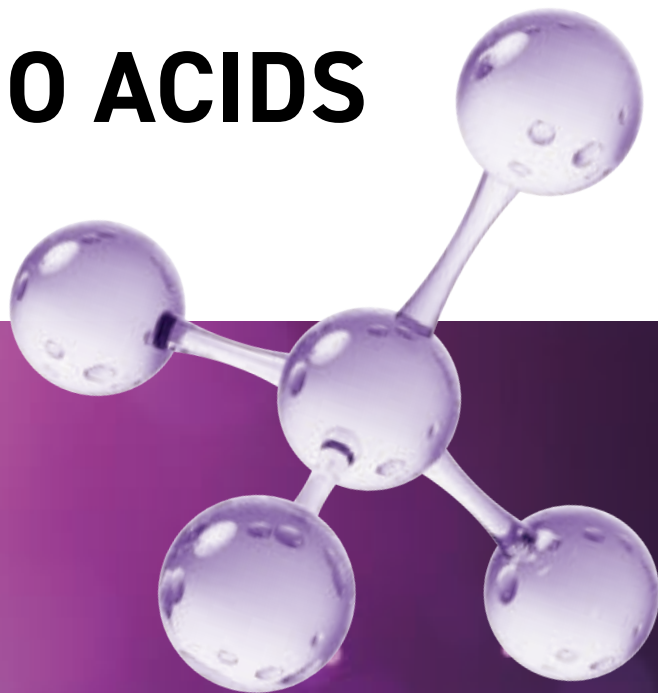


UNNATURAL AMINO ACIDS

CATALOGUE [6th Edition]



KISHIDA CHEMICAL CO.,LTD.

General-purpose reagents and solvents used in peptide synthesis

KISHIDA CHEMICAL sells general-purpose reagents and solvents used in peptide synthesis.
Please feel free to email us with questions about sales volume and price.
shiyaku@kishida.co.jp

Chemical name	Abbreviation	Classification	CAS RN®	
(1-Cyano-2-ethoxy-2-oxoethylidenaminoxy)dimethylaminomorpholinocarbenium Hexafluorophosphate	COMU	Condensation Reagent	1075198-30-9	
1-[Bis(dimethylamino)methylene]-1 <i>H</i> -1,2,3-triazolo[4,5- <i>b</i>]pyridinium 3-Oxide Hexafluorophosphate	HATU		148893-10-1	
<i>N,N'</i> -Diisopropylcarbodiimide	DIC		693-13-0	
Ethyl Cyano(hydroxyimino)acetate	Oxyma		3849-21-6	
1-Hydroxy-7-azabenzotriazole	HOAt		39968-33-7	
<i>N</i> -Hydroxysuccinimide	HOSu	Activator	6066-82-6	
4-Dimethylaminopyridine	DMAP		1122-58-3	
<i>tert</i> -Butyl Methyl Ether	MTBE	Solvent	1634-04-4	
Diisopropyl Ether	IPE		108-20-3	
Dimethyl Sulfoxide	DMSO		67-68-5	
<i>N,N</i> -Dimethylformamide	DMF		68-12-2	
<i>N,N</i> -Dimethylacetamide	DMA		127-19-5	
<i>N</i> -Methyl-2-pyrrolidone	NMP		872-50-4	
Acetonitrile	MeCN		75-05-8	
2-Propanol	IPA		67-63-0	
Methanol	MeOH		67-56-1	
Dichloromethane	-		75-09-2	
Toluene	-		108-88-3	
Heptane	-		142-82-5	
DL-Dithiothreitol	DTT		Reagent	3483-12-3
1,1,1,3,3,3-Hexafluoro-2-propanol	HFIP			920-66-1
1,4-Dithioerythritol	DTE			6892-68-8
3,6-Dioxa-1,8-octanedithiol	DODT	14970-87-7		
Thioanisole	-	100-68-5		
Piperidine	-	110-89-4		
<i>N,N</i> -Diisopropylethylamine	DIPEA	7087-68-5		
Triethylamine	-	121-44-8		
1,8-Diazabicyclo[5.4.0]-7-undecene	DBU	6674-22-2		
Sodium Hydroxide (10 mol/L in Water)	-	1310-73-2		
10% Hydrochloric Acid	-	7647-01-0		
Trifluoroacetic Acid	TFA	76-05-1		
Chloroacetic Acid	-	79-11-8		
Acetic Acid	-	64-19-7		
Acetic Anhydride	-	108-24-7		
Phosphoric Acid	-	7664-38-2		
Palmitic Acid 98%	-	57-10-3		
Ammonia Solution (28% in Water)	-	1336-21-6		
Ammonium Acetate	-	631-61-8		
Ammonium Hydrogencarbonate	-	1066-33-7		
Triisopropylsilane	TIS	6485-79-6		

