ChemFiles

Vol. 4 No. 5

Unnatural Amino Acids:

Tools for Drug Discovery

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Fluka

Introduction

Unnatural amino acids are utilized as building blocks, conformational constraints, molecular scaffolds, and pharmacologically active products. They represent a nearly infinite array of diverse structural elements for the development of new therapeutic drugs. Small-molecule combinatorial libraries containing unnatural amino acid residues already show remarkable impact on drug discovery processes. Novel short-chain peptide ligand mimetics with both enhanced biological activity and proteolytic resistance are drug candidates in today's R&D pipelines of pharmaceutical companies. Optimized and fine-tuned analogues of peptidic substrates, inhibitors, or effectors are also excellent analytical tools for investigating signal transduction pathways or gene regulation.

Sigma-Aldrich is a leading supplier of products for Peptide and Peptidomimetic Synthesis. Due to the increasing relevance of the design of peptidomimetics and peptide analogues in the pharmaceutical industry, we are pleased to offer a unique and broad range of more than 700 unnatural amino acids.

What is New?

Sigma–Aldrich is pleased to introduce 120 new additions to the portfolio of unnatural amino acids in this *ChemFile*. New structural classes, offering simultaneous main-chain and side-chain modifications such as ring-substituted β-phenylalanines and β-homophenylalanines, are highlighted.

Content of this ChemFile

Sigma-Aldrich is committed to being your preferred supplier of building blocks and tools for Drug Discovery. Our wide range of high-quality products, superior distribution facilities, user friendly ordering systems, and vast chemical knowledge make us the ideal source for all of your research and development needs in this area. A strong example of our commitment is the introduction of hundreds of new products every year. Please take a look at sigma-aldrich.com/flukanew for a regular update on the latest Sigma-Aldrich products. If you cannot find a building block or any other product you are looking for, we welcome your input and will use it to broaden our product range even further. Please contact us at hkohlbau@europe.sial.com with new suggestions!

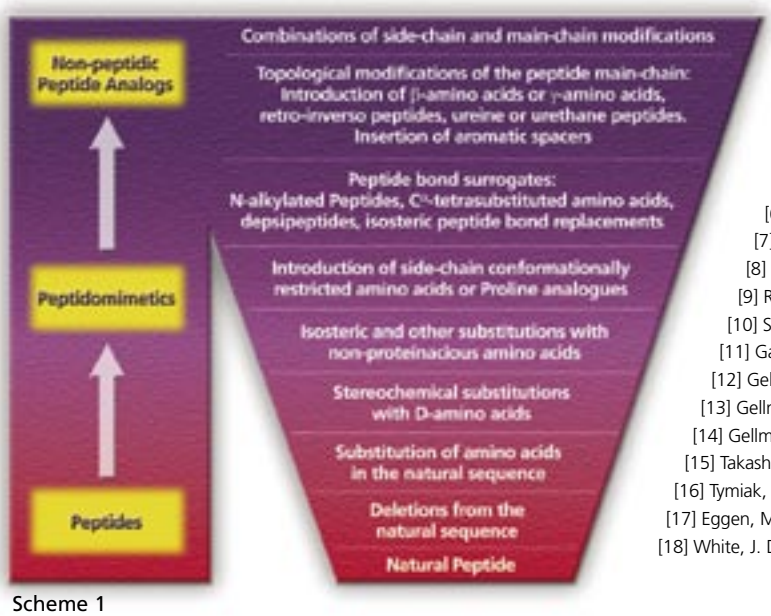
Synthesis of Peptidomimetics

The discovery of a multitude of naturally occurring bioactive peptides has revealed a wealth of pharmacophores, which are used by medicinal chemists in their effort to develop new therapeutic drugs. After binding to an enzyme or a membrane receptor, peptide-based inhibitors, neurotransmitters, immunomodulators, and hormones influence cell-to-cell communication and control a variety of vital functions such as metabolism, immune-defense, digestion, respiration, sensitivity to pain, reproduction, and behaviour. Although naturally occurring peptides based on proteinacious, coded amino acids find wide applications as drugs,[1] major drawbacks such as rapid metabolism by proteolysis and interactions at multiple receptors limit their use as therapeutic agents. As a result, peptidomimetics have found increasing recognition as advantageous surrogates offering improved in-vivo stability, enhanced potency, better oral adsorption, improved tissue distribution, increased selectivity of biological response, and finally a more simple synthesis compared with the natural peptide.[2,3] They form the basis of important families of enzyme inhibitors and they act as receptor agonists and antagonists. The transition from pure short chain peptide to non-peptide analogues is rather seamless in many launched and developmental drugs (**Scheme 1**).

The design of peptidomimetic drugs requires the utilization and combination of computer-assisted molecular modeling, modern spectroscopic and NMR-techniques, and X-ray diffraction analysis. It is evident that the development of new, promising peptidomimetics is based primarily on the knowledge of the complementary conformation as well as the topochemical and electronic properties of both the native bioactive peptide and the target. Several structural factors have to be taken into particular account:

- The favorable fit (tertiary structure) with respect to the corresponding complementary spatial situation at the active site (target)
- Functional groups, polar and hydrophobic regions, in well-defined positions enabling the required interactions (e.g., hydrogen bonding, electrostatic or hydrophobic interactions)
- The conformational flexibility of most peptides and the relationship between the conformation in solution and the receptor-bound conformation

The incorporation of β-amino acids into peptides as main-chain modification has become an area of increasing interest[4] and the synthesis of pure β-peptides, e.g., an β^3-eicosapeptide containing homologues of the 20 proteinacious amino acids,[5] has recently been published. β-Peptides turned out to be stable to common peptidases for at least two days.[6] Recently, a cyclic β-tetrapeptide was synthesized with biological activity similar to somatostatine, an important endogenous neurotransmitter and inhibitor of hormone secretion.[7] Systematic replacement of an α-amino acid by a β-amino acid residue resulted in a hybrid oligopeptide, which binds to major histocompatibility complex (MHC) proteins, while showing enhanced stability towards proteolysis.[8,9] Another important aspect of β-peptide oligomers is their ability to fold into well-defined and stable helical-, turn- and pleated sheet-conformations in solution.[10–13] A β-peptide forming a two-stranded β-pleated sheet connected by a hairpin turn was created and analysed by NMR in solution by Seebach and co-workers. This sheet-and-turn structure complements the similar structure described by Gelmann et al.[14] by revealing the opposite orientation of the net dipole. Further remarkable applications of β-amino acids are their use as protease inhibitors,[15] precursors for antibiotics,[16] and building blocks in cryptophycins.[17,18]



Scheme 1

References:

[1] Loffet, A. *J. Pep. Sci.* **2002**, *8*, 1.
[2] Kazmierski, W. M. *Methods in Molecular Medicine: Peptidomimetic protocols*; Humana: Totowa, NJ, 1999.
[3] Abel, A. *Advances in Amino Acid Mimetics and Peptidomimetics*. JAI: Stamford, 1999; Vol. 2.
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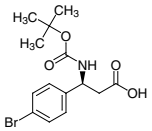
[5] Kimmerlin, T.; Seebach, D. *Helv. Chim. Acta* **2003**, *86*, 2098.
[6] Seebach, D.; Matthews, J. L. *Chem Comm.* **1997**, 2015.
[7] Seebach, D.; et al. *Angew. Chem. Int Ed.* **1999**, *38*, 1223.
[8] Rognan, D.; et. al. *J. Med. Chem.* **1999**, *42*, 2318.
[9] Rognan, D.; et. al. *J. Biol. Chem.* **2001**, *27*, 24525.
[10] Seebach, D.; et al. *Angew. Chem. Int Ed.* **1999**, *38*, 1595.
[11] Gademann, K; et al. *Helv. Chim. Acta* **1999**, *82*, 1.
[12] Gellman, S. H.; et al. *J. Am. Chem. Soc.* **1999**, *121*, 6206.
[13] Gellman, S. H.; et al. *J. Am. Chem. Soc.* **1999**, *121*, 7574.
[14] Gellman, S. H.; et al. *J. Am. Chem. Soc.* **1998**, *120*, 10555.
[15] Takashiro et al. *Bioorg. & Med. Chem.* **1999**, *7*, 2063.
[16] Tymiak, A. A.; et al. *J. Org. Chem.* **1989**, *54*, 1149.
[17] Eggen, M.; et al. *Org. Lett.* **2001**, *12*, 1813.
[18] White, J. D. *J. Org. Chem.* **1999**, *64*, 6206.

1. β-Amino Acids

1.1 3-Amino-3-Aryl-Propionic Acid Derivatives—Ring-Substituted β-Phenylalanines

(S)-Boc-4-bromo-β-Phe-OH, ≥98.0% HPLC

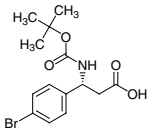
(S)-3-(Boc-amino)-3-(4-bromophenyl)propionic acid,
Boc-4-bromo-D-β-Phe-OH
93123 NEW
$C_{14}H_{18}BrNO_4$
[261165-06-4]
Mw 344.20



500 mg

(R)-Boc-4-bromo-β-Phe-OH, ≥98.0% HPLC

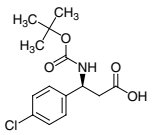
(R)-3-(Boc-amino)-3-(4-bromophenyl)propionic acid,
Boc-4-bromo-L-β-Phe-OH
74037 NEW
$C_{14}H_{18}BrNO_4$
Mw 344.20
[261380-20-5]



500 mg

(S)-Boc-4-chlor-β-Phe-OH, ≥98.0% HPLC

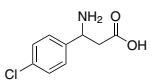
(S)-3-(Boc-amino)-3-(4-chlorophenyl)propionic acid,
Boc-4-chloro-D-β-Phe-OH
19343 NEW
$C_{14}H_{18}ClNO_4$
Mw 299.75
[479064-90-9]



500 mg

3-Amino-3-(4-chlorophenyl)propionic acid, 97.0%

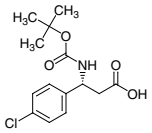
H-2-chloro-DL-β-Phe-OH
57,335-3 NEW
$C_9H_{10}ClNO_2$
Mw 199.63
[19947-39-8]



1 g
5 g

(R)-Boc-4-chloro-β-Phe-OH, ≥98.0% HPLC

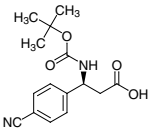
(R)-3-(Boc-amino)-3-(4-chlorophenyl)propionic acid,
Boc-4-chloro-L-β-Phe-OH
61902 NEW
$C_{14}H_{18}ClNO_4$
Mw 299.75
[479064-93-2]



500 mg

(S)-Boc-4-cyano-β-Phe-OH, ≥98.0% HPLC

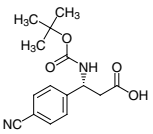
(S)-3-(Boc-amino)-3-(4-cyanophenyl)propionic acid,
Boc-4-cyano-D-β-Phe-OH
44376 NEW
$C_{15}H_{18}N_2O_4$
Mw 290.31
[500770-82-1]



500 mg

(R)-Boc-4-cyano-β-Phe-OH, ≥98.0% HPLC

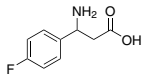
(R)-3-(Boc-amino)-3-(4-cyanophenyl)propionic acid,
Boc-4-cyano-L-β-Phe-OH
12339 NEW
$C_{15}H_{18}N_2O_4$
Mw 290.31
[501015-22-1]



500 mg

3-Amino-3-(4-fluorophenyl)propionic acid, 97.0%

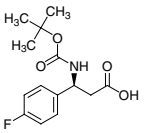
H-4-fluoro-DL-β-Phe-OH
57,341-8 NEW
$C_9H_{10}FNO_2$
Mw 183.18
[325-89-3]



1 g

(S)-Boc-4-fluoro-β-Phe-OH, ≥98.0% HPLC

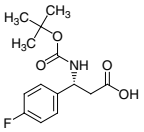
(S)-3-(Boc-amino)-3-(4-fluorophenyl)propionic acid,
Boc-4-fluoro-D-β- Phe-OH
05102 NEW
$C_{14}H_{18}FNO_4$
Mw 283.30
[479064-88-5]



500 mg

(R)-Boc-4-fluoro-β-Phe-OH, ≥98.0% HPLC

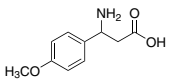
(R)-3-(Boc-amino)-3-(4-fluorophenyl)propionic acid,
Boc-4-fluoro-L-β-Phe-OH
51006 NEW
$C_{14}H_{18}FNO_4$
Mw 283.30
[479064-94-3]



500 mg

3-Amino-3-(4-methoxyphenyl)propionic acid, 97.0%

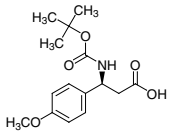
H-4-methoxy-DL-β-Phe-OH
57,338-8 NEW
$C_{10}H_{13}NO_3$
Mw 195.22
[5678-45-5]



1 g

(S)-Boc-4-methoxy-β-Phe-OH, ≥98.0% HPLC

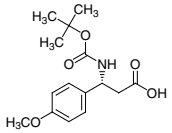
(S)-3-(Boc-amino)-3-(4-methoxyphenyl)propionic acid,
Boc-D-β-Tyr(Me)-OH
69456 NEW
$C_{15}H_{21}NO_5$
Mw 295.33
[159990-12-2]



500 mg

(R)-Boc-4-methoxy-β-Phe-OH, ≥98.0% HPLC

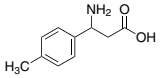
(R)-3-(Boc-amino)-3-(4-methoxyphenyl)propionic acid,
Boc-β-Tyr(Me)-OH
56999 NEW
$C_{15}H_{21}NO_5$
Mw 295.33
[500788-87-4]



500 mg

3-Amino-3-(4-methylphenyl)propionic acid, 97.0%

H-4-methyl-DL-β-Phe-OH
57,334-5 NEW
$C_{10}H_{13}NO_2$
Mw 179.22
[68208-18-4]

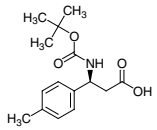


1 g
5 g

1.1 3-Amino-3-Aryl-Propionic Acid Derivatives—Ring-Substituted β-Phenylalanines (continued)

(S)-Boc-4-methyl-β-Phe-OH, ≥98.0% HPLC

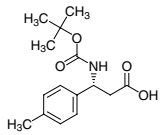
(S)-3-(Boc-amino)-3-(4-methylphenyl)propionic acid,
Boc-4-methyl-D-β-Phe-OH
90298 NEW
$C_{15}H_{21}NO_4$
Mw 279.33
[479064-96-5]



500 mg

(R)-Boc-4-methyl-β-Phe-OH, ≥98.0% HPLC

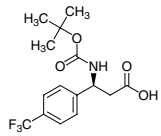
(R)-3-(Boc-amino)-3-(4-methylphenyl)propionic acid,
Boc-4-methyl-L-β-Phe-OH
90297 NEW
$C_{15}H_{21}NO_4$
Mw 279.33
[479064-97-6]



