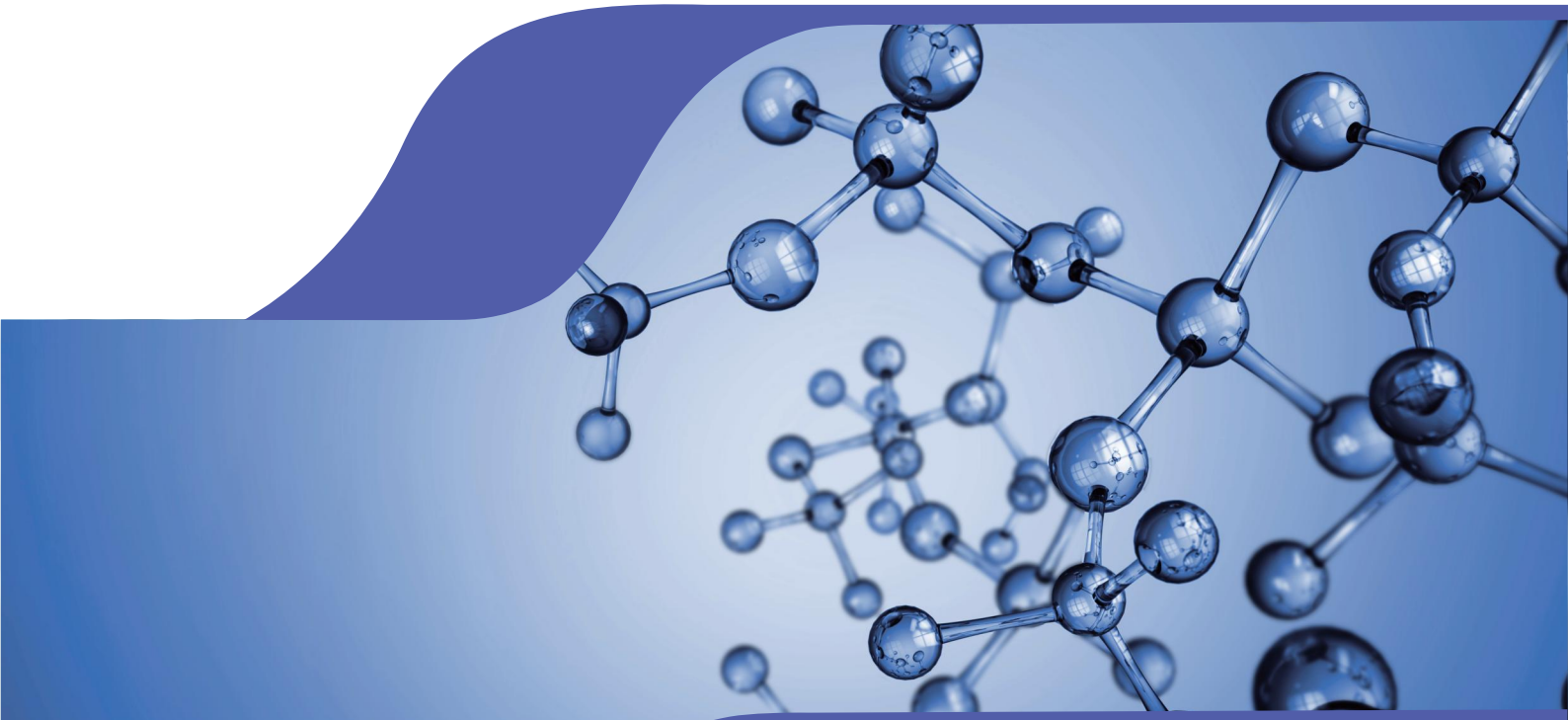
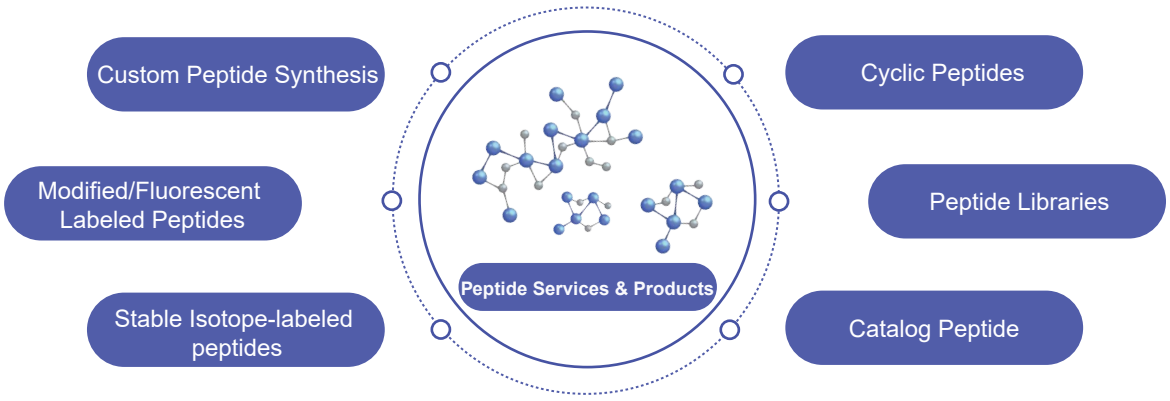
GENCEFE



