- Biologically Active Peptides
- Peptide Tools
- Carbohydrate
- Enzyme Substrates
- Products of Peptides International, Inc.
- Custom Services

PEPTIDE INSTITUTE, INC.

Supplemental Product List

28-1

Biologically Active Peptides

AG30/5C

Code	Compound			Price:Yen
4469-s New -20℃	**AG30/5C** Met-Leu-Lys-Leu-Ile-Phe-Leu-His-Arg-Leu- Lys-Arg-Met-Arg-Lys-Arg-Leu-Lys-Arg-Lys- Leu-Arg-Leu-Trp-His-Arg-Lys-Arg-Tyr-Lys (M.W. 4103.2) $C_{189}H_{330}N_{66}O_{32}S_2$	Vial	0.1 mg	10,000

Antimicrobial Peptide with Angiogenic Properties

Peptides with antimicrobial activity, in addition to angiogenic properties are good candidates for wound-healing drugs. One such peptide lead, AG30 (AG: Angiogenic Peptide) was identified in 2009 by the group of Drs. Nakagami and Kaneda of Osaka University[1]. Actually, AG30 is predicted by *in silico* analysis of an angiogenic cDNA clone p3743[2].

Through feasibility study and the subsequent clinical investigation of AG30, **AG30/5C** has just been discovered from the structure-activity relationship study of AG30. In **AG30/5C** the cationic residues of Arg and Lys replace five neutral amino acids[3]. This modification in the primary structure revealed that **i)** the helical structure is maintained even in the lower extent than that of parental AG30, **ii)** the potencies are significantly improved in the migration and tube forming ability of human endothelial cells as well as in the antimicrobial activity against *P. aeruginosa, Candida*, and *S. aureus*, and **iii)** wound healing effects are observed in a diabetic mouse model and in a porcine model (100 μg/ml).

In this study, **AG30/5C** is produced applying the conventional solution method compatible to Good Manufacturing Practice (GMP) guidelines. The structure and characteristics of **AG30/5C** are similar to those of LL-37, which is known as an antimicrobial peptide with angiogenic properties. **AG30/5C**, which may facilitate the discovery of novel therapeutic agents, is available now from Peptide Institute, Inc.

AG30: MLSLIFLHRLKSMRKRLDRKLRLWHRKNYP
AG30/5C: MLKLIFLHRLKRMRKRLKRKLRLWHRKRYK

1) T. Nishikawa, H. Nakagami, A. Maeda, R. Morishita, N. Miyazaki, T. Ogawa, Y. Tabata, Y. Kikuchi, H. Hayashi, Y. Tatsu, N. Yumoto, K. Tamai, K. Tomono, and Y. Kaneda, *J. Cell. Mol. Med.*, **13**, 535 (2009). (*Original; AG30 & Pharmacol.)*
2) T. Nishikawa, H. Nakagami, A. Matsuki, A. Maeda, C.Y. Yo, T. Harada, R. Morishita, K. Tamai, and Y. Kaneda, *Hum. Gene Ther.*, **17**, 470 (2006). (*Angiogenic cDNA Clone p3743*)
3) H. Nakagami, T. Nishikawa, N. Tamura, A. Maeda, H. Hibino, M. Mochizuki, T. Shimosato, T. Moriya, R. Morishita, K. Tamai, K. Tomono, and Y. Kaneda, *J. Cell. Mol. Med.*, doi: 10.1111/j.1582-4934.2011.01406.x (*Original; AG30/5C & Pharmacol.*)

AMP-IBP5

Code	Compound			Price:Yen
4468-s New -20℃	**AMP-IBP5 (Human)** **Insulin-Like Growth Factor-Binding Protein 5 (Human, 193-214 Amide)** **(Porcine, Rat, Mouse, Bovine)** Ala-Val-Tyr-Leu-Pro-Asn-Cys-Asp-Arg-Lys- Gly-Phe-Tyr-Lys-Arg-Lys-Gln-Cys-Lys-Pro- Ser-Arg-NH_2 (Disulfide bond between Cys^7-Cys^{18}) (M.W. 2655.1) $C_{117}H_{188}N_{38}O_{29}S_2$ *Antimicrobial Peptide*	Vial	0.1 mg	10,000

Dr. Minamino and his colleagues of National Cerebral and Cardiovascular Center Research Institute have been performing the proteomics approach to unveil the endogenous peptides. His group has now identified a novel antimicrobial peptide, **AMP-IBP5** [named after an antimicrobial peptide derived from insulin-like growth factor-binding protein 5 (IGFBP-5)] using human pancreatic neuroendocrine tumor cell QGP-1[1].