500 mg

(S)-Boc-4-(trifluoromethyl)-β-Phe-OH, ≥98.0% HPLC

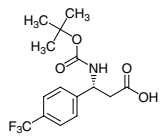
(S)-3-(Boc-amino)-3-[4-(trifluoromethyl)phenyl]propionic acid,
Boc-4-(trifluoromethyl)-D-β-Phe-OH
18709 NEW
$C_{15}H_{18}F_3NO_4$
Mw 333.30
[500770-79-6]



500 mg

(R)-Boc-4-(trifluoromethyl)-β-Phe-OH, ≥98.0% HPLC

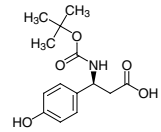
(R)-3-(Boc-amino)-3-[4-(trifluoromethyl)phenyl]propionic acid,
Boc-4-(trifluoromethyl)-L-β-Phe-OH
73999 NEW
$C_{15}H_{18}F_3NO_4$
Mw 333.30
[501015-19-6]



500 mg

(S)-Boc-β-Tyr-OH, ≥98.0% HPLC

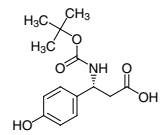
(S)-3-(Boc-amino)-3-(4-hydroxyphenyl)propionic acid,
Boc-D-β-tyrosine
56996 NEW
$C_{14}H_{19}NO_5$
Mw 281.30
[499995-80-1]



500 mg

(R)-Boc-β-Tyr-OH, ≥97.0% HPLC

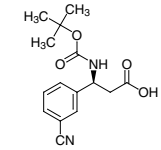
(R)-3-(Boc-amino)-3-(4-hydroxyphenyl)propionic acid,
Boc-L-β-tyrosine
89090 NEW
$C_{14}H_{19}NO_5$
Mw 281.30
[329013-12-9]



500 mg

(S)-Boc-3-cyano-β-Phe-OH, ≥98.0% HPLC

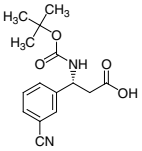
(S)-3-(Boc-amino)-3-(3-cyanophenyl)propionic acid,
Boc-3-cyano-D-β-Phe-OH
56998 NEW
$C_{15}H_{18}N_2O_4$
Mw 290.31
[500770-81-0]



500 mg

(R)-Boc-3-cyano-β-Phe-OH, ≥98.0% HPLC

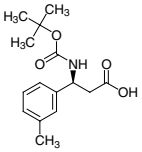
(R)-3-(Boc-amino)-3-(3-cyanophenyl)propionic acid,
Boc-3-cyano-L-β-Phe-OH
89178 NEW
$C_{15}H_{18}N_2O_4$
Mw 290.31
[501015-21-0]



500 mg

(S)-Boc-3-methyl-β-Phe-OH, ≥98.0% HPLC

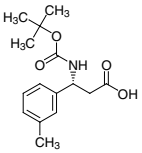
(S)-3-(Boc-amino)-3-(3-methylphenyl)propionic acid,
Boc-3-methyl-D-β-Phe-OH
59967 NEW
$C_{15}H_{21}NO_4$
Mw 279.33
[499995-75-4]



500 mg

(R)-Boc-3-methyl-β-Phe-OH, ≥98.0% HPLC

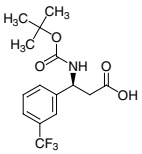
(R)-3-(Boc-amino)-3-(3-methylphenyl)propionic acid,
Boc-3-methyl-L-β-Phe-OH
42722 NEW
$C_{15}H_{21}NO_4$
Mw 279.33
[464930-76-5]



500 mg

(S)-Boc-3-(trifluoromethyl)-β-Phe-OH, ≥98.0% HPLC

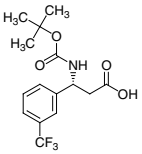
(S)-3-(Boc-amino)-3-[3-(trifluoromethyl)phenyl]propionic acid,
Boc-3-(trifluoromethyl)-D-β-Phe-OH
69418 NEW
$C_{15}H_{18}F_3NO_4$
Mw 333.30
[500770-78-5]



500 mg

(R)-Boc-3-(trifluoromethyl)-β-Phe-OH, ≥95.0% HPLC

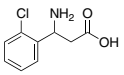
(R)-3-(Boc-amino)-3-[3-(trifluoromethyl)phenyl]propionic acid,
Boc-3-(trifluoromethyl)-L-β-Phe-OH
18328 NEW
$C_{15}H_{18}F_3NO_4$
Mw 333.30
[501015-18-5]



500 mg

3-Amino-3-(2-chlorophenyl)propionic acid, 97.0%

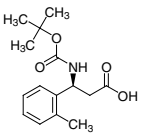
H-2-chloro-DL-β-Phe-OH
57,336-1 NEW
$C_9H_{10}ClNO_2$
Mw 199.63
[68208-20-8]



1 g
5 g

(S)-Boc-2-methyl-β-Phe-OH, ≥98.0% HPLC

(S)-3-(Boc-amino)-3-(2-methylphenyl)propionic acid,
Boc-2-methyl-D-β-Phe-OH
06939 NEW
$C_{15}H_{21}NO_4$
Mw 279.33
[499995-74-3]

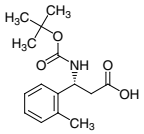


500 mg

1.1 3-Amino-3-Aryl-Propionic Acid Derivatives—Ring-Substituted β-Phenylalanines (continued)

(R)-Boc-2-methyl-β-Phe-OH, ≥98.0% HPLC

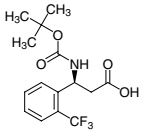
(R)-3-(Boc-amino)-3-(2-methylphenyl)propionic acid,
Boc-2-methyl-L-β-Phe-OH
06731 NEW
$C_{15}H_{21}NO_4$
Mw 279.33
[500770-86-5]



500 mg

(S)-Boc-2-(trifluoromethyl)-β-Phe-OH, ≥98.0% HPLC

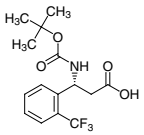
(S)-3-(Boc-amino)-3-[2-(trifluoromethyl)phenyl]propionic acid,
Boc-2-(trifluormethyl)-D-β-Phe-OH
55685 NEW
$C_{15}H_{18}F_3NO_4$
Mw 333.30
[500770-77-4]



500 mg

(R)-Boc-2-(trifluoromethyl)-β-Phe-OH, ≥98.0% HPLC

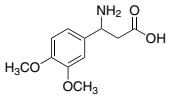
(R)-3-(Boc-amino)-3-[2-(trifluoromethyl)phenyl]propionic acid,
Boc-2-(trifluoromethyl)-L-β-Phe-OH
14670 NEW
$C_{15}H_{18}F_3NO_4$
Mw 333.30
[501015-17-4]



500 mg

3-Amino-3-(3,4-dimethoxyphenyl)propionic acid, 97.0%

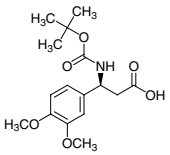
H-3,4-dimethoxy-DL-β-Phe-OH
57,342-6 NEW
$C_{11}H_{15}NO_4$
Mw 225.24
[34841-09-3]



1 g

(S)-Boc-3,4-dimethoxy-β-Phe-OH, ≥98.0% HPLC

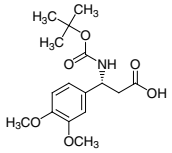
(S)-3-(Boc-amino)-3-(3,4-methoxyphenyl)propionic acid,
Boc-3,4-dimethoxy-D-β-Phe-OH
04542 NEW
$C_{16}H_{23}NO_6$
Mw 325.36
[499995-84-5]



500 mg

(R)-Boc-3,4-dimethoxy-β-Phe-OH, ≥98.0% HPLC

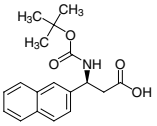
(R)-3-(Boc-amino)-3-(3,4-methoxyphenyl)propionic acid,
Boc-3,4-dimethoxy-L-β-Phe-OH
08009 NEW
$C_{16}H_{23}NO_6$
Mw 325.36
[500788-93-2]



500 mg

(S)-Boc-3-(2-naphthyl)-β-Ala-OH, ≥98.0% HPLC

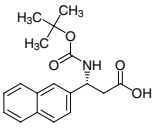
(S)-3-(Boc-amino)-3-(2-naphthyl)propionic acid,
D-Boc-3-(2-naphthyl)-D-β-Ala-OH
66947 NEW
$C_{18}H_{21}NO_4$
Mw 315.36
[500770-69-4]



500 mg

(R)-Boc-3-(2-naphthyl)-β-Ala-OH, ≥98.0% HPLC

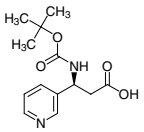
(R)-3-(Boc-amino)-3-(2-naphthyl)propionic acid,
Boc-3-(2-naphthyl)-L-β-Ala-OH
78664 NEW
$C_{18}H_{21}NO_4$
Mw 315.36
[500789-01-5]



500 mg

(S)-Boc-3-(3-pyridyl)-β-Ala-OH, ≥97.0% HPLC

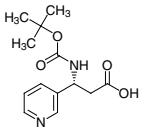
(S)-3-(Boc-amino)-3-(3-pyridyl)propionic acid,
Boc-3-(3-pyridyl)-D-β-Ala-OH
44025 NEW
$C_{13}H_{18}N_2O_4$
Mw 266.29
[297773-45-6]



500 mg

(R)-Boc-3-(3-pyridyl)-β-Ala-OH, ≥96.0% HPLC

(R)-3-(Boc-amino)-3-(3-pyridyl)propionic acid,
Boc-3-(3-pyridyl)-L-β-Ala-OH
72722 NEW
$C_{13}H_{18}N_2O_4$
Mw 266.29
[500788-96-5]

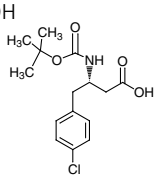


500 mg

1.2 3-Amino-4-Aryl-Butyric Acid Derivatives—Ring-Substituted β-Homophenylalanines

(S)-Boc-4-chloro-β-Homophe-OH, ≥98.0% HPLC

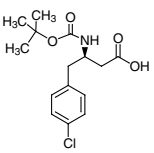
(S)-3-(Boc-amino)-4-(4-chlorophenyl)butyric acid,
Boc-4-chloro-L-β-Homophe-OH
81771 NEW
$C_{15}H_{20}ClNO_4$
Mw 313.78
[270596-42-4]



500 mg

(R)-Boc-4-chloro-β-Homophe-OH, ≥98.0% HPLC

(R)-3-(Boc-amino)-4-(4-chlorophenyl)butyric acid,
Boc-4-chloro-D-β-Homophe-OH
73086 NEW
$C_{15}H_{20}ClNO_4$
Mw 313.78
[218608-96-9]

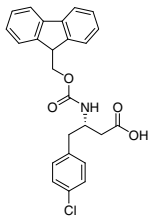


500 mg

1.2 3-Amino-4-Aryl-Butyric Acid Derivatives—Ring-Substituted β-Homophenylalanines (continued)

(S)-Fmoc-4-chloro-β-Homophe-OH, ≥98.0% HPLC

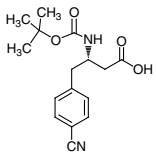
(S)-3-(Fmoc-amino)-4-(4-chlorophenyl)butyric acid
Fmoc-4-chloro-L-β-Homophe-OH
94492 NEW
$C_{25}H_{22}ClNO_4$
Mw 435.90



500 mg

(S)-Boc-4-cyano-β-Homophe-OH, ≥98.0% HPLC

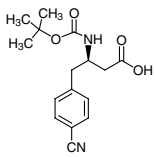
(S)-3-(Boc-amino)-4-(4-cyanophenyl)butyric acid,
Boc-4-cyano-L-β-Homophe-OH
81834 NEW
$C_{16}H_{20}N_2O_4$
Mw 304.34
[270065-89-9]



500 mg

(R)-Boc-4-cyano-β-Homophe-OH, ≥98.0% HPLC

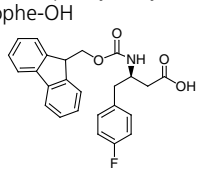
(R)-3-(Boc-amino)-4-(4-cyanophenyl)butyric acid,
Boc-4-cyano-D-β-Homophe-OH
90368 NEW
$C_{16}H_{20}N_2O_4$
Mw 304.34
[269726-86-5]



500 mg

(R)-Fmoc-4-fluoro-β-Homophe-OH, ≥98.0% HPLC

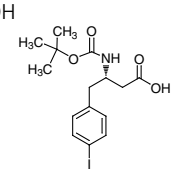
(R)-3-(Fmoc-amino)-4-(4-fluorophenyl)butyric acid,
Fmoc-4-fluoro-D-β-Homophe-OH
87084 NEW
$C_{25}H_3FNO_4$
Mw 419.44
[331763-70-3]



500 mg

(S)-Boc-4-iodo-β-Homophe-OH, ≥98.0% HPLC

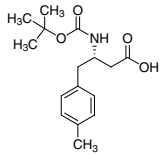
(S)-3-(Boc-amino)-4-(4-iodophenyl)butyric acid,
Boc-4-iodo-L-β-Homophe-OH
86251 NEW
$C_{15}H_{20}INO_4$
Mw 405.23
[270065-71-9]



500 mg

(S)-Boc-4-methyl-β-Homophe-OH, ≥97.0% HPLC

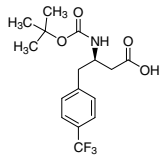
(S)-3-(Boc-amino)-4-(4-methylphenyl)butyric acid,
Boc-4-methyl-L-β-Homophe-OH
94557 NEW
$C_{16}H_{23}NO_4$
Mw 293.36



500 mg

(R)-Boc-4-trifluoromethyl-β-Homophe-OH, ≥98.0% HPLC

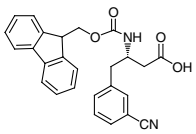
(R)-3-(Boc-amino)-4-[4-(trifluoromethyl)phenyl]butyric acid,
Boc-4-(trifluoromethyl)-D-β-Homophe-OH
94592 NEW
$C_{16}H_{20}F_3NO_4$
Mw 347.33



500 mg

(S)-Fmoc-3-cyano-β-Homophe-OH, ≥98.0% HPLC

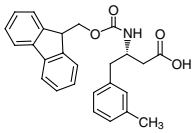
(S)-3-(Fmoc-amino)-4-(3-cyanophenyl)butyric acid,
Fmoc-3-cyano-L-β-Homophe-OH
81791 NEW
$C_{26}H_{22}N_2O_4$
Mw 426.46
[270065-87-7]



500 mg

(S)-Fmoc-3-methyl-β-Homophe-OH, ≥98.0% HPLC

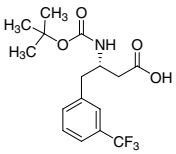
(S)-3-(Fmoc-amino)-4-(3-methylphenyl)butyric acid,
Fmoc-3-methyl-L-β-Homophe-OH
80587 NEW
$C_{26}H_{25}NO_4$
Mw 415.48
[270062-94-7]



