10 YEARS CELEBRATING

ADVENT CHEMBIO PVT. LTD.®

Fmoc Amino Acids and short Peptides from ADVENT : Advanced Building Blocks for Peptide Synthesis

Readily Available in Gram to Kg scale*:

Name of Fmoc Amino Acid	CAS No.
Fmoc-Asn-OH	71989-16-7
Fmoc-Phe-OH	35661-40-6
Fmoc-Pro-OH	71989-31-6
Fmoc-Gln-OH	71989-20-3
Fmoc-Gly-OH	29022-11-5
Fmoc-Ala-OH	35661-39-3
Fmoc-ß-Ala-OH	35737-10-1
Fmoc-Cys(Trt)-OH	103213-32-7
Fmoc-Gly-Gly-OH	35665-38-4
Fmoc-ß-Ala-Gly-OH	NA
Fmoc-ß-Ala-Cys(Trt)-OH	NA
Fmoc-Gly-Gly-Gly-OH	170941-79-4

* The list is not exhaustive and new Fmoc amino acids and short peptides are being added to the ever-expanding basket continually. Kindly send your queries to sales@adventchembio.com.

Made in INDIA

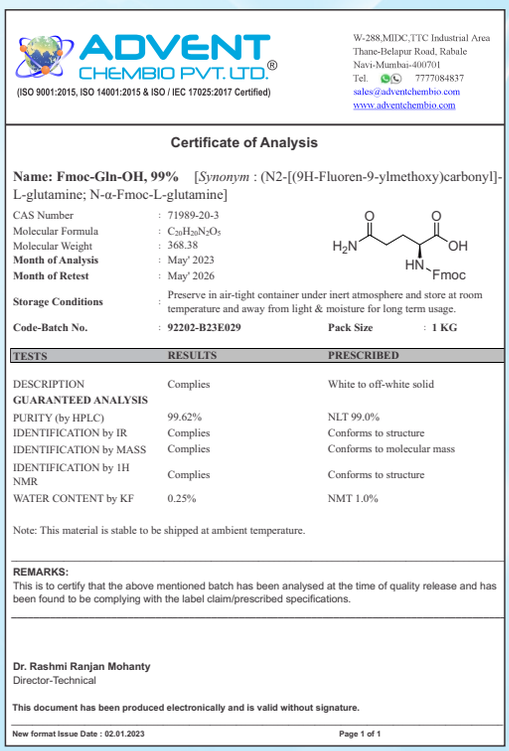
Salient Features

- Optimized synthetic processes for Highest Purity
- Characterized by analytical data such as Mass, IR, 1H NMR, SOR etc.
- Absence of related interfering & isomeric impurities
- Customized combinations of amino acids as per the end application
- Available in Gram to Kg scale

Benefits

- Characterization data make it easier for end users to verify the identity and purity of the products.
- Our customized Fmoc amino acids and short peptides help end users to plan for the synthesis of higher amino acids & peptides.
- The aromaticity of the Fmoc moiety in the products makes them useful for the development of fluorescent probes.
- Advent's Fmoc series are used in various applications like drug discovery, proteomics research and biochemical applications, like in peptide-based catalysts and bio-sensors etc..

  For example: Fmoc-Gln-OH (Fmoc-L-Glutamine) is one of the most commonly used basic building blocks for the synthesis of many peptide-based drug candidates.



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Navi-Mumbai-400701
Tel. 7777084837
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www.adventchembio.com

Certificate of Analysis

Name: Fmoc-Gln-OH, 99% [*Synonym* : (N2-[(9H-Fluoren-9-ylmethoxy)carbonyl]-L-glutamine; N-α-Fmoc-L-glutamine]

CAS Number : 71989-20-3
Molecular Formula : $C_{20}H_{20}N_2O_5$
Molecular Weight : 368.38
Month of Analysis : May' 2023
Month of Retest : May' 2026

Storage Conditions : Preserve in air-tight container under inert atmosphere and store at room temperature and away from light & moisture for long term usage.