AMP-IBP5 is actually a 22 amino acid residue peptide with dual post-translational modifications: C-terminal amidation and intramolecular disulfide bond formation, the latter of which is a distinct finding because the disulfide linkage of IGFBP-5 has been differently predicted previously. The primary structure of **AMP-IBP5** is conserved among many mammals including human, mouse, rat, pig, and cow. **AMP-IBP5** is characterized to have a highly basic nature and exerts broad spectra of antimicrobial activity against Gram-positive bacteria, Gram-negative bacteria, and fungi (IC_{50} = μM range), the potency of which were comparable to LL-37 (Code 4445-s) and even higher than those of human β-defensin-2 (Code 4338-s). Interestingly, this function is missing in parental IGFBP-5. Major location sites of immunoreactive **AMP-IBP5** in rats are clarified as being the pituitary gland, brain, and small intestine.

This newly discovered **AMP-IBP5** has the potential to become an essential peptide with antimicrobial activity, along with existing antimicrobial peptides such as defensins and LL-37.

1) T. Osaki, K. Sasaki, and N. Minamino, *J. Proteome Res.*, **10**, 1870 (2011). (*Original; Primary Structure & Pharmacol.*)

Ternatin

Code	Compound			Price:Yen
4464-v New -20℃	**[D-Leu^7]-(−)-Ternatin** *cyclo*(-D-alle-MeAla-MeLeu-Leu-MeAla-D-MeAla-D-Leu-) (M.W. 721.97) $C_{37}H_{67}N_7O_7$ *Fat Accumulation Inhibitor against 3T3-L1 Adipocytes*	Vial	1 mg	30,000

Professor Uemura of Nagoya University isolated (−)-ternatin from the mushroom *Coriolus versicolor* and determined its structure by the combination of NMR analysis and total chemical synthesis[1]. The inhibitory effects of this highly N-methylated cyclic 7-peptide, (−)-ternatin, in both adipogenesis and lipid metabolism, have been clarified *in vitro* as well as *in vivo*[2,3]. These include: **i)** a fat accumulation inhibitory effect and cell viability in 3T3-L1 murine adipocytes (IC_{50} = 0.027 μM and 0.28 μM, respectively) and **ii)** suppression of body weight gain and fat accumulation in C57BL/6J mice at a dose of 5 mg/kg/day, together with **iii)** mechanism for exerting these inhibitory activity.

Later, his group found **[D-Leu^7]-(−)-ternatin** as a useful derivative of (−)-ternatin during a structure-activity relationship study. Actually, this peptide, a deletion analog of β-OH group from the 7th amino acid, β-OH-D-Leu, maintains not only fat accumulation inhibitory activity with only an 8-fold-lower potency, but also the structural integrity of the parent molecule[4,5]. This specific analog, **[D-Leu^7]-(−)-ternatin**, may be an alternative to (−)-ternatin in the study to combat metabolic diseases in the modern world. **[D-Leu^7]-(−)-Ternatin** is now available from Peptide Institute, Inc. under an agreement with Professor Uemura.

1) K. Shimokawa, I. Mashima, A. Asai, K. Yamada, M. Kita, and D. Uemura, *Tetrahedron Lett.*, **47**, 4445 (2006). (*(−)-Ternatin; Structure Determination / Biological Activity in vitro*)
2) K. Shimokawa, K. Yamada, M. Kita, and D. Uemura, *Bioorg. Med. Chem. Lett.*, **17**, 4447 (2007). (*(−)-Ternatin; Biological Activity in vivo*)
3) M. Ito, J. Ito, H. Kitazawa, K. Shimamura, T. Fukami, S. Tokita, K. Shimokawa, K. Yamada, A. Kanatani, and D. Uemura, *Peptides*, **30**, 1074 (2009). (*(−)-Ternatin; Mechanism of Inhibitory Activity*)
4) K. Shimokawa, Y. Iwase, K. Yamada, and D. Uemura, *Org. Biomol. Chem.*, **6**, 58 (2008). (*D-Leu^7-(−)-Ternatin; Biological Activity in vivo*)
5) K. Shimokawa, R. Miwa, K. Yamada, and D. Uemura, *Org. Biomol. Chem.*, **7**, 777 (2009). (*D-Leu^7-(−)-Ternatin; Conformation-Biological Activity Relationship*)

- This compound is distributed through Peptide Institute, Inc. under the license of Nagoya University.