500 mg

(S)-Boc-3-trifluoromethyl-β-Homophe-OH, ≥98.0% HPLC

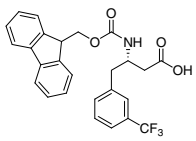
(S)-3-(Boc-amino)-4-[3-(trifluoromethyl)phenyl]butyric acid,
Boc-3-(trifluoromethyl)-L-β-Homophe-OH
94603 NEW
$C_{26}H_{22}F_3NO_4$
Mw 469.45



500 mg

(S)-Fmoc-3-trifluoromethyl-β-Homophe-OH, ≥97.0% HPLC

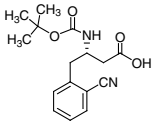
(S)-3-(Fmoc-amino)-4-[3-(trifluoromethyl)phenyl]butyric acid,
Fmoc-3-(trifluoromethyl)-L-β-Homophe-OH
94591 NEW
$C_{26}H_{22}F_3NO_4$
Mw 469.45



500 mg

(S)-Boc-2-cyano-β-Homophe-OH, ≥98.0% HPLC

(S)-3-(Boc-amino)-4-(2-cyanophenyl)butyric acid,
Boc-2-cyano-L-β-Homophe-OH
91919 NEW
$C_{16}H_{20}N_2O_4$
Mw 304.34
[270065-83-3]

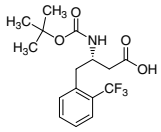


500 mg

1.2 3-Amino-4-Aryl-Butyric Acid Derivatives—Ring-Substituted β-Homophenylalanines (continued)

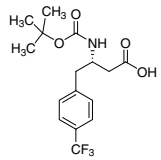
(S)-Boc-2-trifluoromethyl-β-Homophe-OH, ≥98.0% HPLC

(S)-3-(Boc-amino)-4-[2- (trifluoromethyl)phenyl]butyric acid,
Boc-2-(trifluoromethyl)-L-β-Homophe-OH
81998 NEW
$C_{16}H_{20}F_3NO_4$
Mw 347.33
[270065-74-2]
500 mg



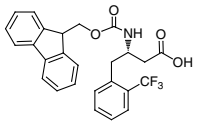
(S)-Boc-4-trifluoromethyl-β-Homophe-OH, ≥98.0% HPLC

(S)-3-(Boc-amino)-4-[4-(trifluoromethyl)phenyl]butyric acid,
Boc-4-(trifluoromethyl)-L-β-Homophe-OH
87943 NEW
$C_{16}H_{20}F_3NO_4$
Mw 347.33
[270065-80-0]
500 mg



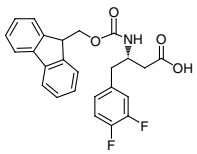
(S)-Fmoc-2-trifluoromethyl-β-Homophe-OH, ≥98.0% HPLC

(S)-3-(Fmoc-amino)-4-[2-(trifluoromethyl)phenyl]butyric acid,
Fmoc-2-(trifluoromethyl)-L-β-Homophe-OH
73801 NEW
$C_{26}H_{22}F_3NO_4$
Mw 469.45
[270065-75-3]
500 mg



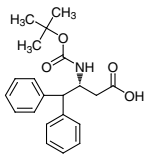
(S)-Fmoc-3,4-difluoro-β-Homophe-OH, ≥98.0% HPLC

(S)-3-(Fmoc-amino)-4-(3,4-difluorophenyl)butyric acid,
Fmoc-3,4-difluoro-L-β-Homophe-OH
88574 NEW
$C_{25}H_{21}F_2NO_4$
Mw 437.44
[270063-55-3]
500 mg



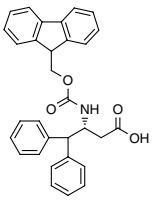
(S)-Boc-4,4-diphenyl-β-Homoala-OH, ≥98.0% HPLC

(S)-3-(Boc-amino)-4,4-diphenylbutyric acid
Fmoc-4,4-diphenyl-L-β-Homoala-OH
82007 NEW
$C_{21}H_{25}NO_4$
Mw 355.43
[190190-50-2]
500 mg



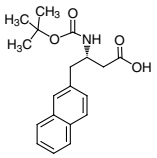
(S)-Fmoc-4,4-diphenyl-β-Homoala-OH, ≥98.0% HPLC

(S)-3-(Fmoc-amino)-4,4-diphenylbutyric acid,
Fmoc-4,4-diphenyl-D-β-Homoala-OH
89846 NEW
$C_{31}H_{27}NO_4$
Mw 477.55
[332062-08-5]
500 mg



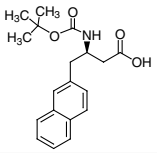
(S)-3-(Boc-amino)-4-(2-naphthyl)butyric acid, ≥98.0% HPLC

Boc-4-(2-naphthyl)-L-β-homoalanine, Boc-β-2-Homonal-OH
88927 NEW
$C_{19}H_{23}NO_4$
Mw 329.39
[219297-11-7]
500 mg



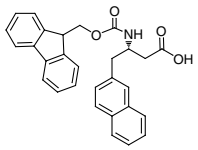
(R)-3-(Boc-amino)-4-(2-naphthyl)butyric acid, ≥98.0% HPLC

Boc-4-(2-naphthyl)-D-β-Homoala-OH, Boc-D-β-2-Homonal-OH
73300 NEW
$C_{19}H_{23}NO_4$
Mw 329.39
[219297-10-6]
500 mg



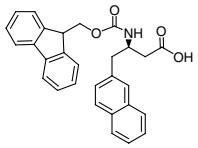
(S)-3-(Fmoc-amino)-4-(2-naphthyl)butyric acid, ≥97.0% HPLC

Fmoc-4-(2-naphthyl)-L-β-Homoala-OH, Fmoc-β-2-Homonal-OH
72829 NEW
$C_{29}H_{25}NO_4$
Mw 451.51
[270063-40-6]
500 mg



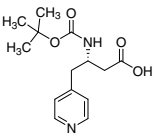
(R)-3-(Fmoc-amino)-4-(2-naphthyl)butyric acid, ≥95.0% HPLC

Fmoc-4-(2-naphthyl)-D-β-Homoala-OH, Fmoc-D-β-2-Homonal-OH
70796 NEW
$C_{29}H_{25}NO_4$
Mw 451.51
[269398-91-6]
500 mg



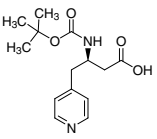
(S)-Boc-4-(4-pyridyl)-β-Homoala-OH, ≥97.0% HPLC

(S)-3-(Boc-amino)-4-(4-pyridyl)butyric acid,
Boc-4-(4-pyridyl)-L-β-Homoala-OH
93647 NEW
$C_{14}H_{20}N_2O_4$
Mw 280.32
[219297-13-9]
500 mg



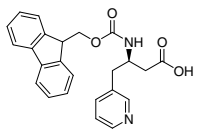
(R)-Boc-4-(4-pyridyl)-β-Homoala-OH, ≥98.0% HPLC

(R)-3-(Boc-amino)-4-(4-pyridyl)butyric acid,
Boc-4-(4-pyridyl)-D-β-Homoala-OH
95336 NEW
$C_{14}H_{20}N_2O_4$
Mw 280.32
[269396-68-1]
500 mg



(R)-Fmoc-4-(3-pyridyl)-β-Homoala-OH, ≥98.0% HPLC

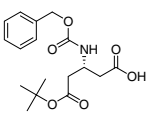
(R)-3-(Fmoc-amino)-4-(3-pyridyl)butyric acid,
Fmoc-4-(3-pyridyl)-D-β-Homoala-OH
73309 NEW
$C_{24}H_{22}N_2O_4$
Mw 402.44
[269396-66-9]
500 mg



1.3 Other β-Amino Acids Building Blocks

Z-β-Glu(OtBu)-OH, ≥94% HPLC

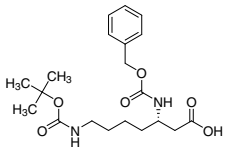
Z-D-β-glutamic acid 5-tert.-butyl ester,
Z-L-β-homoaspartic acid 5-tert.-butyl ester
94064 NEW
$C_{17}H_{23}NO_6$
Mw 337.37
[118247-88-4]



500 mg

Z-β-Homolys(Boc)-OH, ≥98.0% TLC

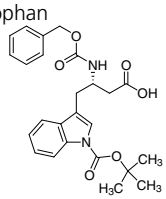
(S)-7-(Boc-amino)-3-(Z-amino)heptanoic acid
89848 NEW
$C_{20}H_{30}N_2O_6$
Mw 394.46



500 mg

Z-β-Homotrp(Boc)-OH, ≥97.0% HPLC

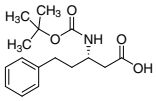
N^{in}-Boc-N^{β}-Z-L-β-homotryptophan
76024 NEW
$C_{25}H_{28}N_2O_6$
Mw 452.50



500 mg

(S)-3-(Boc-amino)-5-phenyl-pentanoic acid, ≥97.0% C

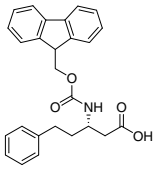
Boc-5-phenyl-L-β-norvaline
76144 NEW
$C_{16}H_{23}NO_4$
Mw 293.36
[218608-84-5]



500 mg

(S)-3-(Fmoc-amino)-5-phenyl-pentanoic acid, ≥95.0% HPLC

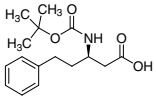
Fmoc-5-phenyl-L-β-norvaline
94493 NEW
$C_{26}H_{25}NO_4$
Mw 415.48
[219967-74-5]



500 mg

(R)-3-(Boc-amino)-5-phenyl-pentanoic acid, ≥97.0% GC

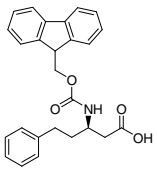
Boc-5-phenyl-D-β-norvaline
78018 NEW
$C_{16}H_{23}NO_4$
Mw 293.36
[218608-83-4]



500 mg

(R)-3-(Fmoc-amino)-5-phenyl-pentanoic acid, ≥95.0% HPLC

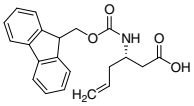
Fmoc-5-phenyl-D-β-norvaline
92282 NEW
$C_{26}H_{25}NO_4$
Mw 415.48
[269398-87-0]



500 mg

(S)-3-(Fmoc-amino)-5-hexenoic acid, ≥95.0% HPLC

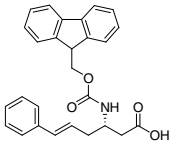
Fmoc-4-vinyl-L-β-Homoala-OH
75561 NEW
$C_{21}H_{21}NO_4$
Mw 351.40
[270263-04-2]



500 mg

(S)-3-(Fmoc-amino)-6-phenyl-5-hexenoic acid, ≥97.0% HPLC

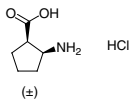
Fmoc-4-styryl-L-β-homoalanine
87901 NEW
$C_{27}H_{25}NO_4$
Mw 427.49



500 mg

cis-2-Amino-1-cyclopentanecarboxylic acid hydrochloride, ≥95.0% AT

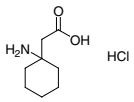
cis-β-Cycloleucine hydrochloride
30249 NEW
$C_6H_{11}NO_2 \cdot HCl$
Mw 165.62
[18414-30-7]



1 g

2-(1-Aminocyclohexyl)acetic acid hydrochloride, ≥95.0% AT

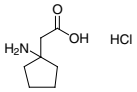
93860 NEW
$C_8H_{15}NO_2 \cdot HCl$
Mw 193.67
[37631-99-5]



1 g

2-(1-Aminocyclopentyl)acetic acid hydrochloride, ≥95.0% AT

38965 NEW
$C_7H_{13}NO_2 \cdot HCl$
Mw 179.64



1 g

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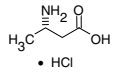
1.4 β³-Homologues of Proteinacious Amino Acids

L-β-Homoala-OH · HCl, ≥98.0%

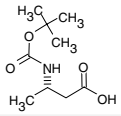
03766
$C_4H_9NO_2 \cdot HCl$
Mw 139.58
[58610-41-6]



250 mg
1 g

Boc-β-Homoala-OH, ≥98.0%

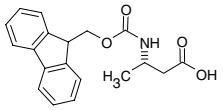
14974
$C_9H_{17}NO_4$
Mw 203.24
[158851-30-0]



250 mg
1 g

Fmoc-β-Homoala-OH, ≥98.0%

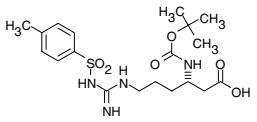
47935
$C_{19}H_{19}NO_4$
Mw 325.36
[193954-26-6]



250 mg
1 g

Boc-β-Homoarg(Tos)-OH, ≥98.0%

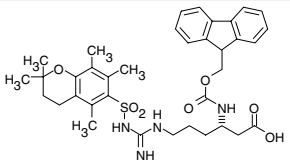
03674
$C_{19}H_{30}N_4O_6S$
Mw 442.52
[136271-81-3]



250 mg
1 g

Fmoc-β-Homoarg(Pmc)-OH, ~97%

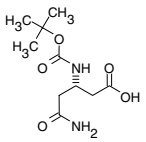
03673
$C_{36}H_{42}N_4O_7S$
Mw 674.81



100 mg
500 mg

Boc-β-Gln-OH, ≥98.0%

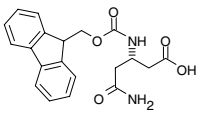
03651
$C_{10}H_{18}N_2O_5$
Mw 246.26



250 mg
1 g

Fmoc-β-Gln-OH, ≥98.0%

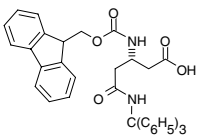
03652
$C_{20}H_{20}N_2O_5$
Mw 368.39



250 mg
1 g

Fmoc-β-Gln(Trt)-OH, ≥97.0%

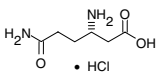
18505
$C_{39}H_{34}N_2O_5$
Mw 610.70
[283160-20-3]



250 mg
1 g

H-β-Homogln-OH · HCl, ≥98.0%

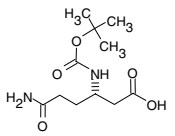
03663
$C_6H_{12}N_2O_3 \cdot HCl$
Mw 196.63



250 mg
1 g

Boc-β-Homogln-OH, ≥98.0%

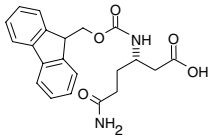
03667
$C_{11}H_{20}N_2O_5$
Mw 260.29



250 mg
1 g

Fmoc-β-Homogln-OH, ≥98.0%

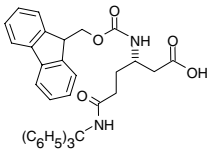
03666
$C_{21}H_{22}N_2O_5$
Mw 382.42
[283160-17-8]



