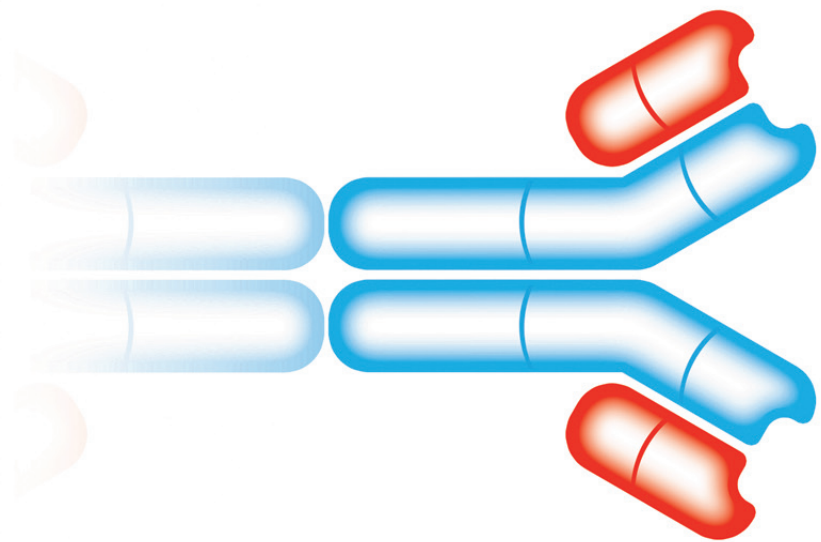
MolBind

ANTIBODIES



ARE ANTIBODIES AGAINST UNIQUE OR HARD TARGETS CRITICAL FOR YOUR APPLICATIONS?

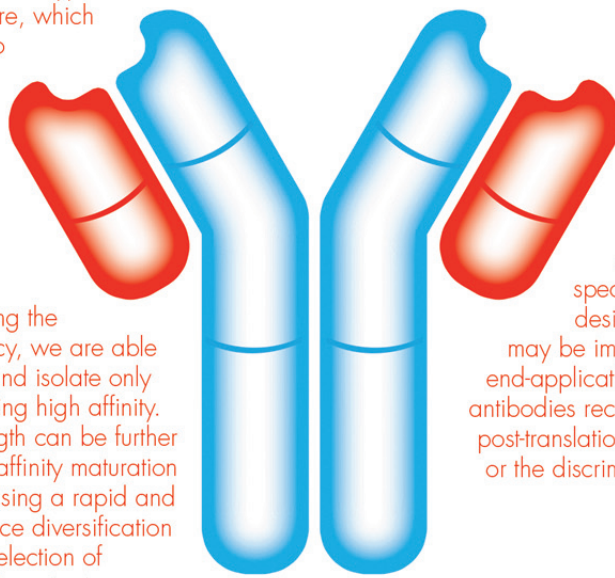
Tailor-made synthetic antibodies

Rapid generation

The generation of novel antibodies is conducted *in vitro* in a selection procedure called panning. Hence, no laborous, time-consuming and invasive immunization of production animals is required. A typical selection procedure, which consists of three to four panning rounds, will last from two to four weeks.

Against poorly immunogenic or toxic antigens

With our synthetic antibody libraries and selection system, we do not need to immunize, and therefore, any molecule can serve as an antigen.



High affinity potential

Simply by adjusting the selection stringency, we are able to select, enrich and isolate only the clones exhibiting high affinity. The binding strength can be further improved by our affinity maturation procedure comprising a rapid and controlled sequence diversification followed by the selection of improved antibody variants.