Peptide Synthesis & Modifications

GenCefe Biotech's peptide synthesis technology platform has advanced purification systems and comprehensive testing equipment, providing milligram to kilogram-level peptide synthesis and modification services, and the product purity can reach 98% and above. Our experienced technical support team offers professional pre-sales, in-sales, and after-sales services, and timely feedback on project progress.

Accelerate your research with GenCefe high-quality peptides and efficient services!



Peptide Synthesis

GenCefe Biotech has established both solid-phase and liquid-phase peptide synthesis process platforms, selects appropriate synthesis process according to the properties of the peptide. We provide customers with high-quality peptide products and services, including customized peptides, modified peptides, isotope-labeled peptides, cyclized peptides, glycopeptides, peptide libraries, etc.

Service features

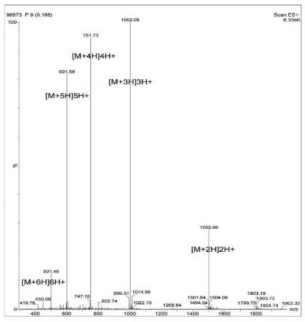
- Customized synthesis: milligram to kilogram level, purity up to >98%, and the synthesis length can reach 180 amino acids.
- Comprehensive modifications: more than 300 modifications, including phosphorylation modification, biotin labeling, fluorescent labeling, etc.
- Aliquot service: we provide aliquot service according to customer needs, and the minimum aliquot volume is 0.2mg/tube.
- Strict quality control: we guarantee that the delivered products are sufficient, and all peptides are tested by MS and HPLC.

Applications

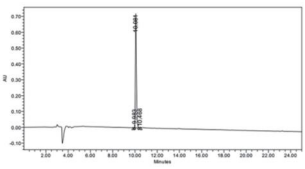
- Bioactive peptides
- Peptide antigens
- Peptide drugs
- Peptide vaccines
- Food additives
- Cosmetic peptides

Sample of QC Report

Each peptide provided by GenCefe has been tested by HPLC and MS to ensure the delivery of high-quality products.



MS Report



	RT	Area	%Area	Height
1	9.983	15229	0.31	13998
2	10.081	4921755	99.35	717507
3	10.468	16864	0.34	2305

HPLC Report

Service Specifications

Services	Size	Purity	Turnaround Time
Custom Peptide Synthesis	Milligram to gram level	Crude to >98%	10+ days
Peptide Modifications			Get a Quote
Peptide Library	1-4 mg/peptide 5-9 mg/peptide 10-19 mg/peptide		2-3 weeks
Large-Scale Peptide Synthesis	Kilogram level		Get a Quote

Peptide Modifications

Peptide modification mainly modifies the backbone and side chain groups of the peptide. The modified peptide can significantly reduce immunogenicity, reduce side effects, improve solubility, prolong the duration of action in the body, and change the distribution in the body.

GenCefe provides over 300 different peptide modification groups, including: N-terminal modifications, C-terminal modifications, fluorescent labeling, cyclic peptides, biotin labeling, etc.

