

Genaxxon BioScience

Synthetic Peptides

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Peptide Synthesis Service

General overview

The use of Fmoc chemistry on multiple reaction vessel synthesizers allows us to take full advantage of peptide cleavage and deprotection. Therefore, we can offer a rapid delivery of peptides synthesized using mixed anhydride or active ester coupling chemistries.

A Quality Control is performed on each synthesized peptide by RP-HPLC and MALDI-TOF Mass Spectrometry. Both, the HPLC chromatogram as well as the MS-Spectrum are supplied with the sample. To reach different purity levels, peptides are routinely purified by repetitive preparative RP-HPLC, although other strategies are also available. Contact us for more information.

Purity levels

Genaxxon offers different purity levels from >55% up to >95% to help you make the right choice for your purpose.

Immunograde purity (> 55% up to 70%)

For immunological and related purposes

Minimum amounts: 2 mg to 50 mg

Length: 6-45 amino acids

Please inquire for longer peptides or higher amounts

Even if a purity level of > 70% is better for generating antibodies, a purity level of >55% up to 70% is usually sufficient for this purpose. Immunograde peptides are purified by precipitation and not purified by HPLC methods. To make sure that peptides of this purity work, a higher amount is used for coupling or direct immunisation.

The presence of organic impurities inherent to the synthesis process can be the source of adverse side effects like inflammatory or even toxic effects during the antibody production procedure.

Peptides of purity > 70% and 80% - 90%

For immunological and related purposes. For enzymology, biological activity studies, ELISA pretesting and for other purposes.

Minimum amounts: 2 to 50 mg

Length: 6-45 amino acids

HPLC chromatogram and Mass Spectrum will be delivered.

Please inquire for longer peptides or higher amounts.

> 70% pure peptides are usually better for generating or testing antibodies and also a smaller amount can be used for immunisation purposes. The HPLC-chromatography step will reduce organic impurities to a minimum that is sufficient for immunisation purposes with only little probability of side effects. Therefore, we recommend to use peptides of > 70% purity for immunisation purposes.

Peptides that are > 85% or > 95% pure are usually required in enzymology or biological activity studies. The quality of these peptides is checked by HPLC using a photodiode array detector and by Mass Spectrometry. These data are included in the peptide delivery.

Highly purified peptides (> 95% pure)

For enzymology and biological activity studies

Minimum quantity: 2 mg up to 20 mg

Length: 6 to 45 amino acids

Included in price: HPLC analysis and Mass Spectrometry analysis

Please inquire for longer peptides or higher amounts

Peptides that are > 95% pure are usually required in enzymology or biological activity studies. These peptides can also be used as standards in Chromatography. The quality of these peptides is checked by HPLC using a photodiode array detector and by Mass Spectrometry.

Available modifications

N-Acetylation, C-Amidation, Biotinylation, Phosphorylation, Sulfurylation, fluorescent modifications (FITC, rhodamine, etc.), Isotope labelling and others.

Prolongation by spacer molecules (e.g. Ahx, or β -Ala), implementation of special groups for Jod125 labelling or implementation of linkers for the selective coupling of peptides to carrier proteins.

If you can't find the modification you want, just contact us at info@genaxxon.com.

Special peptides

Peptides containing non-natural amino acids

Provided the non-natural amino acids (e.g. D-amino acids, β -amino acids etc.) are commercially available, they can be introduced into a peptide sequence. - **Implementation of rare AS** into synthetic peptide, e.g. D-amino acids, N-methyl amino acids, Hydroxyprolin, phosphorylated amino acids (Tyr, Thr, Ser).

Modified peptides

Both side chain modifications and N- or C-terminal modifications are routinely achieved either during or after synthesis. These modifications specifically include the synthesis of biotinylated, phosphorylated, protected and cyclic peptides (such as Cys-Cys disulfide bridges etc.) as well as branched peptides.

Cyclic peptides

Recently, a growing interest in cyclic disulfide-bridged peptides has become apparent. In many instances, classical oxidative cyclizations lead to peptide di- and multimerization or in unwanted cyclic structures. Genaxxon and its partners have gained in depth experience to overcome problems like that, thus being able to synthesize mono- and dicyclic peptides very efficiently.

From 50 to 1000 peptides

Epitope scanning is a very efficient method to check polyclonal antisera for the specific epitopes the antibodies are recognizing. The principle is to synthesize series of overlapping peptides covering the whole protein sequence and to test the polyclonal (or monoclonal) antibodies against each of them. This technique allows for easy and quick identification of the parts of the protein which are recognized by the antibodies.

Other applications, such as lymphocyte stimulators or enzyme inhibitors also require large numbers of peptides.

Genaxxon offers custom peptide synthesis services at low cost. Among the existing possible issues to this problem (peptides on membranes, paper, pins or coated on ELISA plates) Genaxxon chose to develop the service in order to answer in the most flexible way to these needs: in many instances, a soluble, cleaved peptide has many advantages over a peptide fixed on a solid support, because the latter cannot be used readily in many biological experiments. We can now propose series of peptides in quantities ranging from 1 mg up to 20 mg at very attractive prices depending on the length and the number of peptides as well as the quantity needed.