Against targeted epitopes

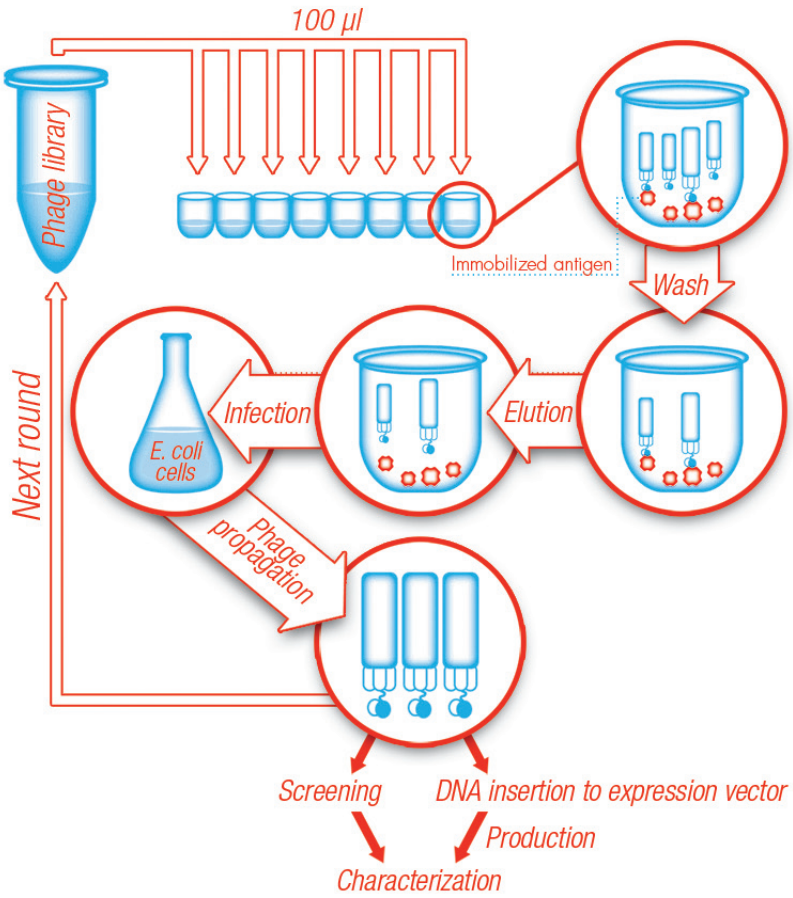
We are able to select antibodies specifically against a desired epitope. This may be important when the end-applications rely on e.g., antibodies recognizing specific post-translational modifications or the discrimination of homologous proteins.

Fully human antibodies with multiple framework options

We can express the selected antibody sequence in various frameworks, including our primary production formats single-chain antibodies (scFv) or antigen binding fragments (Fab), but also e.g., whole IgGs. A careful design may be relevant in applications, where the antibody size or *in vivo* functionality are of critical importance.

Simple and cost-effective production in bacterial cells

The selected antibody sequences will be transformed as part of expression plasmids into *Escherichia coli* cells. The *E. coli* cells provide persistent and inexpensive production of antibodies. The selected antibody sequence may be stored to ensure practically unlimited access to further production.



Schematic presentation of our procedure for the generation of tailor-made antibodies

scFv-antibody library against proteinaceous antigens

Fab-antibody library against haptens

We have separate antibody libraries for protein antigens and haptens. The distinctive designs of the libraries take into account the differences in the mode of recognition between macromolecular and small molecular antigens.

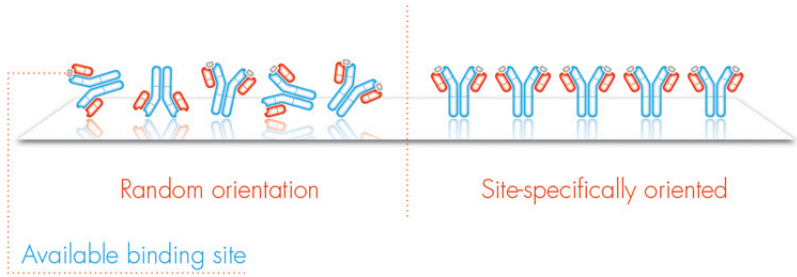
DO YOU NEED READY-TO-USE PROBES FOR IMAGING?
OR ANTIBODIES CONJUGATED TO AFFINITY TAGS OR SOLID SURFACES?

Customized antibody modifications

Affinity probe generation For applications such as imaging, proteomics or immunoassays, the antibodies may be coupled with fluorescent dyes (e.g., lanthanide chelates) or affinity tags. Depending on the customers' requirements, such modifications may be executed utilizing conventional or site-specific coupling chemistries.

The antibodies may also be expressed together with a variety of fusion partners enabling, for instance, secondary recognition (epitope or affinity tags) or signal production (enzymes or fluorescent proteins).

Immobilization Antibodies may be conjugated onto solid surfaces such as microtiter plate wells, nanoparticles or array chips. The immobilization may be conducted utilizing a site-specifically coupled affinity tag (e.g., biotin) in combination with a suitable binding partner (e.g., streptavidin) pre-coated onto the surface. Alternatively, one may opt for other immobilization techniques without control over the antibody orientation.



The selected immobilization technique affects the overall binding efficiency of the surface.

