

Custom Polyclonal Peptide Antibody Service

Description

Polyclonal antibodies are commonly used in research, diagnostic for protein detection and quantification. Polyclonal antibodies can be generated against proteins or peptides. As an internationally recognized expert in custom peptide synthesis we are now offering a custom polyclonal peptide antibody service.

Advantages

- Peptide antibodies can be generated directly from the amino acid sequence of a protein (either from protein sequence or DNA sequence)
- Specific regions of a protein can be targeted
- Time and cost effective compared to polyclonal antibodies generated against proteins
- Lyophilized

Peptide selection

The major challenge encountered when preparing peptide antibodies is their ability to recognize the native protein. Key to success is a proper selection of the peptides used in the immunization process.

We offer a **peptide prediction** service which will guide you during the selection process. The prediction service includes:

- **Domain exclusion analysis.** It is recommended to exclude ubiquitous domains as well as domains prone to post-translational modifications. Ubiquitous domains raise non-specific reactions. Post-translational modified domains in the native protein are difficult to recognize for antibodies raised against unmodified peptide sequences.
- **Hydrophobicity and antigenicity analysis.** It is usually recommended to select low hydrophobic sequences for the production of peptide antibodies. Such sequences have statistically more chance to be localized at the periphery of the protein thus increasing the chance for the peptide antibodies to recognize the native protein. The

antigenicity analysis should be helpful to select among the low hydrophobic sequences the one with highest calculated antigenic potential.

- **Homology search.** These data show the homology of the predictions with other proteins present in the data bank of the NCBI and give information of the specificity of your antibody.
- **3D structure analysis.** If available in public data bases a 3D structure of your protein is provided.
- **Peptide candidates.** We will suggest 3 to 5 peptides that can be used for immunization.

Maximizing success rate

Based on our experience after careful peptide prediction the chance for a peptide antibody to recognize specifically and efficiently the native protein is usually about 75%. It is possible to increase the success rate to 95% by producing 2 peptide antibodies against the protein.

Applications

In recent years the use of synthetic peptides as immunogens for antibody productions has grown dramatically. As more DNA sequences and their corresponding protein sequences have been published, synthetic peptides have been used to prepare antibodies for direct detection and quantification of uncharacterized proteins.

Peptide antibodies are the ideal tool for immuno enrichment in quantitative proteomics, i.e. SISCAPA (Stable Isotope Standards with Capture by Anti-Peptide Antibodies, see Leigh Anderson and Christie L. Hunter, *Molecular & Cellular Proteomics* 5: 573-588, 2006)

Peptide production

Peptides are synthesized using the solid phase technique developed by Merryfield (1963). Synthesized peptides are purified and coupled to carrier proteins. These conjugates are used to immunize animals. We offer specific peptide conjugation to carrier molecules like BSA, KLH or to MAP molecules.

KLH is most commonly used as it offers highest specificity and the highest number of binding positions for peptides.

Peptides for antibody production should have a length between 6 up to 15 amino acids. Shorter peptides often fail to trigger an antibody response, longer peptides are less specific.

Lyophilized peptide antibodies
As standard we are providing the peptide antibodies in lyophilized form which is offering the following great advantages:

- The product is stable up to 10 years at -80°C
- It is possible to adjust antibody titer and buffer composition during the dissolution on procedure

Shipment is made at room temperature in a small volume, resulting in faster delivery and easier custom clearance while minimizing the risk of product degradation

Storage

STORE AT -20C UPON ARRIVAL
Lyophilized serum is stable up to 3 years at -20C in non open vial
Lyophilized serum is stable up to 10 years at -80C in non open vial

Immunization schedule

	Pre-bleed
week 1	Pre-immune ELISA test
	Initial main immunization
week 5	First immunization boost
week 6	1st test bleed & ELISA test
week 7	Second immunization boost
week 8	2nd test bleed & ELISA test
week 9	Third immunization boost
week 10	Final bleed
week 11+12	Final ELISA test Serum lyophilization & shipment

Standard services

Cat. #	
400 000	<p>Rabbit Peptide Antibody</p> <p>This service includes</p> <ul style="list-style-type: none"> - Two New Zealand rabbits (1.8kg to 2.0kg) - 2ml of pre-immune serum/rabbit - Peptide synthesis up to 15AA residues with a purity >70% - Peptide conjugation to KLH or BSA - One primary subcutaneous injection totaling 1.0mg conjugated peptide in Complete Freund's Adjuvant (CFA) at four to five injection sites on day 0 - Three subcutaneous injections of 0.5mg conjugated peptide in Incomplete Freund's Adjuvant (IFA) at four to five injection sites on day 30, 44 and 58 - Test bleed (1ml/rabbit) in week 6 and week 8 - Terminal bleed by exsanguination (\pm 50ml serum/rabbit) in week 10 - ELISA analysis on test bleeds #1, #2 and on terminal bleeds - lyophilized serum aliquot of bleeds (pre-immune, week 6, week 8 and week 10 shipped at the completion of the immunization protocol) - lyophilized terminal bleeds (from \pm 50ml serum/rabbit) - Delivery of >1mg free peptide - animal maintenance throughout the standard immunization protocol. At the end of the standard protocol rabbits are automatically euthanized except if service #400 701 was ordered, or we have been warned in writing not later than week 8 of the immunization protocol. - delivery of remaining free peptide (>1mg) <p>We will deliver</p> <ul style="list-style-type: none"> - Peptide quality control certificate (including MS and analytical HPLC analysis) - Aliquot of lyophilized serum from pre-immune state - Aliquots of lyophilized serum from test bleed in week 6 and 8 - Lyophilized serum from terminal bleed (equivalent to \pm50ml serum/rabbit) - Delivery of >1mg free peptide - ELISA results of test bleeds in week 6, week 8 and terminal bleed

Optional services

Cat. #	
400 701	Immunization program extension
400 003	Additional rabbit
400 601	Non lyophilized serum shipped below ambient
400 200	High grade purity peptide
400 100	Long peptide - additional amino acid
400 101	Phosphorylation
400 304	MAP peptide
400 401	Western blot analysis
400 402	Immunoprecipitation
400 500	IgG purification
400 501	Affinity purification
400 502	Phospho-specific affinity purification
400 800	Peptide prediction service – free service when ordering the antibody

We offer similar service for Mouse-Antibodies! Please inquire.

In addition to these offices, Thermo Fisher Scientific maintains a network of representative organizations throughout the world.

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