Technical information

The first choice solvent for most peptides is ultra-pure water, or DMSO. If the peptide does not dissolve easily, sonication may help. Dilute acetic acid or ammonium hydroxide may be necessary to dissolve basic or acidic peptides, respectively. For peptides which are not dissolved by these methods, guanidinium chloride or acetonitrile may be necessary. Use of these compounds may have a detrimental effect on some experiments, so we recommend that care be taken when designing the peptide. Residues such as Ala, Cys, Ile, Leu, Met, Phe and Val increase the chance that the peptide will have solubility problems.

Most peptides are stable indefinitely at -20 °C, especially if they have been lyophilized and stored in a desiccator. Allow lyophilized peptides to come to room temperature before exposing them to air. This will minimize moisture-related effects.

When lyophilization is not possible, the next best method of storage is small, working-size aliquots. For peptides which contain Cys, Met or Trp, deoxygenated buffers are a must for solubilization because the peptides will readily oxidize to air. Nitrogen or argon passed slowly over the peptide before closing the vial will also decrease oxidation.

Peptides containing Gln or Asn are also easily degraded. All of these peptides have a limited lifetime in comparison to those that do not contain these problem residues.

Delivery

> 70% pure peptides are shipped lyophilized within 14-20 working days of receipt of the order. For highly purified peptides (> 85% pure), some additional days are required.

Standard peptide synthesis (prices in Euro)*

Amount	HPLC purity > 70%				HPLC purity 80% - 90%			
	2 mg	5 mg	10 mg	20 mg	2 mg	5 mg	10 mg	20 mg
6 AS	99	120	144	204	129	165	195	258
7 AS	116	140	168	238	151	193	228	301
8 AS	132	160	192	272	172	220	260	344
9 AS	149	180	216	306	194	248	293	387
10 AS	165	200	240	340	215	275	325	430
11 AS	182	220	264	374	237	303	358	473
12 AS	198	240	288	408	258	330	390	516
13 AS	215	260	312	442	280	358	423	559
14 AS	231	280	336	476	301	385	455	602
15 AS	248	300	360	510	323	413	488	645
16 AS	264	320	384	544	344	440	520	688
17 AS	281	340	408	578	366	468	553	731
18 AS	297	360	432	612	387	495	585	774
19 AS	314	380	456	646	409	523	618	817
20 AS	330	400	480	680	430	550	650	860
21 AS	347	420	504	714	452	578	683	903
22 AS	363	440	528	748	473	605	715	946
23 AS	380	460	552	782	495	633	748	989
24 AS	396	480	576	816	516	660	780	1032
25 AS	413	500	600	850	538	688	813	1075

*Prices given in tables above and on next page are only meant as an indication. Please inquire for a quotation. Most often our price will be below the prices given in the tables.



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Amount	HPLC purity >95%				Immunograde peptides		
	2 mg	5 mg	10 mg	20 mg	5 mg	10 mg	20 mg
6 AS	180	261	336	588	75	88	99
7 AS	210	305	392	686	87	102	115
8 AS	240	348	448	784	109	116	131
9 AS	270	392	504	882	121	130	147
10 AS	300	435	560	980	132	144	163
11 AS	330	479	616	1078	143	158	179
12 AS	360	522	672	1176	154	172	195
13 AS	390	566	728	1274	165	186	211
14 AS	420	609	784	1372	176	200	227
15 AS	450	653	840	1470	187	214	241
16 AS	480	696	896	1568	198	228	255
17 AS	510	740	952	1666	208	242	269
18 AS	540	783	1008	1764	218	256	283
19 AS	570	827	1064	1862	228	270	297
20 AS	600	870	1120	1960	238	282	311
21 AS	630	914	1176	2058	248	294	325
22 AS	660	957	1232	2156	258	306	339
23 AS	690	1001	1288	2254	268	318	353
24 AS	720	1044	1344	2352	278	330	367
25 AS	750	1088	1400	2450	288	342	381

*Prices given in tables above are only meant as an indication. Please inquire for a quotation.
Most often our price will be below the prices given in the tables.

Immunograde peptides are not purified by HPLC. Nevertheless purity is normally good enough for use in immunisation procedures. All peptides (not immunograde ones) are supplied with MS- and HPLC data sheet.

For standard immunisation procedures peptides of 70% purity are used. If you want to use „Immunograde“ peptides, double amounts have to be injected.

Please inquire for other amounts, lengths or purities (info@genaxxon.com, www.genaxxon.com)
All purified peptides include complete documentation with analytical HPLC and MS.

Our peptides will be delivered with free COOH and NH₂ termini.
If required, we will perform N-terminal acetylation or C-terminal amidation free of charge.

We will deliver your peptides in aliquots on request.

Please tell us your specific needs. We will consult you and prepare a tailor made quotation.