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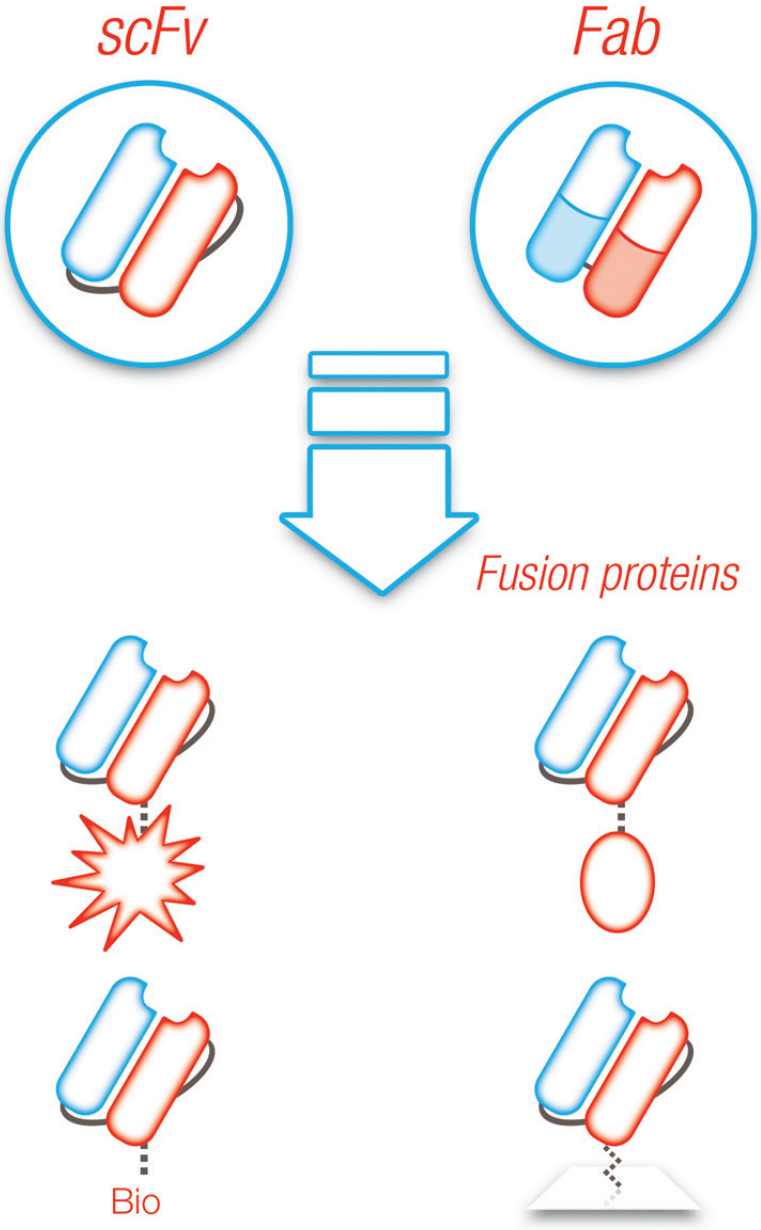

Our service provides multiple options for antibody modification.

Process of antibody generation

Antigen conjugation (e.g. biotinylation)	1-2 weeks
Selection using phage display	2-4 weeks
Characterization	2-3 weeks
Expression + purification	1-2 weeks
Delivery	< 2,5 months
⇩ Affinity maturation	
Delivery	~3-5 months

The course of antibody generation. Prior to the delivery, the characterization of antibody candidate(s) may be performed by the customer or by us. After the delivery, the selected antibody candidates may be subjected to affinity maturation, during which the diversifications of selected antibody candidates take place. This schedule serves as an operational guideline and may be subject to changes depending on customers' requirements.

Do you want additional information regarding our services?
Please visit our website or send questions via email or fax.

Website: www.utu.fi/molbind
Email: molbind@utu.fi
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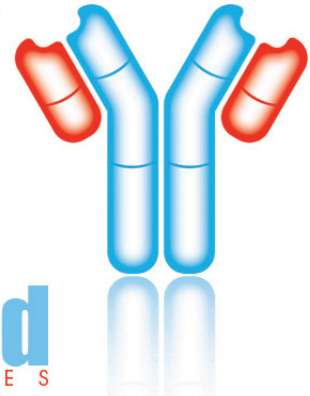

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MolBind Antibodies is a resource laboratory located at the University of Turku

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