250 mg
1 g

Fmoc-β-Homogln(Trt)-OH, ≥97.0%

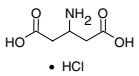
64179
$C_{40}H_{36}N_2O_5$
Mw 624.72



250 mg
1 g

H-β-Glu-OH · HCl, ≥98.0%

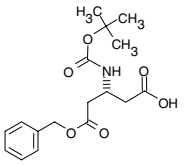
03688
$C_5H_9NO_4 \cdot HCl$
Mw 183.59



100 mg
500 mg

Boc-β-Glu(OBzl)-OH, ≥98.0%

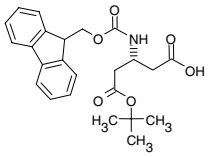
03691
$C_{17}H_{23}NO_6$
Mw 337.37



250 mg
1 g

Fmoc-β-Glu(OtBu)-OH, ≥98.0%

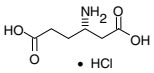
03689
$C_{24}H_{27}NO_6$
Mw 425.48



250 mg
1 g

H-β-Homoglu-OH · HCl, ≥98.0%

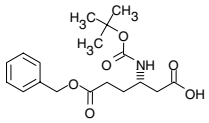
03765
$C_6H_{11}NO_4 \cdot HCl$
Mw 197.62
[61884-74-0]



100 mg
500 mg

Boc-β-Homoglu(OBzl)-OH, ≥98.0%

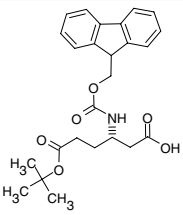
14977
$C_{18}H_{25}NO_6$
Mw 351.4
[61884-74-0]



250 mg
1 g

Fmoc-β-Homoglu(OtBu)-OH, ≥98.0%

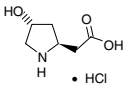
47837
$C_{25}H_{29}NO_6$
Mw 439.51
[203854-49-3]



250 mg
1 g

H-β-Homohyp-OH · HCl, ≥98.0%

03698
$C_6H_{11}NO_3 \cdot HCl$
Mw 181.62

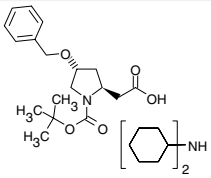


100 mg
500 mg

1.4 β³-Homologues of Proteinacious Amino Acids (continued)

Boc-β-Homohyp(Bzl)-OH · DCHA, ≥85.0%

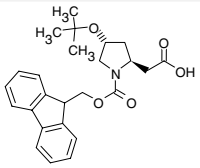
03683
$C_{18}H_{25}NO_5 \cdot C_{12}H_{23}N$
Mw 516.71



250 mg
1 g

Fmoc-β-Homohyp(tBu)-OH, ≥98.0%

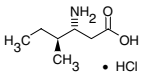
03751
$C_{25}H_{29}NO_5$
Mw 423.51



100 mg
500 mg

H-β-Homoile-OH · HCl, ≥98.0%

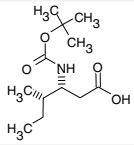
03669
$C_7H_{15}NO_2 \cdot HCl$
Mw 181.66
[219310-10-8]



250 mg
1 g

Boc-β-Homoile-OH, ≥98.0%

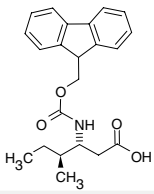
03654
$C_{12}H_{23}NO_4$
Mw 245.32



250 mg
1 g

Fmoc-β-Homoile-OH, ≥98.0%

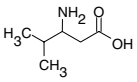
03671
$C_{22}H_{25}NO_4$
Mw 367.45
[193954-27-7]



250 mg
1 g

H-DL-β-Leu-OH, ≥98.0%

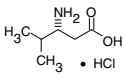
17988
$C_6H_{13}NO_2$
Mw 131.17
[5699-54-7]



1 g
5 g

H-β-Leu-OH · HCl, ≥98.0%

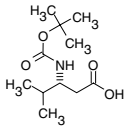
03675
$C_6H_{13}NO_2 \cdot HCl$
Mw 167.63
[219310-09-5]



250 mg
1 g

Boc-β-Leu-OH, ≥98.0%

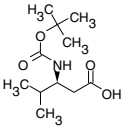
03678
$C_{11}H_{21}NO_4$
Mw 231.29
[183990-64-9]



250 mg
1 g

Boc-D-β-Leu-OH, ≥98.0%

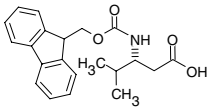
80674
$C_{11}H_{21}NO_4$
Mw 231.29
[179412-79-4]



250 mg
1 g

Fmoc-β-Leu-OH, ≥98.0%

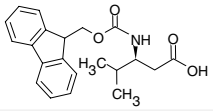
03676
$C_{21}H_{23}NO_4$
Mw 353.42
[172695-33-9]



250 mg
1 g

Fmoc-D-β-Leu-OH, ≥98.0%

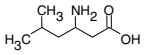
73278
$C_{21}H_{23}NO_4$
Mw 353.24



250 mg
1 g

H-DL-β-Homoleu-OH, ≥99.0%

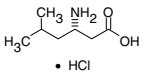
21625
$C_7H_{15}NO_2$
Mw 145.20
[3653-34-7]



1 g
5 g

H-β-Homoleu-OH · HCl, ≥98.0%

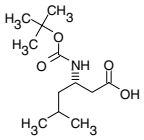
03764
$C_7H_{15}NO_2 \cdot HCl$
Mw 181.66
[96386-92-4]



250 mg
1 g

Boc-β-Homoleu-OH, ≥98.0%

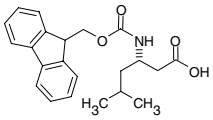
14975
$C_{12}H_{23}NO_4$
Mw 245.32
[132549-43-0]



250 mg
1 g

Fmoc-β-Homoleu-OH, ~98%

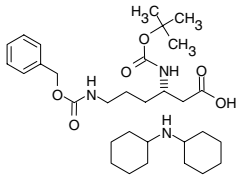
47946
$C_{22}H_{25}NO_4$
Mw 367.45
[193887-44-4]



250 mg
1 g

Boc-β-Lys(Z)-OH, DCHA, ≥98.0%

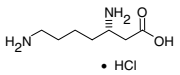
52136
$C_{19}H_{28}N_2O_6 \cdot C_{12}H_{23}N$
Mw 561.76



1 g

H-β-Homolys-OH, · 2HCl, ≥98.0%

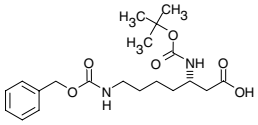
03759
$C_7H_{16}N_2O_2 \cdot 2HCl$
Mw 233.14



100 mg
500 mg

Boc-β-Homolys(Z)-OH, ≥98.0%

14978
$C_{20}H_{30}N_2O_6$
Mw 394.47

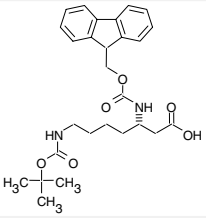


250 mg
1 g

1.4 β³-Homologues of Proteinacious Amino Acids (continued)

Fmoc-β-Homolys(Boc)-OH, ~97%

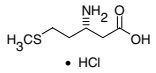
47874
$C_{27}H_{34}N_2O_6$
Mw 482.58
[203854-47-1]



250 mg
1 g

H-β-Homomet-OH · HCl, ≥98.0%

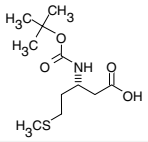
03681
$C_6H_{13}NO_2S \cdot HCl$
Mw 199.70



250 mg
1 g

Boc-β-Homomet-OH, ≥98.0%

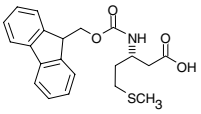
03661
$C_{11}H_{21}NO_4S$
Mw 263.35



250 mg
1 g

Fmoc-β-Homomet-OH, ≥98.0%

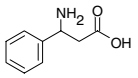
03658
$C_{21}H_{23}NO_4S$
Mw 385.48



250 mg
1 g

H-DL-β-Phe-OH, ~99%

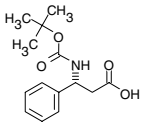
71552
$C_9H_{11}NO_2$
Mw 165.19
[614-19-7]



1 g
5 g

Boc-β-Phe-OH, ~98%

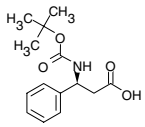
09794
$C_{14}H_{19}NO_4$
Mw 265.31
[161024-80-2]



250 mg
1 g

Boc-D-β-Phe-OH, ≥98.0%

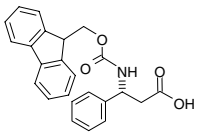
09793
$C_{14}H_{19}NO_4$
Mw 265.31
[103365-86-2]



250 mg
1 g

Fmoc-β-Phe-OH, ≥98.0%

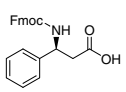
09795
$C_{24}H_{21}NO_4$
Mw 387.44
[220498-02-2]



100 mg
500 mg

Fmoc-D-β-Phe-OH, ≥98.0%

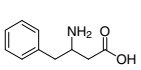
00396
$C_{24}H_{21}NO_4$
Mw 387.44
[209252-15-3]



100 mg
500 mg

H-DL-β-Homophe-OH, ≥98.0%

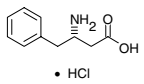
28217
$C_{10}H_{13}NO_2$
Mw 179.22
[15099-85-1]



1 g
5 g

H-β-Homophe-OH · HCl, ≥98.0%

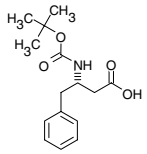
03769
$C_{10}H_{13}NO_2 \cdot HCl$
Mw 215.68
[138165-77-2]



250 mg
1 g

Boc-β-Homophe-OH, ≥98.0%

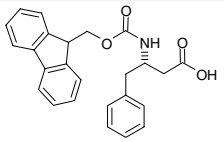
14979
$C_{15}H_{21}NO_4$
Mw 279.34
[51871-62-6]



250 mg
1 g

Fmoc-β-Homophe-OH, ~97%

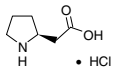
47878
$C_{25}H_{23}NO_4$
Mw 401.46
[193954-28-8]



250 mg
1 g

H-L-β-Homopro-OH · HCl, ≥98.0%

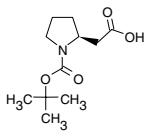
03768
$C_6H_{11}NO_2 \cdot HCl$
Mw 165.62
[53912-85-9]



250 mg
1 g

Boc-β-Homopro-OH, ≥98.0%

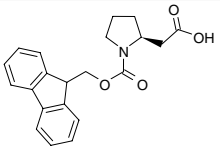
14982
$C_{11}H_{19}NO_4$
Mw 229.28
[56502-01-3]



250 mg
1 g

Fmoc-β-Homopro-OH, ≥98.0%

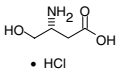
47912
$C_{21}H_{21}NO_4$
Mw 351.4
[193693-60-6]



250 mg
1 g

H-β-Homoser-OH, ≥98.0%

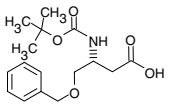
03694
$C_4H_9NO_3$
Mw 119.12
[6504-56-6]



100 mg
500 mg

Boc-β-Homoser(Bzl)-OH, ≥98.0%

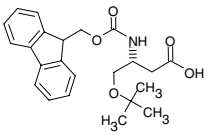
03697
$C_{16}H_{23}NO_5$
Mw 309.36



250 mg
1 g

Fmoc-β-Homoser(tBu)-OH, ≥98.0%

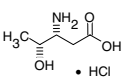
03696
$C_{23}H_{27}NO_5$
Mw 397.47
[203854-51-7]



250 mg
1 g

H-β-Homothr-OH · HCl, ≥98.0%

03767
$C_5H_{11}NO_3 \cdot HCl$
Mw 169.61

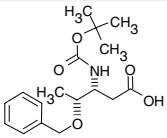


100 mg
500 mg

1.4 β³-Homologues of Proteinacious Amino Acids (continued)

Boc-β-Homothr(Bzl)-OH, ≥98.0%

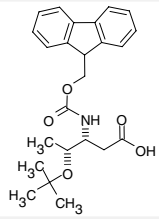
14976
$C_{17}H_{25}NO_5$
Mw 323.39



250 mg
1 g

Fmoc-β-Homothr(tBu)-OH, ~98%

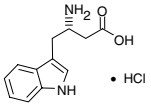
47911
$C_{24}H_{29}NO_5$
Mw 411.5



250 mg
1 g

H-β-Homotrp-OH · HCl, ≥98.0%

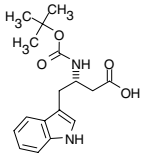
03790
$C_{12}H_{14}N_2O_2 \cdot HCl$
Mw 254.71



100 mg
500 mg

Boc-β-Homotrp-OH, ≥98.0%

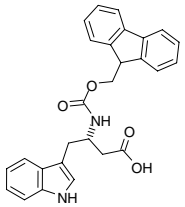
14981
$C_{17}H_{22}N_2O_4$
Mw 318.37



250 mg
1 g

Fmoc-β-Homotrp-OH, ~98%

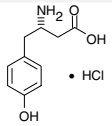
47901
$C_{27}H_{24}N_2O_4$
Mw 440.5



250 mg
1 g

H-β-Homotyr-OH · HCl, ≥97.0

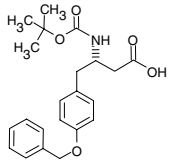
03758
$C_{10}H_{13}NO_3 \cdot HCl$
Mw 231.68



100 mg
500 mg

Boc-β-Homotyr(Bzl)-OH, ≥98.0%

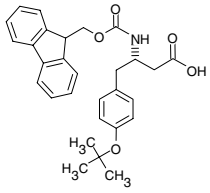
03693
$C_{22}H_{27}NO_5$
Mw 385.46
[126825-16-9]



250 mg
1 g

Fmoc-β-Homotyr(tBu)-OH, ≥98.0%

03692
$C_{29}H_{31}NO_5$
Mw 473.57
[219967-69-8]

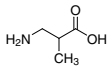


250 mg
1 g

1.5 β²-Amino Acids

H-DL-β²-Homoala-OH, ≥99.0%

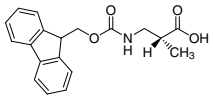
08290
$C_4H_9NO_2$
Mw 103.12
[144-90-1]



1 g
5 g
25 g

(R)-Fmoc-β²-Homoala-OH, ≥95.0%

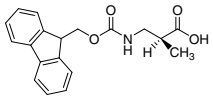
30975
$C_{19}H_{19}NO_4$
Mw 325.36
[211682-15-4]



500 mg

(S)-Fmoc-β²-Homoala-OH, ≥95.0%

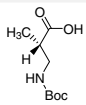
38811
$C_{19}H_{19}NO_4$
Mw 325.36
[203854-58-4]