Modifications

N terminal	C terminal	Other Modifications
Acetylation (Ac)	Amidation	Biotin and FITC Labeling
Formylation (For)	AMC	Disulfide Bridge
Fatty Acid	Aldehyde New	Phosphorylation
Benzoyl (Bz)	Alcohol New	BSA, KLH, OVA Conjugation
Benzyloxycarbonylation (CBZ)	Ester (OMe, OEt) New	PEGylation
Bromoacetyl (Br-Ac)	p-Nitroaniline (pNA)	MAPS
Pyroglutamyl (pGlu) (Pyr)	NHMe, NHEt and Nhisopen	Cyclic Peptide
Succinylation (Suc)	tBu	Quenched Fluorescent Peptide
Tertbutoxycarbonyl (Boc)	TBzl	Special Amino Acid
3-Mercaptopropyl (Mpa)	Cysteamide (Cya)	Methyl and N-Methyl

Only commonly used modifications are listed in the table. If the modification you need is not in the list, please contact sales or technical support for consultation.

Fluorescent Labeling

Fluorescent dyes	Excitation wavelength (nm)	Emission wavelength (nm)	Fluorescent dyes	Excitation wavelength (nm)	Emission wavelength (nm)
Cy2	489	506	Rhodamine B	555	580
GFP (Red Shifted)	488	507	TAMRA	560	582
FITC	494	518	Cy3.5	581	596
5-FAM	494	522	Texas Red	595	615
Cy3	550	570	Cy5	649	670
TRITC	547	572	Cy5.5	675	694

The table is a partial list of fluorescent dyes. If the fluorescent group you need is not in the list, please contact sales or technical support for consultation.

Stable Isotope-Labeled Peptides

Isotope-labeled peptides are commonly used in proteomics research and peptide metabolic pathway research. Generally, stable isotopes N15 and C13 are used for labeling, and mass analysis instruments such as mass spectrometer, gas chromatograph, and nuclear magnetic resonance are used for measurement.

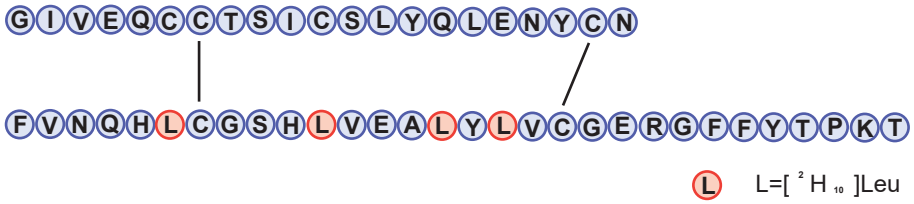
GenCefe provides custom stable isotope-labeled peptides, which directly introduces amino acids labeled with isotopes, such as ^{13}C, ^{15}N, during the peptide synthesis process to achieve the purpose of labeling the entire peptide chain. Commonly used isotope-labeled amino acids include alanine (Ala), lysine (Lys), arginine (Arg), etc.

Service Types

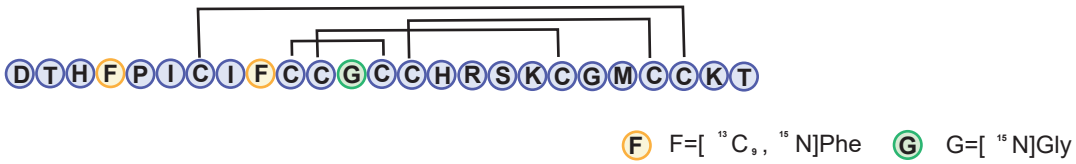
- N15-labeled isotope peptides
- C13-labeled isotope peptides
- N15, C13 dual-labeled isotope peptides

Case Studies

[D10]Leu-Insulin (Human) (+40 Da)



[$^{13}C_{18}$, $^{15}N_3$]-Hepcidin (Human) (+21 Da)



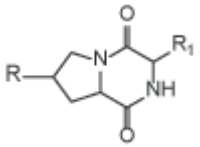
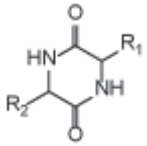
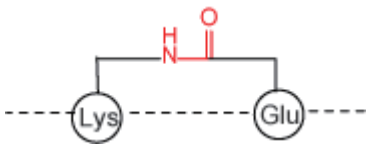
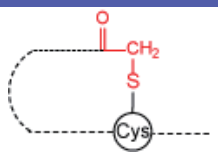
Isotope Types