In the publication of the 6th edition of the Catalogue of Unnatural Amino Acids

Thank you for your continued patronage of KISHIDA CHEMICAL products.

KISHIDA CHEMICAL CO.,LTD. has patented Maruoka Catalyst®, an asymmetric phase transfer catalyst developed by Professor Maruoka, Kyoto University, for the production of optically active amino acids, and provides various unnatural α -amino acids with an unnatural substituent or substitution style in a high-quality.

This time, the 6th edition of the Catalogue of Unnatural Amino Acids with new products and volumes of products has been published.

In life science research including drug discovery research, our unnatural amino acids have the potential to improve drug efficacy, metabolic stability, water solubility, and other properties.

We look forward to your continued support.

Update from the 5th Edition of the Catalogue of Unnatural Amino Acids

- **Started marketing of new products (expressed as New)**
- **Volumes (100 mg) of products (expressed as New Vol.)**
- **Bundle sales of unnatural amino acids**
 - **Kishida Products** 100 mg each × 10 **JPY 120,000**
 - **Kishida Products** 100 mg each × 20 **JPY 200,000**
 - **PEPTIDREAM Products** 100 mg each × 5 **JPY 120,000**

Apr. 2024 KISHIDA CHEMICAL CO.,LTD.

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Bundle sales of unnatural amino acids

Kishida original unnatural amino acids Library in the catalogs has sold in bundle of 100 mg each.

Available bundles of unnatural amino acids

① Kishida Products	100 mg each × 10	JPY 120,000
② Kishida Products	100 mg each × 20	JPY 200,000
③ PEPTIDREAM Products	100 mg each × 5	JPY 120,000

Examples) ① Kishida products (100 mg × 10)

- Kishida Product A 100 mg × 5
- Kishida Product B 100 mg × 3
- Kishida Product C 100 mg × 2

Acceptable in any combination

Please contact us when other types of bundle are required.

Contact: shiyaku@kishida.co.jp

Unnatural Amino Acids Contract Synthesis

Is there any problem in life science research, including peptide drug discovery?

While the active pocket is known, the existing amino acid parts do not match well.

Poor physical properties such as solubility and desire to introduce a water-soluble substituent, but a suitable amino acid cannot be found.

It was metabolically unstable, but the drug's efficacy was not improved or disappeared when it was replaced by existing amino acids.

The introduction of racemic unnatural amino acids gave good results, but no optically active compounds are available.