500 mg

(S)-Boc-β²-Homoala-OH, ≥98.0%

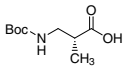
40195
$C_9H_{17}NO_4$
Mw 203.24
[190897-47-3]



500 mg

(R)-Boc-β²-Homoala-OH, ≥98.0%

78953
$C_9H_{17}NO_4$
Mw 203.24
[132696-45-8]

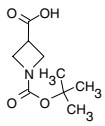


500 mg

1.6 Cyclic β-Amino Acids

1-Boc-azetidine-3-carboxylic acid, ≥98.0%

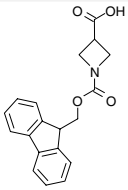
09928
$C_9H_{15}NO_4$
Mw 201.22
[142253-55-2]



100 mg
500 mg

1-Fmoc-azetidine-3-carboxylic acid, ≥98.0%

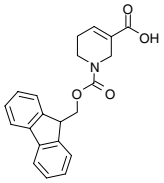
00398
$C_{19}H_{17}NO_4$
Mw 323.35
[193693-64-0]



100 mg
500 mg

N-Fmoc-guvacine, ~98%

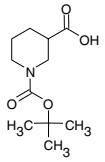
93925
$C_{21}H_{19}NO_4$
Mw 349.39



100 mg
500 mg

(±)-Boc-Nip-OH, ≥98.0%

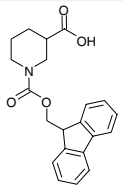
85405
$C_{11}H_{19}NO_4$
Mw 229.28
[88495-54-9]



1 g
5 g

(±)-Fmoc-Nip-OH, ≥99.0%

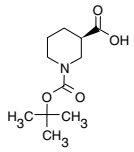
90233
$C_{21}H_{21}NO_4$
Mw 351.4
[193693-68-4]



1 g
5 g

(R)-Boc-Nip-OH, ≥97.0%

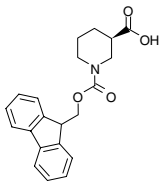
89763
$C_{11}H_{19}NO_4$
Mw 229.28
[88495-54-9]



1 g
5 g

(R)-Fmoc-Nip-OH, ≥99.0%

84222
$C_{21}H_{21}NO_4$
Mw 351.4
[193693-68-4]



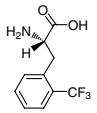
1 g
5 g

2. Phenylalanine Derivatives

2.1 Ring-Substituted Phenylalanines and 3-Aryl-Substituted Alanines

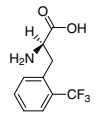
H-2-(trifluoromethyl)-L-Phe-OH, ≥98.0% TLC

(S)-2-Amino-3-[2-(trifluoromethyl)phenyl]propionic acid
93077 NEW 1 g
$C_{10}H_{10}F_3NO_2$
Mw 233.19
[119009-47-1]



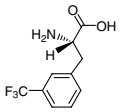
H-2-(trifluoromethyl)-D-Phe-OH, ≥98.0% TLC

(R)-2-Amino-3-[2-(trifluoromethyl)phenyl]propionic acid
87028 NEW 1 g
$C_{10}H_{10}F_3NO_2$
Mw 233.19
[130930-49-3]



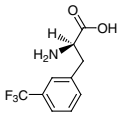
H-3-(trifluoromethyl)-L-Phe-OH, ≥96.0% HPLC

(S)-2-Amino-3-[3-(trifluoromethyl)phenyl]propionic acid
77092 NEW 1 g
$C_{10}H_{10}F_3NO_2$
Mw 233.19
[14464-68-7]



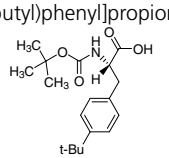
H-3-(trifluoromethyl)-D-Phe-OH, ≥96.0% HPLC

(R)-2-Amino-3-[3-(trifluoromethyl)phenyl]propionic acid
76029 NEW 1 g
$C_{10}H_{10}F_3NO_2$
Mw 233.19
[14464-67-6]



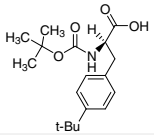
Boc-4-tert-butyl-Phe-OH, ≥98.0% HPLC

(S)-2-(Boc-amino)-3-[4-(tert.-butyl)phenyl]propionic acid
68184 NEW 1 g
$C_{18}H_{27}NO_4$
Mw 321.41
[143415-62-7]



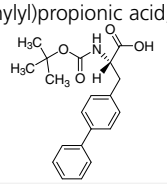
Boc-4-tert.-butyl-D-Phe-OH, ≥98.0% HPLC

(R)-2-(Boc-amino)-3-[4-(tert.-butyl)phenyl]propionic acid
05839 NEW 1 g
$C_{18}H_{27}NO_4$
Mw 321.41
[250611-12-2]



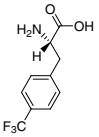
Boc-4-phenyl-Phe-OH, ≥98.0% HPLC

(S)-2-(Boc-amino)-3-(4-biphenylyl)propionic acid, Boc-Bip-OH
39072 NEW 1 g
$C_{20}H_{23}NO_4$
Mw 341.40
[147923-08-8]



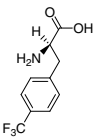
H-4-(trifluoromethyl)-L-Phe-OH, ≥99.0% HPLC

(S)-2-Amino-3-[4-(trifluoromethyl)phenyl]propionic acid
93031 NEW 1 g
$C_{10}H_{10}F_3NO_2$
Mw 233.19
[114926-38-4]



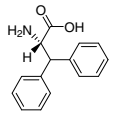
H-4-(trifluoromethyl)-D-Phe-OH, ≥99.0% HPLC

(R)-2-Amino-3-[4-(trifluoromethyl)phenyl]propionic acid
93956 NEW 1 g
$C_{10}H_{10}F_3NO_2$
Mw 233.19
[114872-99-0]



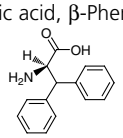
3,3-Diphenyl-L-alanine, ≥98.0% HPLC

(S)-2-Amino-3,3-diphenylpropionic acid, β-Phenyl-L-Phe-OH
86998 NEW 1 g
$C_{15}H_{15}NO_2$
Mw 241.29



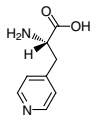
3,3-Diphenyl-D-alanine, ≥98.0% HPLC

(R)-2-Amino-3,3-diphenylpropionic acid, β-Phenyl-D-Phe-OH
89351 NEW 1 g
$C_{15}H_{15}NO_2$
Mw 241.29
[149597-91-1]



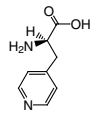
H-3-(4-pyridyl)-L-Ala-OH, ≥98.0% TLC

(S)-2-Amino-3-(4-pyridyl)propionic acid, 4'-Aza-L-Phe-OH
81956 NEW 1 g
$C_8H_{10}N_2O_2$
Mw 166.18
[37535-49-2]



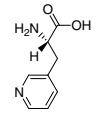
H-3-(4-pyridyl)-D-Ala-OH, ≥98.0% TLC

(R)-2-Amino-3-(4-pyridyl)propionic acid, 4'-Aza-D-Phe-OH
70214 NEW 1 g
$C_8H_{10}N_2O_2$
Mw 166.18
[37535-50-5]



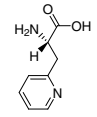
H-3-(3-pyridyl)-L-Ala-OH, ≥98.0% HPLC

(S)-2-Amino-3-(3-pyridyl)propionic acid, 3'-Aza-L-Phe-OH
94814 NEW 1 g
$C_8H_{10}N_2O_2$
Mw 166.18
[64090-98-8]



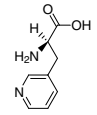
H-3-(2-pyridyl)-L-Ala-OH, ≥98.0% TLC

(S)-2-Amino-3-(2-pyridyl)propionic acid, 2'-Aza-L-Phe-OH
71836 NEW 1 g
$C_8H_{10}N_2O_2$
Mw 166.18
[37535-51-6]



H-3-(2-pyridyl)-D-Ala-OH, ≥98.0% TLC

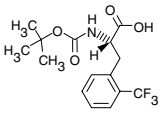
(R)-2-Amino-3-(2-pyridyl)propionic acid, 2'-Aza-D-Phe-OH
95718 NEW 1 g
$C_8H_{10}N_2O_2$
Mw 166.18
[37535-52-7]



2.2 Ortho-Substituted Phenylalanines

Boc-Phe(2-CF_3)-OH, ≥98.0%

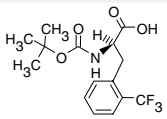
15011
$C_{15}H_{18}F_3NO_4$
Mw 333.31
[167993-21-7]



1 g
5 g

Boc-D-Phe(2-CF_3)-OH, ≥98.0%

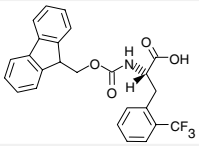
15009
$C_{15}H_{18}F_3NO_4$
Mw 333.31



1 g
5 g

Fmoc-Phe(2-CF_3)-OH, ≥98.0%

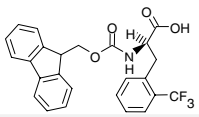
47826
$C_{25}H_{20}F_3NO_4$
Mw 455.43



1 g
5 g

Fmoc-D-Phe(2-CF_3)-OH, ≥98.0%

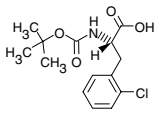
47824
$C_{25}H_{20}F_3NO_4$
Mw 455.43



1 g
5 g

Boc-Phe(2-Cl)-OH, ≥98.0%

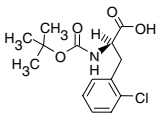
15021
$C_{14}H_{18}ClNO_4$
Mw 299.75
[114873-02-8]



1 g
5 g

Boc-D-Phe(2-Cl)-OH, ≥98.0%

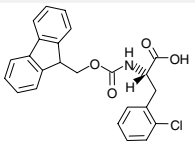
15018
$C_{14}H_{18}ClNO_4$
Mw 299.75
[80102-23-4]



1 g
5 g

Fmoc-Phe(2-Cl)-OH, ≥98.0%

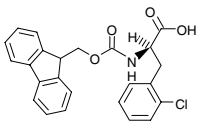
47766
$C_{24}H_{20}ClNO_4$
Mw 421.88
[198560-41-7]



1 g
5 g

Fmoc-D-Phe(2-Cl)-OH, ≥97.0%

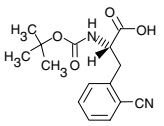
47765
$C_{24}H_{20}ClNO_4$
Mw 421.88
[205526-22-3]



1 g
5 g

Boc-Phe(2-CN)-OH, ≥98.0%

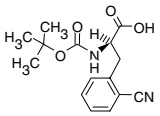
14984
$C_{15}H_{18}N_2O_4$
Mw 290.32
[216312-53-7]



1 g
5 g

Boc-D-Phe(2-CN)-OH, ≥98.0%

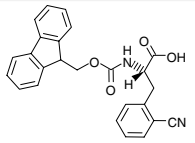
14983
$C_{15}H_{18}N_2O_4$
Mw 290.32



1 g
5 g

Fmoc-Phe(2-CN)-OH, ≥98.0%

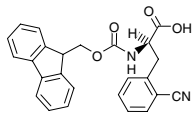
47803
$C_{25}H_{20}N_2O_4$
Mw 412.44



1 g
5 g

Fmoc-D-Phe(2-CN)-OH, ≥98.0%

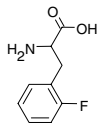
47802
$C_{25}H_{20}N_2O_4$
Mw 412.44



1 g
5 g

H-2-Fluoro-DL-Phe-OH, ≥98.0%

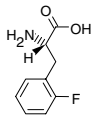
47300
$C_9H_{10}FNO_2$
Mw 183.18
[2629-55-2]



1 g
5 g

H-2-Fluoro-L-Phe-OH, ≥99.0%

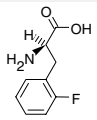
47296
$C_9H_{10}FNO_2$
Mw 183.18
[19883-78-4]



1 g

H-2-Fluoro-D-Phe-OH, ≥99.0%

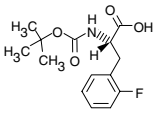
47298
$C_9H_{10}FNO_2$
Mw 183.18
[97731-02-7]



1 g

Boc-Phe(2-F)-OH, ≥98.0%

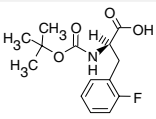
15024
$C_{14}H_{18}FNO_4$
Mw 283.30
[114873-00-6]



1 g
5 g

Boc-D-Phe(2-F)-OH, ≥98.0%

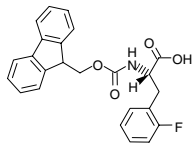
15023
$C_{14}H_{18}FNO_4$
Mw 283.30
[114873-10-8]



1 g
5 g

Fmoc-Phe(2-F)-OH, ~98.0%

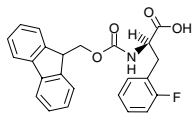
47769
$C_{24}H_{20}FNO_4$
Mw 405.43
[205526-26-7]



1 g
5 g

Fmoc-D-Phe(2-F)-OH, ≥98.0%

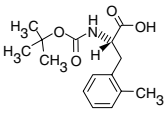
47767
$C_{24}H_{20}FNO_4$
Mw 405.43
[198545-45-9]



1 g
5 g

Boc-Phe(2-Me)-OH, ≥98.0%

14998
$C_{15}H_{21}NO_4$
Mw 279.34
[114873-05-1]

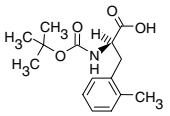


1 g
5 g

2.2 Ortho-Substituted Phenylalanines (continued)

Boc-D-Phe(2-Me)-OH, ≥98.0%

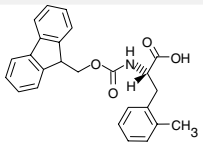
14997
$C_{15}H_{21}NO_4$
Mw 279.34
[80102-29-0]



1 g
5 g

Fmoc-Phe(2-Me)-OH, ≥98.0%

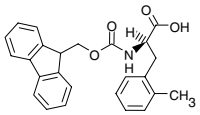
47817
$C_{25}H_{23}NO_4$
Mw 401.46
[211637-75-1]



1 g
5 g

Fmoc-D-Phe(2-Me)-OH, ≥98.0%

47816
$C_{25}H_{23}NO_4$
Mw 401.46

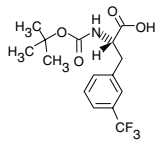


1 g
5 g

2.3 Meta-Substituted Phenylalanines

Boc-Phe(3-CF_3)-OH, ≥98.0%

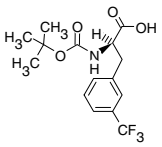
15013
$C_{15}H_{18}F_3NO_4$
Mw 333.31
[142995-31-1]



