IgG2c heavy chain	Mouse	MARG-COC-3	IgG1,IgM,IgG2a kappa

SynAbs Secondary Antibodies: Anti-human antibodies

Specificity	Species	Clone	Isotype
Human kappa light chain	Rat	LO-hK-3	IgG1 kappa
Human lambda light chain	Rat	LO-hL-2	IgG1 kappa
Human IgM heavy chain	Rat	LO-hM-7	IgM kappa
Human IgM heavy chain	Rat	LO-hM-14	IgG2a kappa
Human IgM heavy chain	Rat	LO-hM-18	IgG1 kappa
Human IgD heavy chain	Rat	LO-hD-11	IgG1 kappa
Human IgE heavy chain	Rat	LO-hE-10	IgG1 kappa
Human IgE heavy chain	Rat	LO-hE-17	IgG1 kappa
Human IgA1 heavy chain	Rat	LO-hA-8	IgG1 kappa
Human IgA1 heavy chain	Rat	LO-hA-9	IgG2a kappa
Human IgG heavy chain	Rat	LO-hG-20	IgM kappa
Human IgG heavy chain	Rat	LO-hG-22	IgG2c kappa
Human IgG heavy chain	Rat	LO-hG-24	IgG2c kappa
Human IgG4	Rat	LO-hG4-1	IgG1
Human IgG4	Rat	LO-hG4-5	IgG1

All anti-human interleukins and anti-human CD references can be provided by sister company Diaclone.

SynAbs Secondary Antibodies: Anti-species antibodies

Specificity	Species	Clone	Isotype
Bovine Gammaglobulin	Rat	LO-BoG-1	IgG2a kappa
Chicken IgG (IgY)	Rat	LO-IgY-16	IgG1
Chicken IgG (IgY)	Rat	LO-IgY-13	IgG1
Guinea Pig Light Chain	Rat	LO-GpK-1	IgG1
Guinea Pig Heavy Chain	Rat	LO-GpH-1	IgG1
Horse IgGT	Rat	LO-HoGT- 1	
Horse IgGT	Rat	LO-HoGT- 2	
Horse IgGT	Rat	LO-HoGT- 3	
Horse IgGT	Rat	LO-HoGT- 4	
Horse IgGT	Rat	LO-HoGT- 5	
Horse IgGC	Mouse	MA-HOL GC	
Pig IgG	Rat	LO-PiG-1	IgG1 kappa
Rabbit IgG heavy chain	Rat	LO-RG-1	IgG2a kappa

SynAbs Secondary Antibodies: Anti-camelid antibodies

Specificity	Species	Clone	Isotype
Camelid (VHH)	Rat	LO-VHH-11	IgG2a kappa

PLUG&PLAY MANUFACTURING TOOLS

MYstik™, Plug&Play mouse isotyping kit

SynAbs Mouse Immunoglobulin Easy Isotyping Kit or a.k.a. "MYstik™" provides a rapid and easy method (DOT technology) to characterize mouse monoclonal antibody isotypes in cell culture supernatants or purified antibodies preparations. This Plug&Play kit includes ready-to-use reagents necessary to analyze 24 samples in less than 1h30. Buffer solutions are color coded in order to simplify pipetting steps.

The method is based upon robust EIA enzyme immunoassay technique: SynAbs unique rat anti-mouse monoclonals are highly specific to each of the common light and heavy chains of mouse species and can discrimate between IgG1, IgG2a, IgG2b, IgG3, IgM, IgA, IgE, kappa chain and lambda chain. Samples are placed on the strip without any predilution. If desired isotype mAb is present, it will bind to rat mAb by affinity. Note that only specific mAb and none the irrelevant molecules will bind. That counts for the specificity of the test. Second mAb is then added, this one conjugated with enzyme. Colorgenic enzyme substrate is added. The interaction between substrate and captured enzyme generates visible color or dot.

SynAbs residual protein A test

Staphylococcus aureus protein A is a 42 kDa cell wall constituent characterized by its binding capacity to the Fc portion of immunoglobulins. Protein A resins is commonly used to purify monoclonal antibodies as a robust capture step during Down-Stream Processing.

Traditional residual protein A test are ELISA which can detect the total amount of residual protein A. Detaching buffer is often necessary because the proposed ELISAs are unable to recognize protein linked to the mAb of interest. However, the mentioned buffer may interfere in a sandwich ELISA assay, and it is not proved that the purified monoclonal antibody is completely detached.

Facing the hurdle, SynAbs has developed the first rat mAb ables to distinguish free protein A from protein A linked to immunoglobulins with a 0,5 ng/ml sensitivity.

SynAbs, immunoaffinity chromatography purification

Immunoaffinity chromatography a.k.a. IAC is a type of chromatography in which the stationary phase is composed with an antibody. This technique represents a special sub category of affinity chromatography in which a biological agent is used for its strong and specific binding capacities to a target compound.

SynAbs routinely used immunoaffinity columns for the purification of its mouse and rats off-the-shelf monoclonal antibodies and has decided to offer to its customers the possibility to bind SynAbs antibodies or your custom monoclonal antibody to the resin of your choice.

Thanks to SynAbs tools, you can choose to purify in your labs:

- His-tagged recombinant proteins
- mouse antibodies
- rat antibodies
- mycotoxins

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