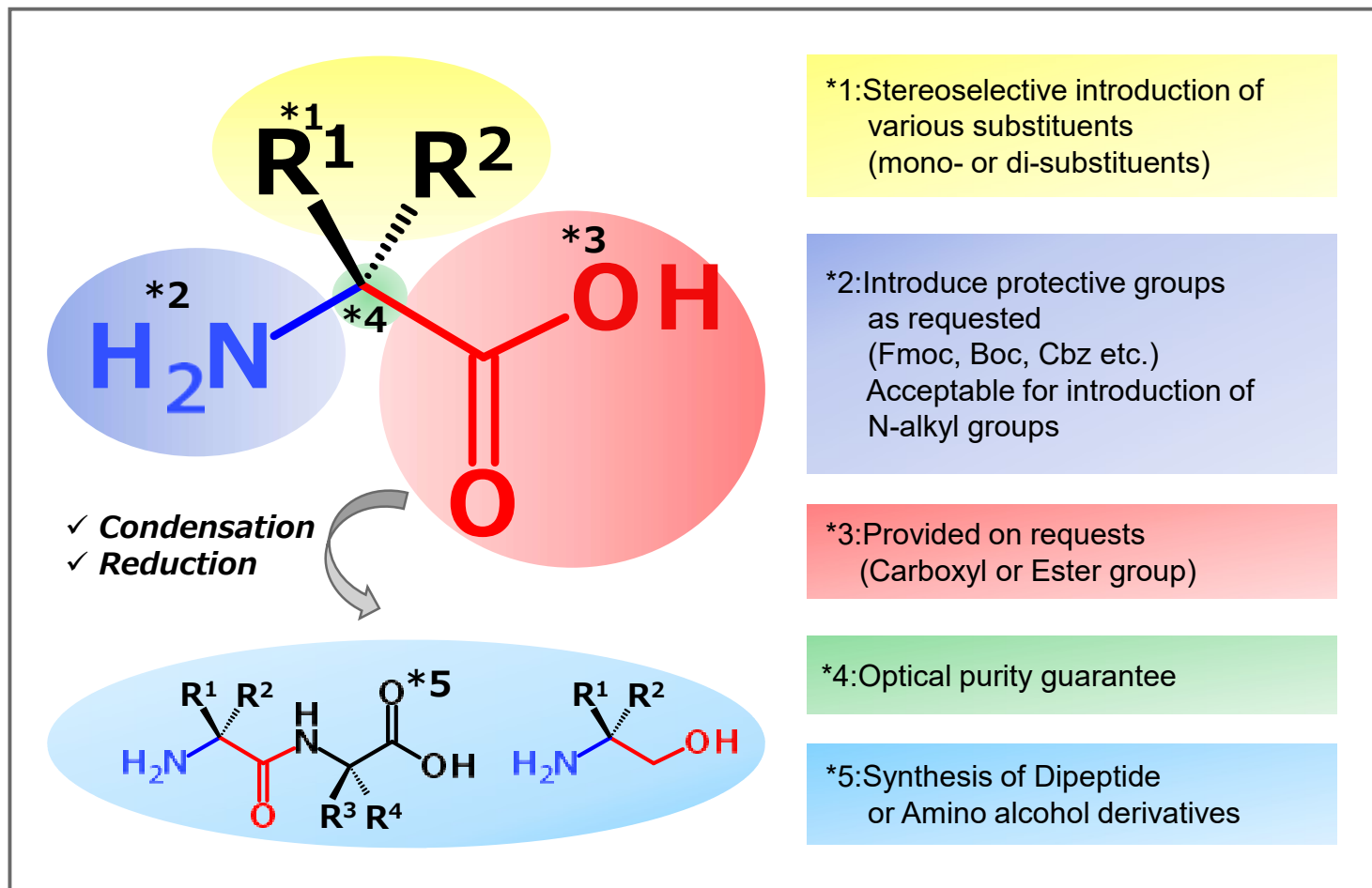
**If you need
any information,**



**Who are you gonna call?
KISHIDA CHEMICAL!**

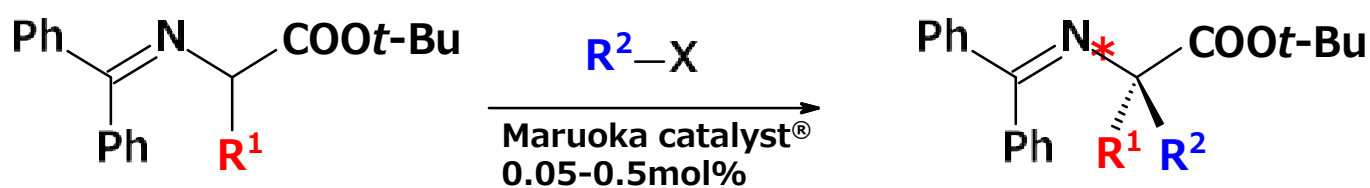
Unnatural amino acids contract synthesis in KISHIDA CHEMICAL

- We will make a custom synthesis of the proposed new amino acids. (Synthesis under confidentiality agreement is also acceptable.)
- Steadily accumulate success cases, including those in the development stage and those for patent applications.