Hepcidin

Code	Compound			Price:Yen
4467-v New -20℃	**Hepcidin (Rat)** Asp-Thr-Asn-Phe-Pro-Ile-Cys-Leu-Phe-Cys- Cys-Lys-Cys-Cys-Lys-Asn-Ser-Ser-Cys-Gly- Leu-Cys-Cys-Ile-Thr (Disulfide bonds undetermined) (M.W. 2712.2) $C_{111}H_{171}N_{29}O_{34}S_8$ *Iron-Regulatory Hormone*	Vial	50 µg	28,000

1) C. Pigeon, G. Ilyin, B. Courselaud, P. Leroyer, B. Turlin, P. Brissot, and O. Loréal, *J. Biol. Chem.*, **276**, 7811 (2001). (*Primary Structure: GenBank Accession No. AF344185*)

Peptide Tools

3405-v New -20℃	**[$^{13}C_{18}$,$^{15}N_3$]-Hepcidin (Human)** **[[$^{13}C_9$,^{15}N]Phe^{4,9}, [^{15}N]Gly^{12}]-Hepcidin (Human)** (Trifluoroacetate Form) Asp-Thr-His-[$^{13}C_9$,^{15}N]Phe-Pro-Ile-Cys-Ile-[$^{13}C_9$,^{15}N]Phe-Cys- Cys-[^{15}N]Gly-Cys-Cys-His-Arg-Ser-Lys-Cys-Gly- Met-Cys-Cys-Lys-Thr (Reported disulfide bonds between Cys^7-Cys^{23}, Cys^{10}-Cys^{13}, Cys^{11}-Cys^{19}, and Cys^{14}-Cys^{22}) (M.W. 2810.2) $C_{95}{}^{13}C_{18}H_{170}N_{31}{}^{15}N_3O_{31}S_9$ *Stable Isotope-Labeled Peptide for Mass Spectrometric Detection of Hepcidin (Human)*	Vial	20 µg	20,000

1) N. Murao, M. Ishigai, H. Yasuno, Y. Shimonaka, and Y. Aso, *Rapid Commun. Mass Spectrom.*, **21**, 4033 (2007).
2) T. Hosoki, K. Ikuta, Y. Shimonaka, Y. Sasaki, H. Yasuno, K. Sato, T. Ohtake, K. Sasaki, Y. Torimoto, K. Saito, and Y. Kohgo, *Proteomics Clin. Appl.*, **3**, 1256 (2009).

本製品に関連して、ペプチドの定量方法に関する特許出願（日本再公表2008/093762）が存在します。
ご興味のある方は中外製薬株式会社知的財産部（電話番号：0467-47-2362）までご連絡ください。

3404-v New -20℃	**4-[D10]Leu-Insulin (Human)** **[[$^2H_{10}$]Leu^{B6,B11,B15,B17}]-Insulin (Human)** (Trifluoroacetate Form) A-chain: Gly-Ile-Val-Glu-Gln-Cys-Cys-Thr-Ser-Ile- Cys-Ser-Leu-Tyr-Gln-Leu-Glu-Asn-Tyr-Cys- Asn B-chain: Phe-Val-Asn-Gln-His-[$^2H_{10}$]Leu-Cys-Gly-Ser-His- [$^2H_{10}$]Leu-Val-Glu-Ala-[$^2H_{10}$]Leu-Tyr-[$^2H_{10}$]Leu-Val-Cys-Gly- Glu-Arg-Gly-Phe-Phe-Tyr-Thr-Pro-Lys-Thr (Disulfide bonds between Cys^{A6}-Cys^{A11}, Cys^{A7}-Cys^{B7}, and Cys^{A20}-Cys^{B19}) (M.W. 5847.8) $C_{257}H_{343}D_{40}N_{65}O_{77}S_6$ *Stable Isotope-Labeled Peptide Useful for Standardization of Insulin Immunoassays*	Vial	20 µg	20,000