1 g
5 g

Boc-D-Phe(3-CF_3)-OH, ≥98.0%

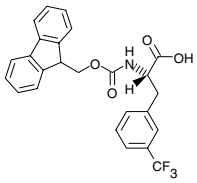
15012
$C_{15}H_{18}F_3NO_4$
Mw 333.31
[82317-82-6]



1 g
5 g

Fmoc-Phe(3-CF_3)-OH, ≥98.0%

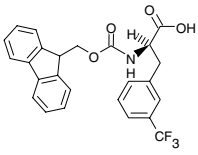
47833
$C_{25}H_{20}F_3NO_4$
Mw 455.43
[205526-27-8]



1 g
5 g

Fmoc-D-Phe(3-CF_3)-OH, ≥98.0%

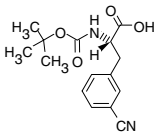
47832
$C_{25}H_{20}F_3NO_4$
Mw 455.43
[205526-28-9]



1 g
5 g

Boc-Phe(3-CN)-OH, ≥98.0%

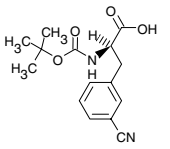
14986
$C_{15}H_{18}N_2O_4$
Mw 290.32
[131980-30-8]



1 g
5 g

Boc-D-Phe(3-CN)-OH, ≥98.0%

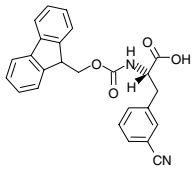
14985
$C_{15}H_{18}N_2O_4$
Mw 290.32
[205445-56-3]



1 g
5 g

Fmoc-Phe(3-CN)-OH, ≥98.0%

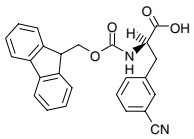
47805
$C_{25}H_{20}N_2O_4$
Mw 412.44
[205526-36-9]



1 g
5 g

Fmoc-D-Phe(3-CN)-OH, ≥98.0%

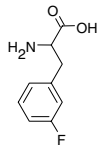
47804
$C_{25}H_{20}N_2O_4$
Mw 412.44
[205526-37-0]



1 g
5 g

H-3-Fluoro-DL-Phe-OH, ≥98.0%

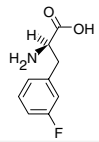
47310
$C_9H_{10}FNO_2$
Mw 183.18
[456-88-2]



1 g

H-3-Fluoro-D-Phe-OH, ≥99.0%

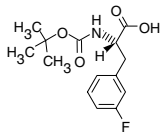
47308
$C_9H_{10}FNO_2$
Mw 183.18
[110117-84-5]



250 mg
1 g

Boc-Phe(3-F)-OH, ≥98.0%

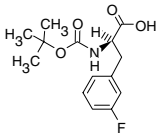
14996
$C_{14}H_{18}FNO_4$
Mw 283.3
[114873-01-7]



1 g
5 g

Boc-D-Phe(3-F)-OH, ≥98.0%

14995
$C_{14}H_{18}FNO_4$
Mw 283.3
[114873-11-9]

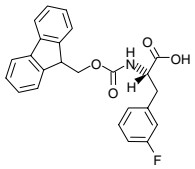


1 g
5 g

2.3 Meta-Substituted Phenylalanines (continued)

Fmoc-Phe(3-F)-OH, ≥98.0%

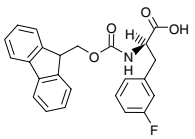
47815
$C_{24}H_{20}FNO_4$
Mw 405.43
[198560-68-8]



1 g
5 g

Fmoc-D-Phe(3-F)-OH, ~98.0%

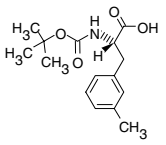
47814
$C_{24}H_{20}FNO_4$
Mw 405.43
[198545-72-1]



1 g
5 g

Boc-Phe(3-Me)-OH, ≥98.0%

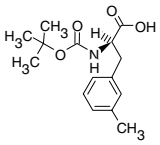
15002
$C_{15}H_{21}NO_4$
Mw 279.34
[114873-06-2]



1 g
5 g

Boc-D-Phe(3-Me)-OH, ≥98.0%

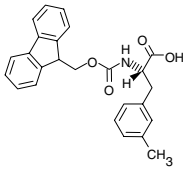
14999
$C_{15}H_{21}NO_4$
Mw 279.34
[114873-14-2]



1 g
5 g

Fmoc-Phe(3-Me)-OH, ≥98.0%

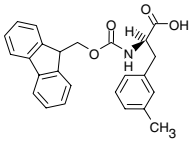
47819
$C_{25}H_{23}NO_4$
Mw 401.46
[211637-74-0]



1 g
5 g

Fmoc-D-Phe(3-Me)-OH, ≥98.0%

47818
$C_{25}H_{23}NO_4$
Mw 401.46



1 g
5 g

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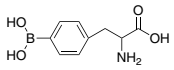
2.4 Para-Substituted Phenylalanines (continued)

4-Borono-DL-Phe-OH, 95%

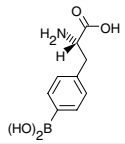
51,268-0
$C_9H_{12}BNO_4$
Mw 209.01
[90580-64-6]



1 g

4-Borono-L-Phe-OH, ~97.0%

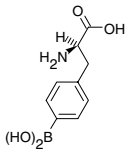
17755
$C_9H_{12}BNO_4$
Mw 209.01
[76410-58-7]



250 mg

4-Borono-D-Phe-OH, ≥98.0%

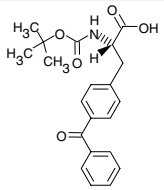
68047
$C_9H_{12}BNO_4$
Mw 209.01
[111821-49-9]



250 mg

Boc-Bpa-OH, ~98%

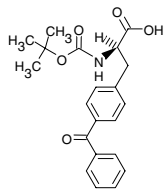
Boc-4-benzoyl-Phe-OH
09775
$C_{21}H_{23}NO_5$
Mw 369.42
[104504-43-0]



250 mg
1 g

Boc-D-Bpa-OH, ~98%

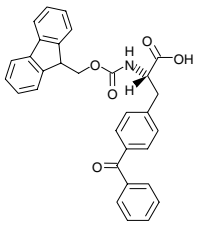
Boc-4-benzoyl-D-Phe-OH
09776
$C_{21}H_{23}NO_5$
Mw 369.42
[117666-94-1]



250 mg
1 g

Fmoc-Bpa-OH, ≥98.0%

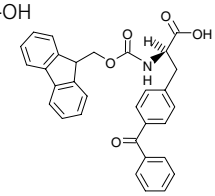
Fmoc-4-benzoyl-Phe-OH
09774
$C_{31}H_{25}NO_5$
491.54
[117666-96-3]



250 mg
1 g

Fmoc-D-Bpa-OH, ≥98.0%

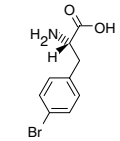
Fmoc-4-benzoyl-D-Phe-OH
09773
$C_{31}H_{25}NO_5$
Mw 491.54
[117666-97-4]



250 mg
1 g

H-4-Bromo-L-Phe-OH, ≥98.0%

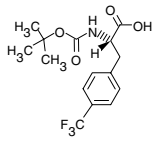
18055
$C_9H_{10}BrNO_2$
Mw 244.09
[24250-84-8]



100 mg
500 mg

Boc-Phe(4-CF_3)-OH, ≥98.0%

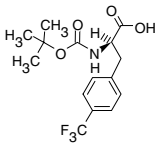
15017
$C_{15}H_{18}F_3NO_4$
Mw 333.31
[114873-07-3]



1 g
5 g

Boc-D-Phe(4-CF_3)-OH, ≥98.0%

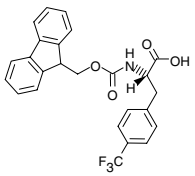
15016
$C_{15}H_{18}F_3NO_4$
Mw 333.31
[82317-83-7]



1 g
5 g

Fmoc-Phe(4-CF_3)-OH, ≥98.0%

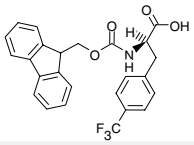
47835
$C_{25}H_{20}F_3NO_4$
Mw 455.43



1 g
5 g

Fmoc-D-Phe(4-CF_3)-OH, ≥98.0%

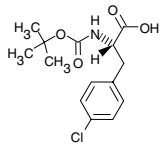
47834
$C_{25}H_{20}F_3NO_4$
Mw 455.43



1 g
5 g

Boc-Phe(4-Cl)-OH, ~98%

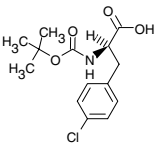
15472
$C_{14}H_{18}ClNO_4$
Mw 299.75
[68090-88-0]



1 g
5 g

Boc-D-Phe(4-Cl)-OH, ~98%

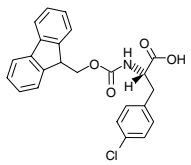
15471
$C_{14}H_{18}ClNO_4$
Mw 299.75
[57292-44-1]



1 g
5 g

Fmoc-Phe(4-Cl)-OH, ≥98.0%

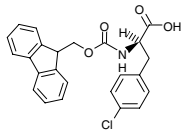
47424
$C_{24}H_{20}ClNO_4$
Mw 421.88
[175453-08-4]



1 g
5 g

Fmoc-D-Phe(4-Cl)-OH, ≥98.0%

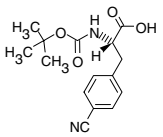
47420
$C_{24}H_{20}ClNO_4$
Mw 421.88
[142994-19-2]



1 g
5 g

Boc-Phe(4-CN)-OH, ≥98.0%

14988
$C_{15}H_{18}N_2O_4$
Mw 290.32
[131724-45-3]



1 g
5 g

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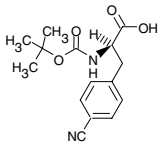
2.4 Para-Substituted Phenylalanines (continued)

Boc-D-Phe(4-CN)-OH, ≥97.0%

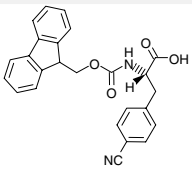
14987
$C_{15}H_{18}N_2O_4$
Mw 290.32
[146727-62-0]



1 g
5 g

Fmoc-Phe(4-CN)-OH, ≥98.0%

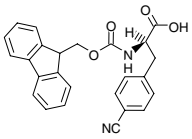
47807
$C_{25}H_{20}N_2O_4$
Mw 412.44
[173963-93-4]



1 g
5 g

Fmoc-D-Phe(4-CN)-OH, ≥98.0%

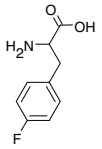
47806
$C_{25}H_{20}N_2O_4$
Mw 412.44
[205526-34-7]



1 g
5 g

H-4-Fluoro-DL-Phe-OH, ≥99.0%

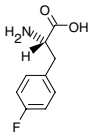
47320
$C_9H_{10}FNO_2$
Mw 183.18
[51-65-0]



1 g

H-4-Fluoro-L-Phe-OH, ≥99.0%

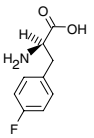
47290
$C_9H_{10}FNO_2$
Mw 183.18
[1132-68-9]



500 mg
2.5 g

H-4-Fluoro-D-Phe-OH, ≥99.0%

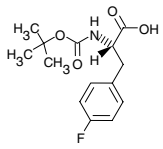
47318
$C_9H_{10}FNO_2$
Mw 183.18
[18125-46-7]



250 mg
1 g

Boc-Phe(4-F)-OH, ≥99.0%

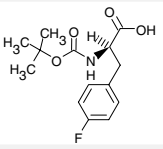
15352
$C_{14}H_{18}FNO_4$
Mw 283.3
[41153-30-4]



1 g
5 g

Boc-D-Phe(4-F)-OH, ≥99.0%

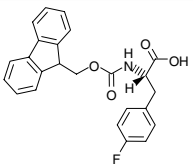
15351
$C_{14}H_{18}FNO_4$
Mw 283.3
[57292-45-2]



1 g
5 g

Fmoc-Phe(4-F)-OH, ≥98.0%

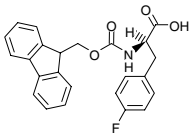
47428
$C_{24}H_{20}FNO_4$
Mw 405.43
[169243-86-1]



1 g
5 g

Fmoc-D-Phe(4-F)-OH, ≥98.0%

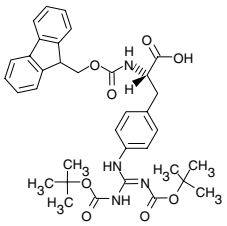
47427
$C_{24}H_{20}FNO_4$
Mw 405.43
[177966-64-2]



1 g
5 g

Fmoc-(4-Boc$_2$-guanidino)-Phe-OH, ≥90%

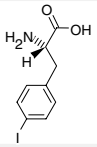
22669
$C_{35}H_{40}N_4O_8$
Mw 644.71
[187283-25-6]



500 mg

H-4-Iodo-L-Phe-OH, ≥96.0

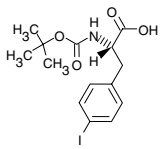
58032
$C_9H_{10}INO_2$
Mw 291.09
[24250-85-9]



1 g

Boc-Phe(4-I)-OH, ≥99.0%

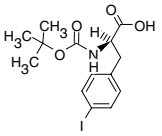
15346
$C_{14}H_{18}INO_4$
Mw 391.21
[62129-44-6]



1 g
5 g

Boc-D-Phe(4-I)-OH, ≥98.0%

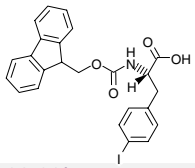
15044
$C_{14}H_{18}INO_4$
Mw 391.21
[176199-35-2]



1 g
5 g

Fmoc-Phe(4-I)-OH, ≥98.0%

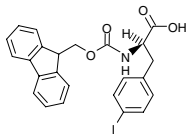
47431
$C_{24}H_{20}INO_4$
Mw 513.33
[82565-68-2]



1 g
5 g

Fmoc-D-Phe(4-I)-OH, ~98.0%

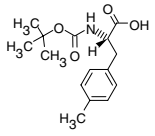
47770
$C_{24}H_{20}INO_4$
Mw 513.33



1 g
5 g

Boc-Phe(4-Me)-OH, ≥98.0%

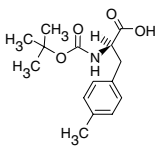
15006
$C_{15}H_{21}NO_4$
Mw 279.34
[80102-26-7]



1 g
5 g

Boc-D-Phe(4-Me)-OH, ≥98.0%

15003
$C_{15}H_{21}NO_4$
Mw 279.34
[80102-27-8]

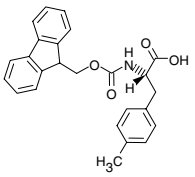


1 g
5 g

2.4 Para-Substituted Phenylalanines (continued)

Fmoc-Phe(4-Me)-OH, ≥98.0%

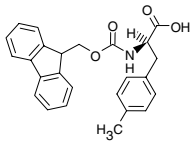
47823
$C_{25}H_{23}NO_4$
Mw 401.46
[199006-54-7]