KISHIDA CHEMICAL has obtained a substance patent, trade and α -amino acid process patent of Maruoka Catalyst[®], developed by Professor Keiji Maruoka of Kyoto University.

By using this catalyst, highly stereoselective substituents can be introduced at the amino acid α -position, and which allows us to offer a variety of unnatural amino acids.



Reference:

Ooi, T.; Kameda, M. and Maruoka, K. *J. Am. Chem. Soc.* **2003**, 125, 5139-5151.

Ooi, T.; Kameda, M.; Tannai, H. and Maruoka, K. *Tetrahedron Lett.* **2000**, 41, 8339-8342.

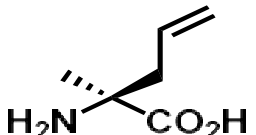
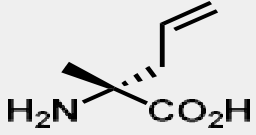
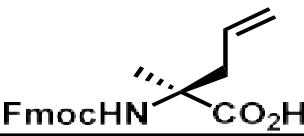

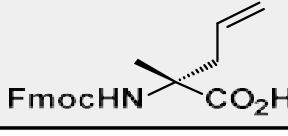

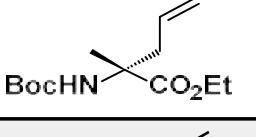
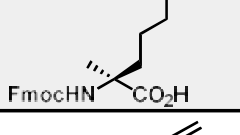
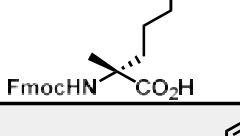
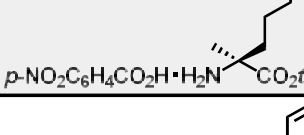
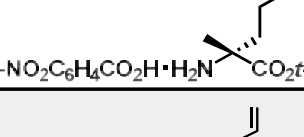
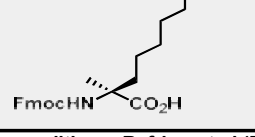
Ooi, T.; Takeuchi, M. and Maruoka, K. *Synthesis* **2001**, 1716-1718.

Maruoka, K. *Org. Process Research & Development* **2008**, 12, 679-687.

Maruoka Catalyst is a registered trademark of KISHIDA CHEMICAL in Japan.

Maruoka Catalyst is a domestic and U.S., United Kingdom, Swiss, and French registered brand of KISHIDA CHEMICAL.

Reactive Amino Acids (α -Alkenyl or α -Alkynyl Alanines and Glycines)