1) K. Van Uytfanghe, D. Rodríguez-Cabaleiro, D. Stöckl, and L.M. Thienpont, *Rapid Commun. Mass Spectrom.*, **21**, 819 (2007).
2) D. Rodríguez-Cabaleiro, K. Van Uytfanghe, V. Stove, T. Fiers, and L.M. Thienpont, *Clin. Chem.*, **53**, 1462 (2007).
3) W.G. Miller, L.M. Thienpont, K. Van Uytfanghe, P.M. Clark, P. Lindstedt, G. Nilsson, and M.W. Steffes, *Clin. Chem.*, **55**, 1011 (2009).

Code	Compound			Price:Yen
3403-v	**Myr-Ser-Ile-Tyr-Arg-Arg-Gly-Ala-Arg-Arg-Trp-Arg-Lys-Leu**	Vial	0.5 mg	10,000

New

-20℃

Myristoyl-PKCζ (113-125) / ζ-Pseudosubstrate Inhibitory Peptide (ZIP)

(Trifluoroacetate Form)

Myristoyl-Ser-Ile-Tyr-Arg-Arg-Gly-Ala-Arg-Arg-Trp-Arg-Lys-Leu

(M.W. 1928.4) $C_{90}H_{154}N_{30}O_{17}$

Myristoylated Cell Permeable PKC ζ Pseudosubstrate Inhibitor

1) C. Laudanna, D. Mochly-Rosen, T. Liron, G. Constantin, and E.C. Butcher, *J. Biol. Chem.*, **273**, 30306 (1998). (*Pharmacol.*)
2) S. Lim, J.W. Choi, H.S. Kim, Y.-H. Kim, K. Yea, K. Heo, J.H. Kim, S.-H. Kim, M. Song, J.I. Kim, S.H. Ryu, and P.-G. Suh, *Life Sci.*, **82**, 733 (2008). (*Biochem.*)
3) T. Hirose, D. Satoh, H. Kurihara, C. Kusaka, H. Hirose, K. Akimoto, T. Matsusaka, I. Ichikawa, T. Noda, and S. Ohno, *PLoS ONE*, **4**, e4194 (2009). (*Pharmacol. & Histochem.*)
4) P.V. Migues, O. Hardt, D.C. Wu, K. Gamache, T.C. Sacktor, Y.T. Wang, and K. Nader, *Nat. Neurosci.*, **13**, 630 (2010). (*Pharmacol.*)

Carbohydrate

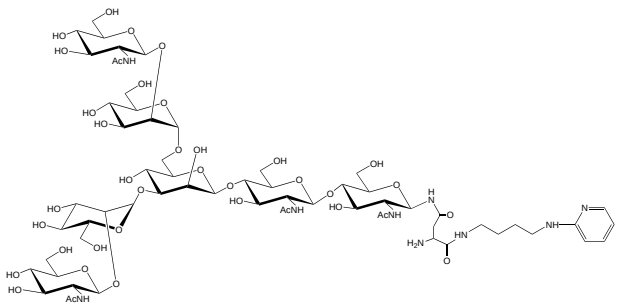
23004-s	**GnGn-bi-Asn-PABA**	Vial	0.1 mg	28,000

New

-20℃

Semisynthetic Product with Enzymatically Derived Bovine γ-Globulin Sugar Moiety

O-β-2-Acetamido-2-deoxy-D-glucopyranosyl-(1→2)-*O*-α-D-mannopyranosyl-(1→3)-[*O*-β-2-acetamido-2-deoxy-D-glucopyranosyl-(1→2)-*O*-α-D-mannopyranosyl-(1→6)]-*O*-β-D-mannopyranosyl-(1→4)-*O*-β-2-acetamido-2-deoxy-D-glucopyranosyl-(1→4)-*N*-β-2-acetamido-2-deoxy-D-glucopyranosyl-(1→4)-L-asparagine 4-(2-pyridylamino) butylamide