1 g
5 g

Fmoc-D-Phe(4-Me)-OH, ≥98.0%

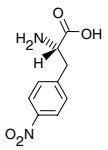
47821
$C_{25}H_{23}NO_4$
Mw 401.46
[204260-38-8]



1 g
5 g

H-L-Phe(4-NO_2)-OH · H_2O, ≥98.0%

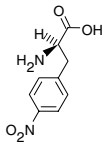
73615
$C_9H_{10}N_2O_4 \cdot H_2O$
Mw 228.20
[207591-86-4]



1 g
5 g

H-D-Phe(4-NO_2)-OH, hydrate, ≥99.0%

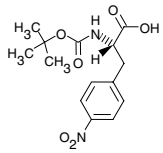
73611
$C_9H_{10}N_2O_4$
Mw 210.19
[56613-61-7]



1 g
5 g

Boc-Phe(4-NO_2)-OH, ~99%

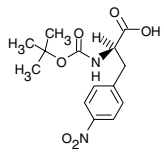
15348
$C_{14}H_{18}N_2O_6$
Mw 310.31
[33305-77-0]



1 g
5 g

Boc-D-Phe(4-NO_2)-OH, ≥98.0%

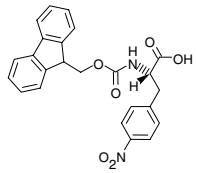
15174
$C_{14}H_{18}N_2O_6$
Mw 310.31
[61280-75-9]



1 g
5 g
25 g

Fmoc-Phe(4-NO_2)-OH, ~98%

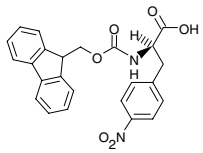
47472
$C_{24}H_{20}N_2O_6$
Mw 432.43
[95753-55-2]



1 g
5 g

Fmoc-D-Phe(4-NO_2)-OH, ≥98.0%

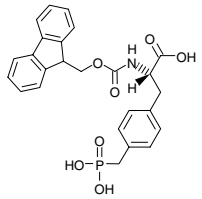
47434
$C_{24}H_{20}N_2O_6$
Mw 432.43
[177966-63-1]



1 g
5 g

Fmoc-4-(phosphonomethyl)-Phe-OH, ≥98.0%

09768
$C_{25}H_{24}NO_7P$
Mw 481.43
[229180-64-7]

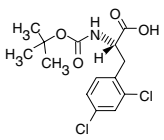


50 mg
250 mg

2.5 Di-Substituted Phenylalanines

Boc-Phe(2,4-Cl_2)-OH, ≥98.0%

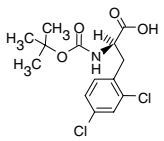
14992
$C_{14}H_{17}Cl_2NO_4$
Mw 334.2
[114873-04-0]



1 g
5 g

Boc-D-Phe(2,4-Cl_2)-OH, ≥98.0%

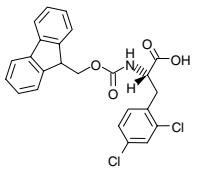
14991
$C_{14}H_{17}Cl_2NO_4$
Mw 334.2
[114873-12-0]



1 g
5 g

Fmoc-Phe(2,4-Cl_2)-OH, ≥98.0%

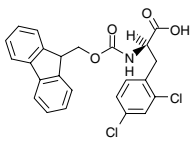
47809
$C_{24}H_{19}Cl_2NO_4$
Mw 456.33



1 g
5 g

Fmoc-D-Phe(2,4-Cl_2)-OH, ≥98.0%

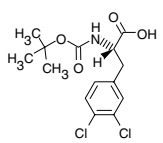
47808
$C_{24}H_{19}Cl_2NO_4$
Mw 456.33



1 g
5 g

Boc-Phe(3,4-Cl_2)-OH, ≥98.0%

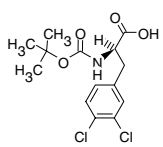
15042
$C_{14}H_{17}Cl_2NO_4$
Mw 334.2
[80741-39-5]



1 g
5 g

Boc-D-Phe(3,4-Cl_2)-OH, ≥98.0%

15041
$C_{14}H_{17}Cl_2NO_4$
Mw 334.2
[114873-13-1]



1 g
5 g

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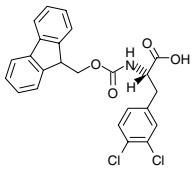
2.5 Di-Substituted Phenylalanines (continued)

Fmoc-Phe(3,4-Cl_2)-OH, ~98%

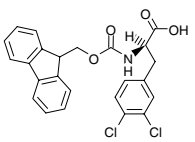
47426
$C_{24}H_{19}Cl_2NO_4$
Mw 456.33
[177966-59-5]



1 g
5 g

Fmoc-D-Phe(3,4-Cl_2)-OH, ~98%

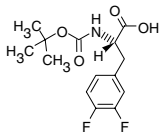
47425
$C_{24}H_{19}Cl_2NO_4$
Mw 456.33
[177966-58-4]



1 g
5 g

Boc-Phe(3,4-F_2)-OH, ≥98.0%

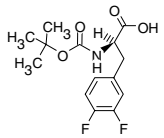
14994
$C_{14}H_{17}F_2NO_4$
Mw 301.29
[198474-90-7]



1 g
5 g

Boc-D-Phe(3,4-F_2)-OH, ≥98.0%

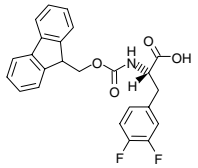
14993
$C_{14}H_{17}F_2NO_4$
Mw 301.29
[205445-51-8]



1 g
5 g

Fmoc-Phe(3,4-F_2)-OH, ≥98.0%

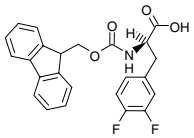
47813
$C_{24}H_{19}F_2NO_4$
Mw 423.42
[198560-43-9]



1 g
5 g

Fmoc-D-Phe(3,4-F_2)-OH, ≥98.0%

47812
$C_{24}H_{19}F_2NO_4$
Mw 423.42
[198545-59-4]



1 g
5 g

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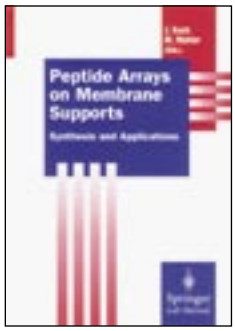

Z23,337-4 High-Performance Liquid Chromatography of Peptides: Separation, Analysis and Conformation
Mant, C.T. CRC Press: Boca Raton, FL, 1991. 960pp. Hardcover.

Z24,341-8 Introduction to Peptide Chemistry
Bailey, P.D. John Wiley & Sons: New York, 1992. 240pp. Soft cover.

Z26,967-0 Biologically Active Peptides: Design, Synthesis and Utilization
Williams, W. and D. Weiner, Eds. CRC Press: Boca Raton, FL, 1993. 360pp. Hardcover.

Z28,816-0 Combinatorial Peptide and Nonpeptide Libraries: A Handbook
Jung, G. John Wiley & Sons: New York, 1997. 545pp. Hardcover.

Z35,034-6 Practical Guide to Protein and Peptide Purification for Microsequencing
Matsudaira, P., Ed. Academic Press: New York, 1993. 184pp. Softcover.

Z36,931-4 New Methods in Peptide Mapping for the Characterization of Proteins
Hancock, W.S., Ed. CRC Press: Boca Raton, FL, 1996. 246pp. Hardcover.

Z42,426-9 Fmoc Solid Phase Peptide Synthesis: A Practical Approach
Chan, W. and P. White, Eds. Oxford University Press: New York, 2000. 376pp. Softcover.

Z70,021-5 Peptide Arrays on Membrane Supports: Synthesis and Applications
Koch, J. and M. Mahler, Eds. Springer-Verlag: New York, 2002. 220pp. Softcover.

P0868 Proteins, Peptides and Amino Acids SourceBook
White, J.S. and D.C. White. Humana Press: Totowa, NJ, 2002. 1080pp. Hardcover.

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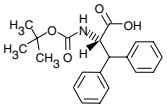
2.6 Other Phenylalanine-Derived Building Blocks

Boc-3,3-diphenyl-Ala-OH, ≥98.0%

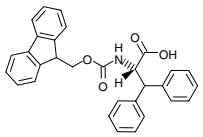
09896
$C_{20}H_{23}NO_4$
Mw 341.41
[138662-63-2]



250 mg
1 g

Fmoc-3,3-diphenyl-Ala-OH, ≥98.0%

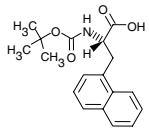
09895
$C_{30}H_{25}NO_4$
Mw 463.53
[201484-50-6]



250 mg
1 g

Boc-1-Nal-OH, ≥97.0%

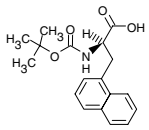
15347
$C_{18}H_{21}NO_4$
Mw 315.37
[55447-00-2]



1 g
5 g

Boc-D-1-Nal-OH, ≥98.0%

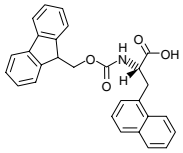
15045
$C_{18}H_{21}NO_4$
Mw 315.37
[76932-48-4]



1 g
5 g

Fmoc-1-Nal-OH, ≥98.0%

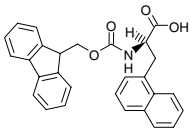
47433
$C_{28}H_{23}NO_4$
Mw 437.5
[96402-49-2]



1 g
5 g

Fmoc-D-1-Nal-OH, ≥98.0%

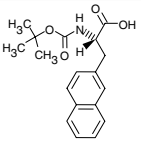
47432
$C_{28}H_{23}NO_4$
Mw 437.5
[138774-93-3]



1 g
5 g

Boc-2-Nal-OH, ≥97.0%

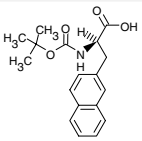
15483
$C_{18}H_{21}NO_4$
Mw 315.37
[58438-04-3]



1 g
5 g

Boc-D-2-Nal-OH, ≥97.0%

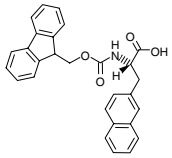
15478
$C_{18}H_{21}NO_4$
Mw 315.37
[76985-10-9]



1 g
5 g

Fmoc-2-Nal-OH, ≥98.0%

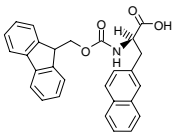
47772
$C_{28}H_{23}NO_4$
Mw 437.5
[112883-43-9]



1 g
5 g

Fmoc-D-2-Nal-OH, ≥98.0%

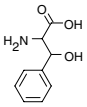
47471
$C_{28}H_{23}NO_4$
Mw 437.5
[138774-94-4]



1 g
5 g

3-Phenylserine · H_2O, ≥98.0%

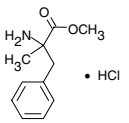
17,160-3
$C_9H_{11}NO_3 \cdot H_2O$
Mw 199.20
[69-96-5]



5 g
25 g
100 g

α-Methyl-DL-Phe-OMe · HCl, ≥98.0%

68628
$C_{11}H_{15}NO_2 \cdot HCl$
Mw 229.70
[64665-60-7]

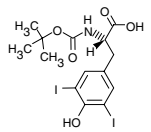


1 g

2.7 Ring-Substituted Tyrosines

Boc-Tyr(3,5-I_2)-OH, >98.0%

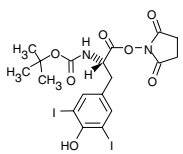
15092
$C_{14}H_{17}I_2NO_5$
Mw 533.1
[62129-53-7]



1 g
5 g

Boc-Tyr(3,5-I_2)-OSu, ≥97.0%

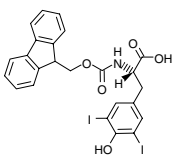
15093
$C_{18}H_{20}I_2N_2O_7$
Mw 630.17
[163679-35-4]



1 g
5 g

Fmoc-Tyr(3,5-I_2)-OH, >98.0%

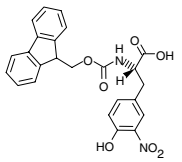
47457
$C_{24}H_{19}I_2NO_5$
Mw 655.23
[103213-31-6]



1 g
5 g

Fmoc-Tyr(3-NO_2)-OH, ≥98.0%

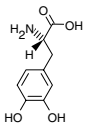
47780
$C_{24}H_{20}N_2O_7$
Mw 448.43
[136590-09-5]



1 g
5 g

H-3,4-Dihydroxy-L-Phe-OH, ≥99.0%

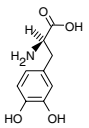
L-DOPA
37830
$C_9H_{11}NO_4$
Mw 197.19
[59-92-7]



5 g
25 g
100 g

H-3,4-Dihydroxy-D-Phe-OH, ≥98.0%

D-DOPA
37840
$C_9H_{11}NO_4$
Mw 197.19
[5796-17-8]

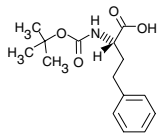


250 mg
1 g

2.8 Homophenylalanines

Boc-Homophe-OH, ≥98.0%

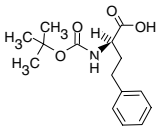
15469
$C_{15}H_{21}NO_4$
Mw 279.34
[100564-78-1]



1 g
5 g

Boc-D-Homophe-OH, ≥98.0%

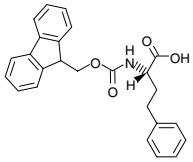
15043
$C_{15}H_{21}NO_4$
Mw 279.34
[82732-07-8]



1 g
5 g

Fmoc-Homophe-OH, ≥98.0%

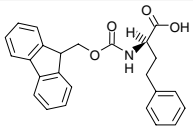
47430
$C_{25}H_{23}NO_4$
Mw 401.46
[132684-59-4]



1 g
5 g

Fmoc-D-Homophe-OH, ≥98.0%

47429
$C_{25}H_{23}NO_4$
Mw 401.46
[135944-09-1]



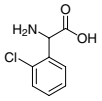
1 g
5 g

3. α-Phenylglycines

3.1 α-Phenylglycines

(±)-2-Chlorophenylglycine, ≥98.0% TLC

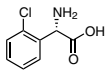
73187 NEW
$C_8H_8ClNO_2$
Mw 185.61
[88744-36-9]



25 g
100 g

L-(+)-2-Chlorophenylglycine, ≥95.0%

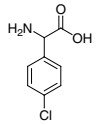
63,894-3 NEW
$C_8H_8ClNO_2$
Mw 185.61
[141315-50-6]



1 g
5 g

(±)-4-Chlorophenylglycine, ≥98.0% TLC

69171 NEW
$C_8H_8ClNO_2$
Mw 185.61
[6212-33-5]



25 g
100 g

(±)-2-(Trifluoromethyl)phenylglycine, ≥98.0% HPLC

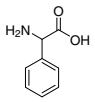
68648 NEW
$C_9H_8F_3NO_2$
Mw 219.16
[240490-00-0]