Amino acid	Code	Mass difference	Isotope	Isotopic enrichment
Alanine	A	+4 Da	U-$^{13}C_3$, ^{15}N	>99%
Arginine	R	+10 Da	U-$^{13}C_6$, $^{15}N_4$	>99%
Isoleucine	I	+7 Da	U-$^{13}C_6$, ^{15}N	>99%
Leucine	L	+7 Da	U-$^{13}C_6$, $^{15}N_4$	>99%
Lysine	K	+8 Da	U-$^{13}C_6$, $^{15}N_2$	>99%
Phenylalanine	F	+10 Da	U-$^{13}C_9$, ^{15}N	>99%
Proline	P	+6 Da	U-$^{13}C_5$, ^{15}N	>99%
Valine	V	+6 Da	U-$^{13}C_5$, ^{15}N	>99%

Cyclic Peptide Synthesis

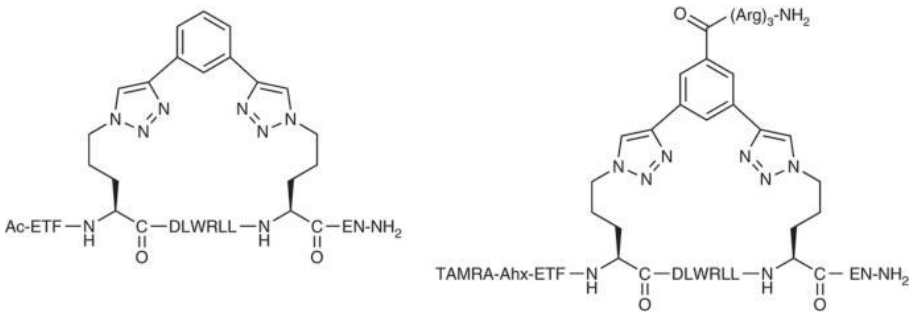
Peptide cyclization is carried out on the backbone or side chain of the peptide. It not only eliminates the amino and carboxyl groups at the N-terminus and C-terminus of the peptide that are susceptible to degradation by exopeptidases, but also enables the peptide to maintain a conformation that is conducive to binding to the receptor, thereby greatly improving the biological activity of these peptides.

Cyclic Peptide Types

cyclo(X1-X2———Xn) Head-to-tail cyclization	Diketopiperazine	
		
X = NH : polypeptide X = O : depsipeptide (including N-methyl amino acids)	R=H : cyclo(X-Pro) R=OH : cyclo(X-Hyp)	cyclo(X-X)
Cyclization at side chain	**Lactone/Thiolactone**	**Thioether**
		
	X=O : lactone X=S : thiolactone	

Deamino-dicarba

Stapled Peptides



Stapled peptides are modified peptides that usually have an α-helical conformation and are constrained by a synthetic scaffold (staple compound). Stapled peptides have a higher degree of α-helical conformation and significantly enhance their ability to bind to targets. They can penetrate cell membranes, are difficult to be hydrolyzed by proteases, and have a longer half-life in vivo.

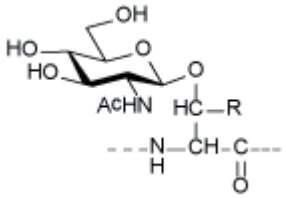
Glycopeptides

Glycosylation modification is the process of connecting monosaccharides or polysaccharides to peptides through chemical bonds. The peptides obtained after glycosylation modification are called glycopeptides. Glycosylation plays a key role in many biological functions, such as protein stability, activity and localization, as well as cell-to-cell recognition and signal transduction. There are two main types of peptide glycosylation: N-linked glycosylation and O-linked glycosylation.

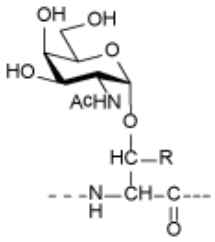
- N-linked glycosylation: occurs on the Asparagine (Asn, N) residue and is one of the most common linkages in nature. Most N-linked glycosylation takes the form of GlcNAc-β-Asn, and there are also forms such as GlcNac-a-Asn and Glc-Asn.
- O-linked glycosylation: occurs on the hydroxyl side chain of amino acids, usually from serine or threonine residues. Most O-linked glycosylation takes the form of GlcNac-B-Ser/Thr or GalNac-a-Ser/Thr.

Case Studies: glycopeptides containing oligosaccharides

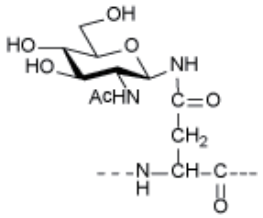
Ser/Thr(GlcNAc), Ser/Thr(GalNAc), Asn(GlcNAc), etc.