(M.W. 1578.5) $C_{63}H_{103}N_9O_{37}$

Semisynthetic Product

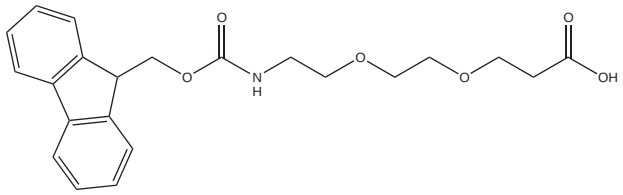
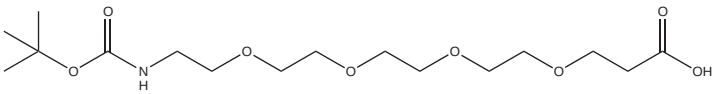
Substrate for GDP-L-Fuc: N-Acetyl-β-D-Glucosaminide α1-6Fucosyltransferase

1) N. Uozumi, T. Teshima, T. Yamamoto, A. Nishikawa, Y.-E Gao, E. Miyoshi, C.-X. Gao, K. Noda, K.N. Islam, Y. Ihara, S. Fujii, T. Shiba, and N. Taniguchi, *J. Biochem.*, **120**, 385 (1996). (*Original; Semisynthesis & Assay Method*)
2) K. Noda, E. Miyoshi, J. Gu, C.-X. Gao, S. Nakahara, T. Kitada, K. Honke, K. Suzuki, H. Yoshihara, K. Yoshikawa, K. Kawano, M. Tonetti, A. Kasahara, M. Hori, N. Hayashi, and N. Taniguchi, *Cancer Res.*, **63**, 6282 (2003). (*GDP-L-fucose Levels in Human Hepatocellular Carcinoma*)
3) Y. Shimma, F. Saito, F. Oosawa, and Y. Jigami, *Appl. Environ. Microbiol.* **72**, 7003 (2006). (*Construction of a Library of Human Glycosyltransferases*)
4) K. Matsumoto, H. Yokote, T. Arao, M. Maegawa, K. Tanaka, Y. Fujita C. Shimizu, T. Hanafusa, Y. Fujiwara, and K. Nishio, *Cancer Sci.* **99**, 1611 (2008). (*Effect of Fucosylation on Epidermal Growth Factor Receptor Activity*)

Enzyme Substrates

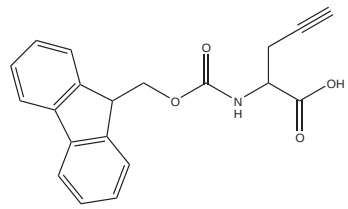
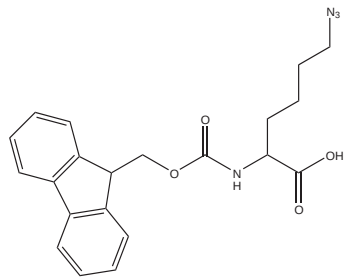
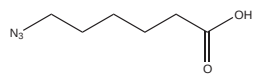
Code	Compound			Price:Yen
3230-v New -20℃	**Abz-Ala-Pro-Glu-Glu-Ile-Met-Arg-Arg-Gln-EDDnp** **[Abz-APEEIMRRQ-EDDnp]** (Trifluoroacetate Form) 2-Aminobenzoyl-L-alanyl-L-prolyl-L-glutamyl-L-glutamyl-L-isoleucyl-L-methionyl-L-arginyl-L-arginyl-L-glutamine 2-(2,4-dinitrophenyl)aminoethyl-amide (M.W. 1456.59) $C_{61}H_{93}N_{21}O_{19}S$ *Fluorescence-Quenching Substrate for Human Neutrophil Elastase* 1) B. Korkmaz, S. Attucci, T. Moreau, E. Godat, L. Juliano, and F. Gauthier, *Am. J. Respir. Cell Mol. Biol.*, **30**, 801 (2004). 2) B. Korkmaz, S. Attucci, M.A. Juliano, T. Kalupov, M.-L. Jourdan, L. Juliano, and F. Gauthier, *Nat. Protoc.*, **3**, 991 (2008).	Vial	1 mg	10,000
3231-v New -20℃	**Abz-Glu-Pro-Phe-Trp-Glu-Asp-Gln-EDDnp** **[Abz-EPFWEDQ-EDDnp]** (Ammonium Form) 2-Aminobenzoyl-L-glutamyl-L-prolyl-L-phenylalanyl-L-tryptophyl-L-glutamyl-L-aspartyl-L-glutamine 2-(2,4-dinitrophenyl)aminoethyl-amide (M.W. 1277.25) $C_{59}H_{68}N_{14}O_{19}$ *Fluorescence-Quenching Substrate for Human Neutrophil Cathepsin G* 1) S. Attucci, B. Korkmaz, L. Juliano, E. Hazouard, C. Girardin, M. Brillard-Bourdet, S. Réhault, P. Anthonioz, and F. Gauthier, *Biochem. J.*, **366**, 965 (2002). 2) B. Korkmaz, S. Attucci, M.A. Juliano, T. Kalupov, M.-L. Jourdan, L. Juliano, and F. Gauthier, *Nat. Protoc.*, **3**, 991 (2008).	Vial	1 mg	10,000
3232-v New -20℃	**Abz-Val-Ala-Asp-Nva-Arg-Asp-Arg-Gln-EDDnp** **[Abz-VADnVRDRQ-EDDnp], nV = Nva** (Trifluoroacetate Form) 2-Aminobenzoyl-L-valyl-L-alanyl-L-aspartyl-L-norvalyl-L-arginyl-L-aspartyl-L-arginyl-L-glutamine 2-(2,4-dinitrophenyl)aminoethyl-amide (M.W. 1285.3) $C_{53}H_{80}N_{20}O_{18}$ *Fluorescence-Quenching Substrate for Human Neutrophil Proteinase 3* 1) B. Korkmaz, E. Hajjar, T. Kalupov, N. Reuter, M. Brillard-Bourdet, T. Moreau, L. Juliano, and F. Gauthier, *J. Biol. Chem.*, **282**, 1989 (2007). 2) B. Korkmaz, S. Attucci, M.A. Juliano, T. Kalupov, M.-L. Jourdan, L. Juliano, and F. Gauthier, *Nat. Protoc.*, **3**, 991 (2008).	Vial	1 mg	10,000