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code		Comments
	CAS RN®					Sales price JPY ¥		
α-AlkenylAla								
	(S)- α -Allylalanine·H ₂ O	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₆ H ₁₁ NO ₂ ·H ₂ O (147.17)	100 mg	KUA-00019	New Vol.	
	96886-55-4				1 g	KUA-00011		
						30,000		
	(R)- α -Allylalanine·H ₂ O	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₆ H ₁₁ NO ₂ ·H ₂ O (147.17)	100 mg	KUA-00029	New Vol.	
	96886-56-5				1 g	KUA-00021		
						30,000		
	(S)-N-Fmoc- α -Allylalanine	≥ 98.0% ≥ 98.0% ^{ee}	F 	C ₂₁ H ₂₁ NO ₄ (351.40)	(NET) 100 mg	KUA-00039	New Vol.	
	288617-71-0				(NET) 500 mg	KUA-00034		
					(NET) 1 g	KUA-00031		
		55,000						
	(R)-N-Fmoc- α -Allylalanine	≥ 98.0% ≥ 98.0% ^{ee}	F 	C ₂₁ H ₂₁ NO ₄ (351.40)	(NET) 100 mg	KUA-00049	New Vol.	
	288617-76-5				(NET) 500 mg	KUA-00044		
					(NET) 1 g	KUA-00041		
		55,000						
	(R)-N-Boc- α -Allylalanine ethyl ester	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₁₃ H ₂₃ NO ₄ (257.33)	100 mg	KUA-00059	New Vol.	
	1263046-12-3				1 g	KUA-00051		
						50,000		
	(S)-N-Fmoc- α -(4-Pentenyl)alanine	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₂₃ H ₂₅ NO ₄ (379.46)	(NET) 100 mg	KUA-00069	New Vol.	
	288617-73-2				(NET) 1 g	KUA-00061		
					(NET) 5 g	KUA-00065		
		150,000						
	(R)-N-Fmoc- α -(4-Pentenyl)alanine	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₂₃ H ₂₅ NO ₄ (379.46)	(NET) 100 mg	KUA-00079	New Vol.	
	288617-77-6				(NET) 1 g	KUA-00071		
					(NET) 5 g	KUA-00075		
		150,000						
	(S)- α -(4-Pentenyl)alanine <i>tert</i> -butyl ester <i>p</i> -Nitrobenzoate	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₁₂ H ₂₃ NO ₂ · C ₇ H ₅ NO ₄ (380.44)	100 mg	KUA-00089	New Vol.	
	1323987-70-7				1 g	KUA-00081		
					5 g	KUA-00085		
		112,000						
	(R)- α -(4-Pentenyl)alanine <i>tert</i> -butyl ester <i>p</i> -Nitrobenzoate	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₁₂ H ₂₃ NO ₂ · C ₇ H ₅ NO ₄ (380.44)	100 mg	KUA-00099	New Vol.	
	1323987-68-3				1 g	KUA-00091		
					5 g	KUA-00095		
		112,000						
	(S)-N-Fmoc- α -(7-Octenyl)alanine	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₂₆ H ₃₁ NO ₄ (421.54)	(NET) 100 mg	KUA-00109	New Vol.	
	288617-75-4				(NET) 500 mg	KUA-00104		
					(NET) 1 g	KUA-00101		
					(NET) 5 g	KUA-00105		
		160,000						