1 g

3.2 α-Phenylglycine Derivatives

H-DL-Phg-OH, ≥98.0%

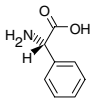
78580
$C_8H_9NO_2$
Mw 151.16
[2835-06-5]



100 g
500 g

H-L-Phg-OH, ≥99.0%

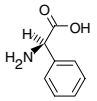
78565
$C_8H_9NO_2$
Mw 151.16
[2935-35-5]



25 g
100 g

H-D-Phg-OH, ≥99.0%

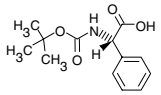
78570
$C_8H_9NO_2$
Mw 151.16
[875-74-1]



25 g
100 g

Boc-Phg-OH, ≥99.0%

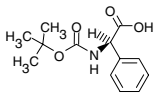
15488
$C_{13}H_{17}NO_4$
Mw 251.28
[2900-27-8]



1 g
5 g

Boc-D-Phg-OH, ≥99.0%

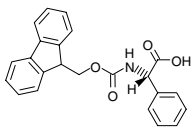
15487
$C_{13}H_{17}NO_4$
Mw 251.29
[33125-05-2]



1 g
5 g

Fmoc-Phg-OH, ≥98.0%

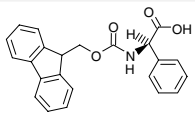
47531
$C_{23}H_{19}NO_4$
Mw 373.41
[102410-65-1]



1 g
5 g

Fmoc-D-Phg-OH, ≥98.0%

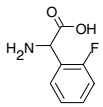
00211
$C_{23}H_{19}NO_4$
Mw 373.41
[111524-95-9]



1 g
5 g

H-2-Fluoro-DL-Phg-OH, ≥98.0%

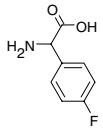
47353
$C_8H_8FNO_2$
Mw 169.15
[84145-28-8]



5 g

H-4-Fluoro-DL-Phg-OH, ≥98.0%

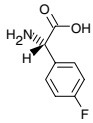
47358
$C_8H_8FNO_2$
Mw 169.15
[7292-73-1]



5 g

H-4-Fluoro-L-Phg-OH, ≥99.0%

47352
$C_8H_8FNO_2$
Mw 169.15
[19883-57-9]



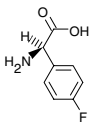
1 g
5 g

TO ORDER: Contact your local Sigma-Aldrich office (see back cover), call 1-800-558-9160 (USA), or visit sigma-aldrich.com.

3.2 α-Phenylglycine Derivatives (continued)

H-4-Fluoro-D-Phg-OH, ≥99.0%

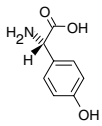
47355
$C_8H_8FNO_2$
Mw 169.15
[93939-74-3]



100 mg
1 g

H-4-Hydroxy-L-Phg-OH, ≥99.0%

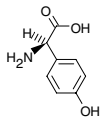
56160
$C_8H_9NO_3$
Mw 167.16
[32462-30-9]



10 g
50 g

H-4-Hydroxy-D-Phg-OH, ≥98.0%

56155
$C_8H_9NO_3$
Mw 167.16
[22818-40-2]

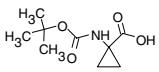


25 g
100 g

4. Selected Alicyclic α-Amino Acids

1-(Boc-amino)cyclopropane carboxylic acid, ≥98.0%

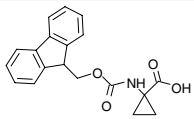
39977
$C_9H_{15}NO_4$
Mw 201.22
[88950-64-5]



250 mg
1 g

1-(Fmoc-amino)cyclopropane carboxylic acid, ~97%

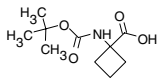
68822
$C_{19}H_{17}NO_4$
Mw 323.35
[126705-22-4]



250 mg
1 g

1-(Boc-amino)cyclobutane carboxylic acid, ≥98.0%

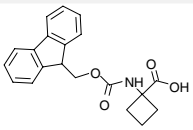
68823
$C_{10}H_{17}NO_4$
Mw 215.25
[120728-10-1]



500 mg

1-(Fmoc-amino)cyclobutane carboxylic acid, ~97%

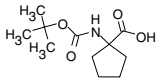
39978
$C_{20}H_{19}NO_4$
Mw 337.38



100 mg
500 mg

1-Boc-amino)cyclopentane carboxylic acid, ≥98.0%

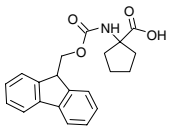
03583
$C_{11}H_{19}NO_4$
Mw 229.28
[35264-09-6]



1 g
5 g

1-(Fmoc-amino)cyclopentane carboxylic acid, ≥98.0%

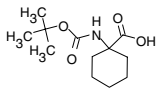
47512
$C_{21}H_{21}NO_4$
Mw 351.4
[117322-30-2]



1 g
5 g

1-(Boc-amino)cyclohexanecarboxylic acid, ≥98.0%

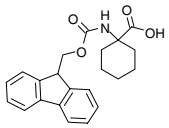
03582
$C_{12}H_{21}NO_4$
Mw 243.3
[115951-16-1]



1 g

1-(Fmoc-amino)cyclohexanecarboxylic acid, ≥98.0%

04061
$C_{22}H_{23}NO_4$
Mw 365.4
[162648-54-6]



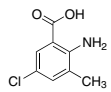
1 g
5 g

5. Amino Acids with Aromatic Spacers

5.1 Aromatic Amino Acids

2-Amino-5-chloro-3-methylbenzoic acid, 97.0%

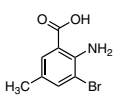
64,351-3 NEW
$C_8H_8ClNO_2$
Mw 185.61
[20776-67-4]



5 g
25 g

2-Amino-3-bromo-5-methylbenzoic acid, 97.0%

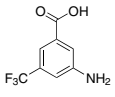
63,153-1 NEW
$C_8H_8BrNO_2$
Mw 230.06
[13091-43-5]



1 g
5 g

3-Amino-5-(trifluoromethyl) benzoic acid, 97.0%

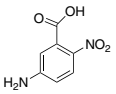
57,951-3 NEW
$C_8H_6F_3NO_2$
Mw 205.13
[328-68-7]



1 g

5-Amino-2-nitrobenzoic acid, 97.0%

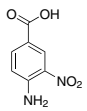
56,461-3 NEW
$C_7H_6N_2O_4$
Mw 182.13
[13280-60-9]



1 g
5 g

4-Amino-3-nitrobenzoic acid, 97.0%

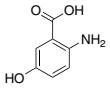
24,811-8 NEW
$C_7H_6N_2O_4$
Mw 182.13
[1588-83-6]



5 g
25 g

2-Amino-5-hydroxybenzoic acid, 99.0%

5-Hydroxyanthranilic acid
27,899-8 NEW
$C_7H_7NO_3$
Mw 153.14
[394-31-0]



1 g
5 g

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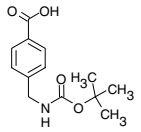
5.2 Aminobenzoic Acids (Abz) and (Aminomethyl)benzoic Acids (Amb)

4-(Boc-aminomethyl)benzoic acid, ≥98.0%

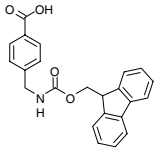
04060
$C_{13}H_{17}NO_4$
Mw 251.27
[33233-67-9]



1 g
5 g

4-(Fmoc-aminomethyl) benzoic acid, ≥98.0%

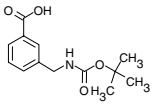
04062
$C_{23}H_{19}NO_4$
Mw 373.41
[164470-64-8]



1 g
5 g

3-(Boc-aminomethyl)benzoic acid, ~98%

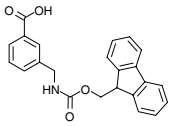
14971
$C_{13}H_{17}NO_4$
Mw 251.28
[117445-22-4]



1 g
5 g

3-(Fmoc-aminomethyl) benzoic acid, ≥98.0%

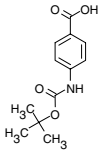
47974
$C_{23}H_{19}NO_4$
Mw 373.41
[155369-11-2]



1 g
5 g

Boc-4-Abz-OH, ≥98.0%

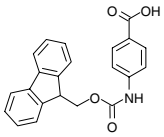
15299
$C_{12}H_{15}NO_4$
Mw 237.26
[66493-39-8]



1 g
5 g
50 g

Fmoc-4-Abz-OH, ~98%

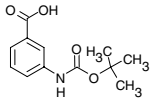
47307
$C_{22}H_{17}NO_4$
Mw 359.38
[185116-43-2]



1 g
5 g

Boc-3-Abz-OH, ≥97.0%

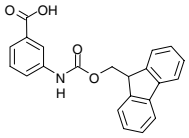
15298
$C_{12}H_{15}NO_4$
Mw 237.26
[111331-82-9]



10 g
50 g

Fmoc-3-Abz-OH, ≥98.0%

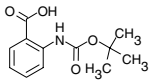
47952
$C_{22}H_{17}NO_4$
Mw 359.38
[185116-42-1]



500 mg
2.5 g

Boc-2-Abz-OH, ≥98.0%

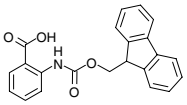
15297
$C_{12}H_{15}NO_4$
Mw 237.26
[68790-38-5]



10 g
50 g

Fmoc-2-Abz-OH, ≥98.0%

47996
$C_{22}H_{17}NO_4$
Mw 359.38
[150256-42-1]



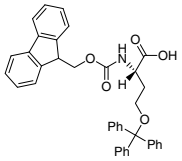
1 g
5 g

6. Other Building Blocks

6.1 Unnatural Amino Acids

Fmoc-Homoser(Trt)-OH, ≥98.0% HPLC

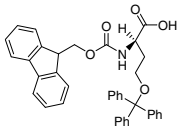
96744 NEW
$C_{38}H_{33}NO_5$
Mw 583.67
[111061-55-3]



1 g
5 g

Fmoc-D-Homoser(Trt)-OH, ≥98.0% HPLC

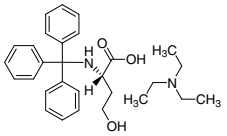
95727 NEW
$C_{38}H_{33}NO_5$
Mw 583.67
[257886-01-4]



1 g
5 g

N-Trityl-L-homoserine triethylamine salt, ≥98.0% TLC

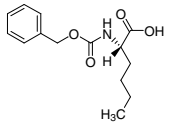
(S)-4-Hydroxy-2-(tritylamino)butyric acid triethylamine salt
73828 NEW
$C_{23}H_{23}NO_3 \cdot C_6H_{15}N$
Mw 462.62
[102056-97-3]



1 g
5 g

Z-Nle-OH, ≥98.0% HPLC

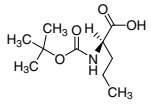
Z-L-norleucine
04527 NEW
$C_{14}H_{19}NO_4$
Mw 265.30
[39608-30-5]



1 g
5 g

Boc-D-Nva-OH, ≥98.0% TLC

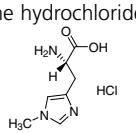
Boc-D-norvaline, *(R)*-2-(Boc-amino)pentanoic acid
12688 NEW
$C_{10}H_{19}NO_4$
Mw 217.26
[57521-85-4]



1 g
5 g

N^{τ}-Methyl-L-histidine hydrochloride, ≥98.0% TLC

3-(1-Methylimidazol-4-yl)-L-alanine hydrochloride
87932 NEW
$C_7H_{11}N_3O_2 \cdot HCl$
Mw 205.64
[200926-96-1]



500 mg

α-Azidoisobutyric acid, solution, purum, ~15% in n-heptane (T)

2-Azido-2-methylpropionic acid
52916 NEW
$C_4H_7N_3O_2$
Mw 129.12
[2654-97-9]

10 mL
50 mL

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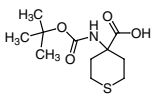
6.1 Unnatural Amino Acids (continued)

4-(Boc-amino)tetrahydrothiopyran-4-carboxylic acid, ≥95.0% C

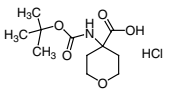
66381 NEW
$C_{11}H_{19}NO_4S$
Mw 261.34
[108329-81-3]



1 g

4-(Boc-amino)tetrahydropyran-4-carboxylic acid hydrochloride, > 95.0% HPLC

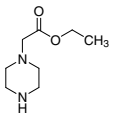
68039 NEW
$C_{11}H_{19}NO_5 \cdot HCl$
Mw 281.73



500 mg

Ethyl piperazinoacetate, ≥95.0% GC

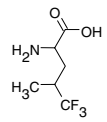
N-(Carboethoxymethyl)-piperazine, 1-(Ethoxycarbonylmethyl)piperazine
61897 NEW
$C_8H_{16}N_2O_2$
Mw 172.22
[40004-08-8]



5 g
25 g

5,5,5-Trifluoro-DL-leucine, ≥98.0% (HPLC, Sum of Isomers)

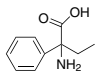
(±)2-Amino-4-(trifluoromethyl)pentanoic acid
91917 NEW
$C_6H_{10}F_3NO_2$
Mw 185.14



500 mg

2-Amino-2-phenylbutyric acid, 96.0%

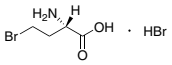
53,025-5 NEW
$C_{10}H_{13}NO_2$
Mw 179.22
[5438-07-3]



1 g
5 g

(S)-(+)-2-Amino-4-bromobutyric acid hydrobromide, 97.0%

47,698-6 NEW
$C_4H_8BrNO_2 \cdot HBr$
Mw 262.93
[15159-65-6]

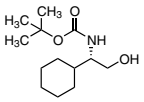


1 g

6.2 Amino Alcohols

N-Boc-L-cyclohexylglycinol, 98.0%

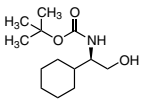
63,754-8 NEW
$C_{13}H_{25}NO_3$
Mw 243.34
[107202-39-1]



1 g
5 g

N-Boc-D-cyclohexylglycinol, 98.0%

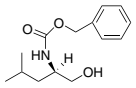
63,755-6 NEW
$C_{13}H_{25}NO_3$
Mw 243.34
[188348-00-7]



1 g
5 g

N-Z-D-Leucinol, 97.0%

55,429-4 NEW
$C_{14}H_{21}NO_3$
Mw 251.32
[166735-51-9]



1 g
5 g

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60,798-3	L-Glutamine-$^{13}C_5$, $^{15}N_2$
48,952-2	Glycine-$^{13}C_2$, ^{15}N
60,800-9	L-Histidine-$^{13}C_6$, $^{15}N_3$
60,809-2	L-Isoleucine-$^{13}C_6$, ^{15}N
60,806-8	L-Leucine-$^{13}C_6$, ^{15}N

Product No	Name
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60,813-0	L-Serine-$^{13}C_3$, ^{15}N
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