****** Amino Acid Derivatives (dPEG®) ******

Code	Compound		Price:Yen
DPG-5748-PI New 2～10℃	***N*-Fmoc-Amido-dPEG®2 Acid** 10.9 Å and 10 Atoms Spacer (M.W. 399.44)  *N–Fmoc Protected Hydrophilic, Non–Immunogenic Spacer*	1 g 5 g	35,000 140,000
DPG-5749-PI New 2～10℃	***N*-Fmoc-Amido-dPEG®4 Acid** 18.1 Å and 16 Atoms Spacer (M.W. 487.54) *N–Fmoc Protected Hydrophilic, Non–Immunogenic Spacer*	100 mg 1 g	20,000 55,000
DPG-5750-PI New 2～10℃	***N*-Fmoc-Amido-dPEG®6 Acid** 25.1 Å and 22 Atoms Spacer (M.W. 575.65) *N–Fmoc Protected Hydrophilic, Non–Immunogenic Spacer*	100 mg 1 g	25,000 80,000
DPG-5751-PI New 2～10℃	***N*-Fmoc-Amido-dPEG®8 Acid** 32.2 Å and 28 Atoms Spacer (M.W. 663.75) *N–Fmoc Protected Hydrophilic, Non–Immunogenic Spacer*	100 mg 1 g	30,000 120,000
DPG-5752-PI New 2～10℃	***N*-Fmoc-Amido-dPEG®12 Acid** 46.5 Å and 40 Atoms Spacer (M.W. 839.96) *N–Fmoc Protected Hydrophilic, Non–Immunogenic Spacer*	100 mg 1 g	30,000 140,000
DPG-5753-PI New 2～10℃	***N*-Fmoc-Amido-dPEG®24 Acid** 89 Å and 76 Atoms Spacer (M.W. 1368.59) *N–Fmoc Protected Hydrophilic, Non–Immunogenic Spacer*	100 mg 1 g	50,000 250,000
DPG-5759-PI New 2～10℃	***N*-Boc-Amido-dPEG®4 Acid** 19.2 Å and 16 Atoms Spacer (M.W. 365.42)  *N–Boc Protected Hydrophilic, Non–Immunogenic Spacer*	100 mg 1 g	20,000 55,000

dPEG is a proprietary product of Quanta BioDesign, Ltd.