R=H: Ser(GlcNAc)
R=CH_3: Thr(GlcNAc)
O-GlcNAcylation

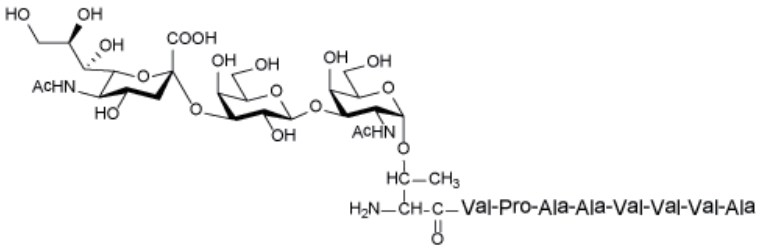


R=H: Ser(GalNAc)
R=CH_3: Thr(GalNAc)

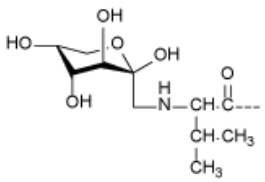


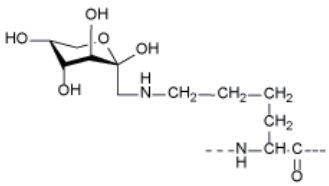
Asn(GlcNAc)

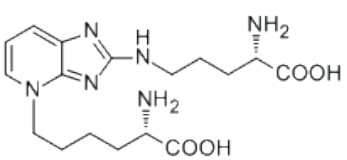
Antiproliferative Factor Sialoglycopeptide (APF Sialoglycopeptide)



AGEs (advanced glycation end products)