Code-Batch No. : **92202-B23E029** **Pack Size** : **1 KG**

TESTS	RESULTS	PRESCRIBED
DESCRIPTION	Complies	White to off-white solid
GUARANTEED ANALYSIS		
PURITY (by HPLC)	99.62%	NLT 99.0%
IDENTIFICATION by IR	Complies	Conforms to structure
IDENTIFICATION by MASS	Complies	Conforms to molecular mass
IDENTIFICATION by 1H NMR	Complies	Conforms to structure
WATER CONTENT by KF	0.25%	NMT 1.0%

Note: This material is stable to be shipped at ambient temperature.

REMARKS:
This is to certify that the above mentioned batch has been analysed at the time of quality release and has been found to be complying with the label claim/prescribed specifications.

Dr. Rashmi Ranjan Mohanty
Director-Technical

This document has been produced electronically and is valid without signature.

New format issue Date : 02.01.2023 Page 1 of 1

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ART No.ACB/SD/8/111023-3/1

10 YEARS CELEBRATING

ADVENT CHEMBIO PVT. LTD.®

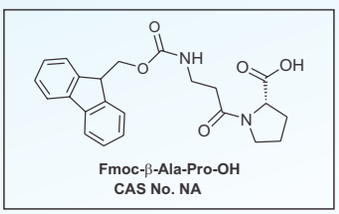
Working Standards for Amino Acids, their Fmoc & other derivatives and short Peptides

ADVENT CHEMBIO has a wide range of working standards of simple Amino Acids, their Boc/Fmoc/Cbz/Ester derivatives, and Fmoc-modified di- and tri-peptides etc. in its range to cater to their growing demands in Peptide Industry. These molecules, especially Fmoc amino acids & related peptides, possess eminent self-assembly features and have distinct potential applications due to their inherent hydrophobicity and aromaticity of Fmoc moiety, thus promoting the association of these bio-inspired building blocks.

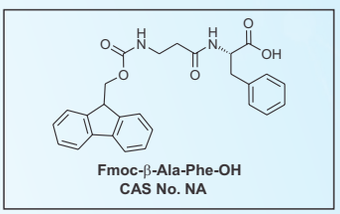
Benefits

- Thoroughly analysed for Highest Purity
- Characterized by analytical data such as Mass, IR, 1H NMR, SOR etc.
- Absence of related interfering & isomeric impurities
- Customized combination of amino acids as per the end application
- Available in mg to g scale

Structures of Some Representative Molecules:



Fmoc-β-Ala-Pro-OH
CAS No. NA



Fmoc-β-Ala-Phe-OH
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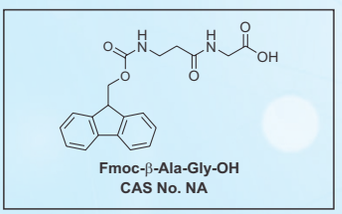

Fmoc-β-Ala-Gly-OH
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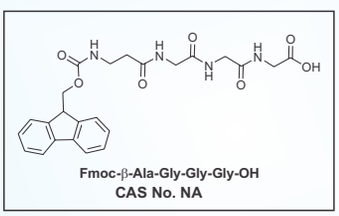
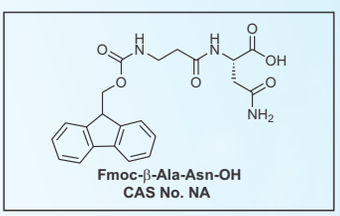
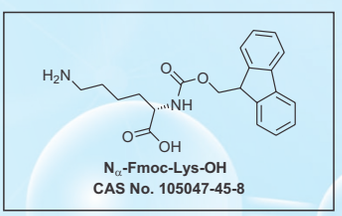


Fmoc-β-Ala-Gly-Gly-Gly-OH
CAS No. NA



Fmoc-β-Ala-Asn-OH
CAS No. NA



N_{α}-Fmoc-Lys-OH
CAS No. 105047-45-8

Readily Available in Mg to Gram scale*:

Name of Working Standard	CAS No.	Name of Working Standard	CAS No.
Fmoc-D-Phe-OH	86123-10-6	Fmoc-β-Ala-Gly-OH	NA
Fmoc-D-Glu-OtBu	109745-15-5	Fmoc-β-Ala-Pro-OH	NA
Fmoc-D-Lys(Mtt)-OH	198544-94-4	Fmoc-β-Ala-Gln-OH	NA
Fmoc-D-Asp(OtBu)-OH	112883-39-3	Fmoc-β-Ala-Asn-OH	NA
Fmoc-D-Glu(OtBu)-OH	104091-08-9	Fmoc-β-Ala-OH	35737-10-1
Fmoc-D-Ile-OH	143688-83-9	Fmoc-β-Ala-Phe-OH	NA
Fmoc-D-Arg(Pbf)-OH	187618-60-6	Fmoc-β-Ala-(Gly)3-OH	NA
Fmoc-D-Val-OH	84624-17-9	Fmoc-β-Ala-D-Ser(tBu)-OH	NA
Fmoc-D-Leu-OH	114360-54-2	Fmoc-β-Ala-Cys(Trt)-OH	NA
Fmoc-D-Trp(Boc)-OH	163619-04-3	Fmoc-β-Ala-Tyr(tBu)-OH	NA
Fmoc-D-Tyr(tBu)-OH	118488-18-9	Fmoc-β-Ala-Leu-OH	NA
Fmoc-D-Thr(tBu)-OH	138797-71-4	Fmoc-ß-Ala-Trp-OH	NA
Fmoc-D-Ser(tBu)-OH	128107-47-1	Fmoc-β-Ala-Tyr-OH	NA
Fmoc-D-Gln(Trt)-OH	200623-62-7	Fmoc-β-Ala-D-Leu-OH	NA
Fmoc-D-Tyr(Clt)-OH	1272755-49-3	Fmoc-(Gly)4-OH	NA
Fmoc-D-Ser-OH	116861-26-8	Fmoc-Gly-Gly-OH	35665-38-4
Fmoc-D-Allo-Ile-OH	118904-37-3	Fmoc-Allo-Thr(tBu)-OH	201481-37-0
Fmoc-D-Ala-OH	79990-15-1	Fmoc-Phe-Phe-OH	84889-09-8
Fmoc-Osu	82911-69-1	Fmoc-L-Cys(trt)-OH	103213-32-7
Fmoc-L-Phe-OH	35661-40-6	L-Proline	147-85-3

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Readily Available in Mg to Gram scale*:

Name of Working Standard	CAS No.	Name of Working Standard	CAS No.
Fmoc-Ser-OH	73724-45-5	L-Phenylalnine	63-91-2
Fmoc-His-OH	116611-64-4	L-Leuine	61-90-5
Fmoc-Cys-OH	135248-89-4	L-Tryptophan	73-22-3
Fmoc-Lys-OH	105047-45-8	D-Tryptophan	153-94-6
Fmoc-4F-Phe-OH	169243-86-1	D-Tyrosine	556-02-5
Fmoc-AEEA-AEEA-OH	560088-89-3	D-Prolinamide	62937-45-5
Fmoc-AEEA-OH	166108-71-0	L-Prolinamide	7531-52-4
Fmoc-Aib-OH	94744-50-0	D-2-Aminobutyric acid	2623-91-8
Fmoc-Asp-NH2	200335-40-6	D-Pyroglutamic acid	4042-36-8
Fmoc-Asp-OtBu	129460-09-9	D-(+)-Cystine	349-46-2
Fmoc-D-3-Pal-OH	142994-45-4	D-(+)-Lysine	923-27-3
Fmoc-D-Allo-Thr(tBu)-OH	170643-02-4	D-(+)-Threonine	632-20-2
Fmoc-D-Cit-OH	200344-33-8	D-Alanine	338-69-2
Fmoc-D-Cys(Trt)-OH	167015-11-4	D-Arginine	157-06-2
Fmoc-D-Leu-D-Leu-OH	NA	D-Aspartic acid	1783-96-6
Fmoc-D-Lys(Alloc)-OH	214750-75-1	D-Glutamic acid	6893-26-1
Fmoc-D-Pro-OH	101555-62-8	D-Histidine	351-50-8
Fmoc-Gly-Gly-Gly-OH	170941-79-4	D-Isoleucine	319-78-8
Fmoc-L-Allo-Isoleucine	251316-98-0	D-Leucine	328-38-1
Fmoc-L-Glu-OH	121343-82-6	D-Methionine	348-67-4
Fmoc-L-Glu-OtBu	84793-07-7	D-Phenylalanine	673-06-3
Fmoc-L-His(Mmt)-OH	133367-33-6	D-Proline	344-25-2
Fmoc-L-norvaline/Fmoc-Nva-OH	135112-28-6	D-Serine	312-84-5
Fmoc-Lys(Alloc)-OH	146982-27-6	D-Valine	640-68-6
Fmoc-Lys(Fmoc)-OH	78081-87-5	H-AEEA-OH	134978-97-5
Fmoc-NH2 [Fmoc-Amide]	84418-43-9	H-Aib-OH	62-57-7
Fmoc-Tyr(Me)-OH	77128-72-4	H-Asn(Trt)-OH	132388-58-0
Fmoc-Tyr-OH, 98%	92954-90-0	H-Glu-OH	56-86-0
Fmoc-Lys(Boc)-OH	71989-26-9	H-Glu-OtBu	45120-30-7
(Fmoc-Cys-OH)2	135273-01-7	H-Gly-Gly-OH	556-50-3
Alloc-Lys(Alloc)-OH	NA	H-HYP-OH	51-35-4
Alloc-Lys(Fmoc)-OH	186350-56-1	H-Lys(Alloc)-OH	6298-03-9
Boc-D-Phe-OH	18942-49-9	H-Lys-OH. HCl	657-27-2
N-Boc-Tyr-Clt-OH	NA	H-Oic-OH	80828-13-3
Boc-D-Aph(Cbm-tBu)-OH	324017-19-8	H-Thi-OH	22951-96-8
Boc-Ala-Ala-OH	27317-69-7	H-Trp(Boc)-OH	146645-63-8
Boc-D-Tyr(tBu)-OH	507276-74-6	H-Tyr(Clt)-OH	NA
Boc-Trp(Boc)-OH	144599-95-1	H-Tyr(OMe)-OH, 98%	6230-11-1
Boc-Tyr(tBu)-OH	47375-34-8	H-Tyr(tBu)-OH, 98%	18822-59-8
Boc-Tyr-OH	3978-80-1	H-His(mmt)-OH	NA
Boc-D-His(Trt)-OH	393568-74-6	L-Arginine	74-79-3
ß-alanine {3-aminopropionic acid}	107-95-9	L-Glutamine	56-85-9
L-Ornithine Monohydrochloride	3184-13-2	L-Isoleucine	73-32-5
5-Benzyl-D-glutamate	2578-33-8	Z-Glu-OtBu	5891-45-2
5-Benzyl-L-glutamate	1676-73-9	Z-Tyr(tBu)-OH.DCHA	16879-90-6
3,4-Dihydroxy-D-phenylalanine	5796-17-8	4-Hydroxy-L-(+)-2-phenylglycine	32462-30-9
3,4-Dihydroxy-L-phenylalanine	59-92-7	(+)-S-Trityl-L-Cysteine	2799-07-7
3-(3,4-Dimethoxy)-L-phenylalanine	32161-30-1		

* The list is not exhaustive and new Fmoc amino acids and short peptides are being added to the ever-expanding basket continually.

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N-Nitrosamine Impurities in ADVENT range

We, at the ADVENT, have been able to develop and service the following N-Nitrosamine impurities as standards to our esteemed customers for their quantitative evaluation in respective drug compounds.

- N-Nitrosamines are potential genotoxic compounds/carcinogens.
- Studies show that they can cause DNA mutation and cancer due to their presence in drugs.
- USA FDA and EMA recalled some Sartan group of drugs in July 2018 due to the presence of a Nitrosamine i.e., NDMA (N-Nitrosodimethylamine).
- Many of such Nitrosamines have been added to the list of carcinogens since then.
- Both regulatory agencies have issued guidelines on the allowable limits of Nitrosamines to ensure safety of the drugs.

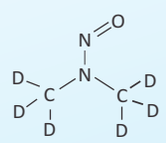
Following N-Nitrosamine Impurities are in Ready Stock*:

Product Name	CAS No.
N-Nitrosodimethylamine (NDMA)	62-75-9
N-Nitrosodiethylamine (NDEA)	55-18-5
N-Nitrosodiisopropylamine (NDIPA)	601-77-4
N-Nitrosoethylisopropylamine (NEIPA)	16339-04-1
N-Nitrosodi-n-propylamine (NDPA)	621-64-7
N-Nitrosomethylethylamine (NMEA)	10595-95-6
N-Nitrosodimethylamine-d6 (NDMA-d6)	17829-05-9
N-Nitroso-N-ethylaniline (NENA)	612-64-6
N-Nitrosomorpholine (NMOR)	59-89-2
N-Nitroso-N-methyl-4-aminobutyric Acid (NMBA)	61445-55-4
N-Nitrosomethyisopropylamine(NMIPA)	30533-08-5
N-Nitrosodiisobutylamine (NDIBA)	997-95-5
N-Nitrosodibenzylamine (NDBzA)	5336-53-8
N-Nitroso-N-methylaniline (NMA)	614-00-6
1-Methyl-4-Nitrosopiperazine (M4NP)	16339-07-4
N-Nitrosodiethanolamine (NDELA)	1116-54-7
N-Nitrosomeglumine (1-Deoxy-1-(methylnitrosamino)-D-glucitol)	10356-92-0
N-Nitroso-N-methylbutylamine (Methylbutylnitrosamine)	7068-83-9
N-Nitroso-N-methylcyclohexylamine (NMC)	5432-28-0
N-Nitrosopiperazine (NPZ)	5632-47-3
N-Nitrosodiphenylamine (NDPhA)	86-30-6
N-Nitrosodi-n-butylamine (NDBA)	924-16-3
N-Nitrosopyrrolidine (NPYR)	930-55-2
N-Nitrosopiperidine (NPIP)	100-75-4
1-Cyclopentyl-4-nitrosopiperazine	61379-66-6

Product Name	CAS No.
N-Methyl-N-(p-tolyl)nitrousamide [N-Methyl-N-nitroso-p-toluidine]	937-24-6
Nitrosobis(2-chloroethyl)amine [bis(2-chloroethyl)(nitroso)amine]	67856-68-2
N-Nitrosodiethylamine-d10 (NDEA-d10)	1219794-54-3
N-Nitroso-L-proline (NLP)	7519-36-0
Methyl Nitroso-L-prolinate	35909-01-4
N-Nitroso-L-prolinamide [(S)-1-Nitrosopyrrolidine-2-Carboxamide]	79108-51-3
Nitrosobumetanide	2490432-02-3
N-Nitrosomefenamic acid	2114-63-8
N-Nitrosolosartan	NA
N-Nitrosovalsartan	NA
N-Nitrosovildagliptin	NA
N-Nitrosociprofloxacin	864443-44-7
N-Nitrososalbutamol	NA
N-Nitrosoazilsartan	NA
N-Nitrosotheophylline	NA
7-Nitroso-3-(trifluoromethyl)-5,6,7,8-tetrahydro [1,2,4]triazolo[4,3-a]pyrazine (NTTP)	NA
Nitroso derivative of Carvediol D {51997-51-4}	NA
Nicardipine Nitroso Impurity	NA
N-Nitrosopropranolol	84418-35-9
N-Nitrosotamsulosin	2892260-31-8
N-Nitroso-N-methylbenzylamine	937-40-6
N-Nitroso 4-aminobenzoic acid	91673-51-7
N-Nitroso Phenylephrine	78658-64-7

* The list is not exhaustive; new Nitrosamine are being added to the list continually. Kindly send your queries to sales@adventchembio.com.

Structures and CAS numbers of same representative Nitrosamines are given below: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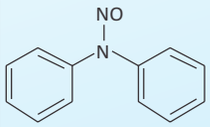
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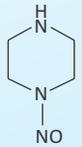
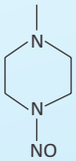

NPZ, 5632-47-3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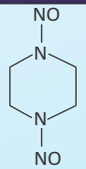
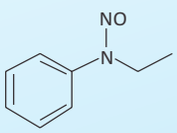
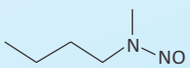
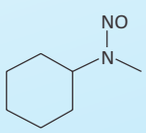
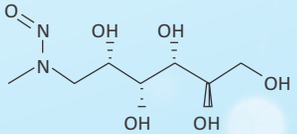

DNP, 140-79-4


NENA, 612-64-6


MBN, 7068-83-9


NMC, 5432-28-0


NMG, 10356-92-0

Salient Features of ADVENT Nitrosamines:

- Available in high purity
- Ready stock
- Customized packs from mg to gram scale
- CoA is provided along with all characterization data such as Mass, IR, 1H NMR and 13C NMR etc.

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