****** Reagents for Click Chemistry ******

Code	Compound		Price:Yen
PRA-5010-PI New 2～10℃	**Fmoc-Pra-OH** 9-Fluorenylmethoxycarbonyl-Propargyl-L-Glycine (S)-2-(Fmoc-amino)-4-Pentynoic acid (M.W. 335.36) $C_{20}H_{17}NO_4$  *Alkyne Building Block for Click Chemistry* 1) M. Meldal, M.A. Juliano, and A.M. Jansson, *Tetrahedron Lett.*, **38**, 2531 (1997). 2) S. Punna, J. Kuzelka, Q. Wang, and M.G. Finn, *Angew. Chem. Int. Ed.*, **44**, 2215 (2005).	1 g	35,000
FAK-1903-PI New 2～10℃	**Fmoc-Azido-Lys-OH** **Fmoc-Lys(N_3)-OH** N^{α}-9-Fluorenylmethoxycarbonyl-ε-Azido-L-Lysine (M.W.394.43) $C_{21}H_{22}N_4O_4$ [159610-89-6]  *Azido Building Block for Click Chemistry* 1) A. Le Chevalier Isaad, A.M. Papini, M. Chorev, and P. Roveroa, *J. Pept. Sci.*, **15**, 451 (2009). 2) P.E. Schneggenburger, B. Worbs, and U. Diederichsen, *J. Pept. Sci.*, **16**, 10 (2010).	1 g	94,000
AHA-1904-PI New 2～10℃	**6-Azido-Hexanoic Acid** **ε–Azidocaproic Acid** (M.W. 157.17) $C_6H_{11}N_3O_2$ [79598-53-1]  *Azido Building Block for Click Chemistry* 1) P. Wu, A.K. Feldman, A.K. Nugent, C.J. Hawker, A. Scheel, B. Voit, J. Pyun, J.M.J. Fréchet, K.B. Sharpless, and V.V. Fokin, *Angew. Chem. Int. Ed.*, **43**, 3928 (2004). 2) C. Grandjean, A. Boutonnier, C. Guerreiro, J.-M. Fournier, and L.A. Mulard, *J. Org. Chem.*, **70**, 7123 (2005). 3) A. Watzke, M. Gutierrez–Rodriguez, M. Köhn, R. Wacker, H. Schroeder, R. Breinbauer, J. Kuhlmann, K. Alexandrov, C.M. Niemeyer, R.S. Goody, H. Waldmann, *Bioorg. Med. Chem.*, **14**, 6288 (2006).	1 g	36,000
APA-1906-PI New 2～10℃	**5-Azido-Pentanoic Acid** **δ-Azidovaleric Acid** (M.W. 143.15) $C_5H_9N_3O_2$ [79583-98-5] *Azido Building Block for Click Chemistry* 1) M. Meldal, M.A. Juliano, and A.M. Jansson, *Tetrahedron Lett.*, **38**, 2531 (1997). 2) S. Punna, J. Kuzelka, Q. Wang, and M.G. Finn, *Angew. Chem. Int. Ed.*, **44**, 2215 (2005).	1 g	36,000
AXX-1905-PI 2～10℃	**8-Azido-3,6-Dioxaoctanoic Acid CHA Salt** **Azido-mini-PEG™ cyclohexylamine** (M.W. 189.17 • 99.18) $C_6H_{11}N_3O_4$ • $C_6H_{13}N$ *Azido Building Block for Click Chemistry*	1 g	65,000