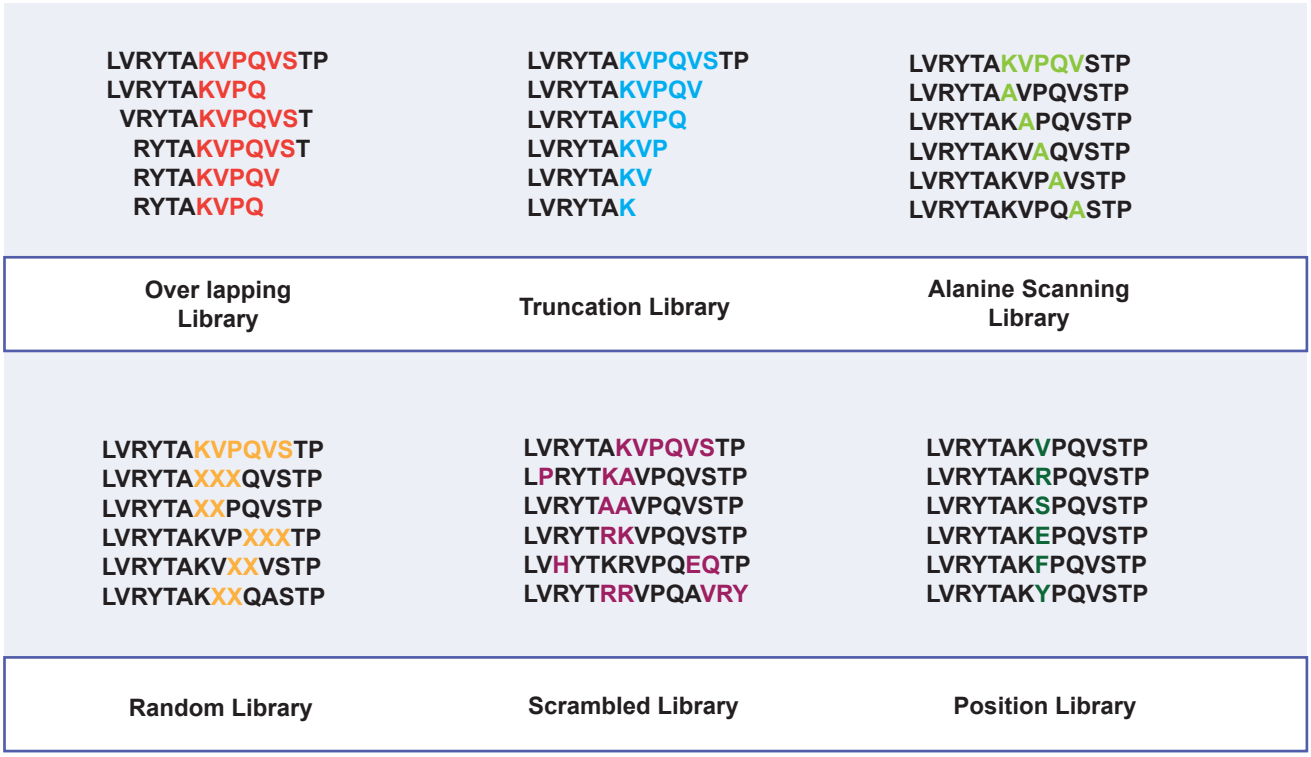




Peptide Libraries

Peptide libraries are powerful screening tools for selecting very small amounts of peptides with critical biological activities from large batches of peptides. The GenCefe peptide library synthesis platform can synthesize peptides up to 20 amino acids in situ in a 96-well plate. A large number of peptides can be produced through in situ peptide synthesis and chemical coupling methods. Each plate of peptides will undergo strict quality control to ensure the accuracy of the delivered products.

Peptide Library Types



Service Specifications

	Crude Peptide Library	Purified Peptide Library-1	Purified Peptide Library-2
Purity	Crude	>70%	> 95%
QC	HPLC and MS analysis reports are provided for each peptide		
Length	7-25 aa		
Size	1-4 mg/peptide 5-9 mg/peptide 10-19 mg/peptide		
Deliverables	Lyophilized powder in 96-well plates or individually labeled tubes		
Modifications	Biotin, fluorescent, unnatural amino acids, disulfide bonds, phosphorylation, cyclization and other modifications are available		
Turnaround Time	2-3 weeks	3 weeks	3 weeks
Minimum Order	24 peptides		

Catalog Peptides (particial)

Peptide name	Peptide Sequence
β-Amyloid(1-40)	DAEFRHDSGYEVHHQKLVFFAEDVGSNKGAIIGLMVGGVV
β-Amyloid (1-42)	DAEFRHDSGYEVHHQKLVFFAEDVGSNKGAIIGLMVGGVVIA
β-Amyloid (1-40), amide	DAEFRHDSGYEVHHQKLVFFAEDVGSNKGAIIGLMVGGVV-NH2
β-Amyloid (40-1)	VVGGVMLGIIAGKNSGVDEAFFVLKQHHVEYGSDHRFEAD
β-Amyloid Peptide (1-42), rat	DAEFGHDSGFEVRHQKLVFFAEDVGSNKGAIIGLMVGGVVIA
β-Amyloid (25-35)	Gly-Ser-Asn-Lys-Gly-Ala-lle-lle-Gly-Leu-Met
LL-37	LLGDFFRKSKEKIGKEFKRIVQRIKDFLRNLVPRTES
TAT	YGRKKRRQRRR
HIV-1 TAT Protein Peptide	Tyr-Gly-Arg-Lys-Lys-Arg-Arg-GIn-Arg-Arg-Arg
3Flag	MDYKDHDGDYKDHDIDYKDDDDKL
MOG (35-52)	MEVGWYRSPFSRWHLYR
MOG (35 - 55), human	MEVGWYRPPFSRWHLYRNGK
MOG (35 - 55), mouse, rat	MEVGWYRSPFSRWHLYRNGK
Gastrin 1, human	Glp-GPWLEEEEEAYGWMDF-NH2
NPY	YPSKPDNPGEDAPAEDMARYYSALRHYINLITRQRY-NH2
ACTH (4-11), human	MEHFRWGK
(Glp1)-Apelin-13, human, bovine	Glp-Arg-Pro-Arg-Leu-Ser-His-Lys-Gly-Pro-Met-Pro-Phe
Peptide YY(3-36), PYY, human	IKPEAPGEDASPEELNRYYASLRHYLNLVTRQRY-NH2
Exendin-4	HGEGTFTSDLSKQMEEEAVRLFIEWLKNGGPSSGAPPPS-NH2
C-Peptide, human	EAEDLQVGQVELGGGPGAGSLQPLALEGSLQ
RGD	RGD
Cyclo (- RADfE), RGD negative control	Cyclo (-RADfE-)
Cyclo (-GRGDSP)	GRGDSP, N to C cyclized
Cyclo(-RGDfK-)	Cyclo (-RGDfK)
Cyclo (- RGDyK)	Cyclo (-RGDyK)
Cyclo (- RGDfC-)	Cyclo (-RGDfC-)

Only some of the popular catalog peptides are listed in the table. If the peptide you need is not in the list, please contact GenCefe sales or technical support for consultation.

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