ペプチド・糖のカスタム合成

❶	ご希望のペプチド(Cys 含有ペプチドも含む) 2-60 残基(60 残基を越える場合も可能です。ご相談下さい)
❷	生理活性ペプチドとその誘導体
❸	細胞膜透過性ペプチド
❹	各種酵素基質(MCA，*p*NA, その他の蛍光，発色基質など)
❺	消光性蛍光基質(Nma-Dnp，MOCAc-Dnp，Dabcyl-EDANS の組合せなど)
❻	酵素阻害剤(アルデヒド，フルオロメチルケトン，クロロメチルケトン誘導体など)
❼	ジスルフィド結合含有ペプチド(複数架橋を有する場合もご相談下さい)
❽	環状ペプチドおよび枝分かれペプチド
❾	鎖状および環状デプシペプチド
❿	リン酸化ペプチド [Ser(PO_3H_2)，Thr(PO_3H_2)，Tyr(PO_3H_2)誘導体]
⓫	ホスホノペプチド [リン酸化ペプチドのカルバ型誘導体] [Ser(PO_3H_2)，Thr(PO_3H_2)，Tyr(PO_3H_2)に対応するホスファターゼ抵抗性誘導体]
⓬	硫酸化ペプチド [Tyr(SO_3H)]
⓭	アミノ基修飾誘導体 (Acetyl 化，Succinyl 化，Biotinyl 化，Boc 化，Z 化，Dnp 化，Dns 化，Myristoyl 化など種々の修飾)
⓮	チオール基修飾誘導体（Farnesyl 化，Geranyl 化，Biotinyl 化など）
⓯	蛍光標識ペプチド(FITC 化、Dns 化、Nma 化など)
⓰	糖ペプチド [Asn(GlcNAc)，Ser/Thr(GalNAc)，Ser/Thr(Gal-GalNAc)，Ser/Thr(GlcNAc)， Ser(Xyl)，Thr(Man)含有ペプチドなど]
⓱	非天然アミノ酸含有ペプチド
⓲	ペプチド結合の修飾(還元型、スタチン型など)
⓳	アミノ酸誘導体 , 保護ペプチド
⓴	安定同位体ラベルアミノ酸含有ペプチド(^{13}C，^{15}N，^{2}H など)
㉑	ペプチドアルコール
㉒	糖関連化合物
㉓	一般有機化合物
㉔	その他

受託合成量：25mg（固相法標準量）～ g、kg オーダーまで承ります。（お見積り依頼の際に、ご相談下さい）

納　　期：固相法にて合成可能な通常のペプチド 25mg の場合：通常 2-4 週間
液相法などその他の方法で合成する場合はご相談させていただきます。

保 証 純 度：通常、トリフルオロ酢酸塩でご提供いたします。
規格　（1）逆相 HPLC で検定：80-95%（精製品）
（2）逆相 HPLC で検定：95% 以上（精製品）
（3）逆相 HPLC で検定：99% 以上（精製品）
通常、HPLC チャート、アミノ酸分析結果、質量分析結果を添付いたします。
その他の分析項目につきましてはご相談させていただきます。

価　　格：個別にお見積りいたしますので、FAX 用ペプチド合成依頼書、あるいは E-mail にてご相談下さい。

医薬品開発研究用カスタム合成

弊社は、医薬品製造業許可を取得しており、医薬品原薬および原薬中間体の製造が可能です。
GMP 対応、治験薬 GMP 対応など個別にご相談させていただきます。

ペプチド合成依頼書

（□見積依頼書　□発注）

年　　月　　日

ご依頼者

ご 住 所：〒□□□-□□□□

勤 務 先：　　ご所属：

フ リ ガ ナ

お 名 前：

T E L：　　-　　-　　（内線）

F A X：　　-　　-

E-mail：

アミノ酸配列

（アミノ酸配列は1文字表記、3文字表記どちらでも結構です）

N末端　　C末端→

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

ペプチド量：　□ 25 mg(標準量)　□ 50 mg　□　　mg　□　　g　□　　kg

純　度（逆相HPLC）：□ 80%～95%(精製品)　□ 95%以上保証(精製品)

ご用途：　□ 抗原(抗体作製)用　□ その他（　　）

コンジュゲーション・抗体作製　お差し仕えなければご記入下さい。

コンジュゲーション：□ 希望する　□ 希望しない

希望結合部位：　□ N端　□ C端　□ その他(　　)

キャリアー蛋白質の種類：□ BSA　□ KLH　□ OVA　□ その他(　　)

抗体作製(ウサギ)：　□ 希望する（　　羽）　□ 希望しない

抗体アフィニティー精製：□ 希望する　□ 希望しない

担体への結合：　□ ペプチド　□ その他(　　)

抗体の標識：　□ ビオチン標識　□ パーオキシダーゼ標識（過ヨウ素酸法）

備考（ご要望事項など）

お願い：お見積り依頼・ご発注は、アミノ酸配列確認のため、FAXやE-mailなどの文書でお願いいたします。

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