* Storage conditions: Refrigerated (R) 5°C, Freezed (F) -20°C

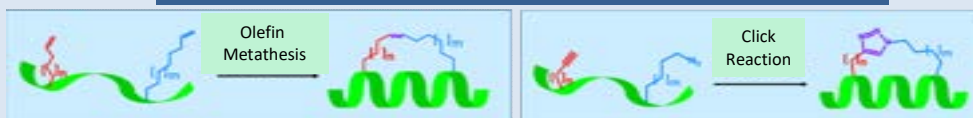
Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	(R)-N-Fmoc-α-(7-Octenyl)alanine 945212-26-0	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₂₆ H ₃₁ NO ₄ (421.54)	(NET) 100 mg	KUA-00119 19,000	← New Vol. Containing 10-40% Methyl tert-butyl ether
					(NET) 500 mg	KUA-00112 40,000	
					(NET) 1 g	KUA-00111 55,000	
					(NET) 5 g	KUA-00115 160,000	
	(S)-α-(7-Octenyl)alanine tert-butyl ester p-Nitrobenzoate 1375908-92-1	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₁₅ H ₂₉ NO ₂ ·C ₇ H ₅ NO ₄ (422.52)	100 mg	KUA-00129 18,000	← New Vol.
					1 g	KUA-00121 50,000	
					5 g	KUA-00125 120,000	
	(R)-α-(7-Octenyl)alanine tert-butyl ester p-Nitrobenzoate 1375904-22-5	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₁₅ H ₂₉ NO ₂ ·C ₇ H ₅ NO ₄ (422.52)	100 mg	KUA-00139 18,000	← New Vol.
					1 g	KUA-00131 50,000	
					5 g	KUA-00135 120,000	
α-AlkynylAla							
	(S)-α-Propargylalanine 1231709-27-5	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₆ H ₉ NO ₂ (127.14)	100 mg	KUA-00149 19,000	← New Vol.
					1 g	KUA-00141 25,000	
	(R)-α-Propargylalanine 403519-98-2	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₆ H ₉ NO ₂ (127.14)	100 mg	KUA-00159 19,000	← New Vol.
					1 g	KUA-00151 25,000	
	(S)-N-Fmoc-α-Propargylalanine 1198791-58-0	≥ 98.0% ≥ 98.0% ^{ee}	F	C ₂₁ H ₁₉ NO ₄ (349.39)	(NET) 100 mg	KUA-00169 20,000	← New Vol. Containing 20-50% Methyl tert-butyl ether
					(NET) 1 g	KUA-00161 45,000	
	(R)-N-Fmoc-α-Propargylalanine 1198791-65-9	≥ 98.0% ≥ 98.0% ^{ee}	F	C ₂₁ H ₁₉ NO ₄ (349.39)	(NET) 100 mg	KUA-00179 20,000	← New Vol. Containing 20-50% Methyl tert-butyl ether
					(NET) 1 g	KUA-00171 45,000	
	(S)-N-Fmoc-α-(4-Pentynyl)alanine 1050501-65-9	≥ 98.0% ≥ 98.0% ^{ee}	F	C ₂₃ H ₂₃ NO ₄ (377.44)	(NET) 100 mg	KUA-00189 21,000	← New Vol. Containing 20-50% Methyl tert-butyl ether
					(NET) 500 mg	KUA-00184 43,000	
					(NET) 1 g	KUA-00181 60,000	
					(NET) 5 g	KUA-00185 180,000	
	(R)-N-Fmoc-α-(4-Pentynyl)alanine 1198791-56-8	≥ 98.0% ≥ 98.0% ^{ee}	F	C ₂₃ H ₂₃ NO ₄ (377.44)	(NET) 100 mg	KUA-00199 21,000	← New Vol. Containing 20-50% Methyl tert-butyl ether
					(NET) 500 mg	KUA-00194 43,000	
					(NET) 1 g	KUA-00191 60,000	
					(NET) 5 g	KUA-00195 180,000	
	(R)-N-Fmoc-α-(5-Hexynyl)alanine 1198791-69-3	≥ 98.0% ≥ 98.0% ^{ee}	F	C ₂₄ H ₂₅ NO ₄ (391.47)	(NET) 100 mg	KUA-00209 21,000	← New Vol. Containing 5-40% Methyl tert-butyl ether
					(NET) 250 mg	KUA-00207 44,000	
					(NET) 1 g	KUA-00201 85,000	
					(NET) 5 g	KUA-00205 275,000	

* Storage conditions: Refrigerated (R) 5°C, Frozen (F) -20°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY¥	
α-AlkenylGly							
	(S)-α-Allylglycine	≥ 98.0% ≥ 98.0%ee	R	C ₅ H ₉ NO ₂ (115.13)	100 mg	KUA-00219 18,000	← New Vol.
	16338-48-0				5 g	KUA-00215 45,000	
	(R)-α-Allylglycine	≥ 98.0% ≥ 98.0%ee	R	C ₅ H ₉ NO ₂ (115.13)	100 mg	KUA-00229 18,000	← New Vol.
	54594-06-8				5 g	KUA-00225 45,000	
	(R)-N-Acetyl-α-Allylglycine	≥ 98.0% ≥ 98.0%ee	R	C ₇ H ₁₁ NO ₃ (157.17)	100 mg	KUA-00239 20,000	← New Vol.
	121786-40-1				1 g	KUA-00231 45,000	
	(S)-N-Boc-α-Allylglycine Dicyclohexylamine salt	≥ 98.0% ≥ 98.0%ee	R	C ₁₀ H ₁₇ NO ₄ · C ₁₂ H ₂₃ N (396.57)	100 mg	KUA-00249 18,000	← New Vol.
	143979-15-1				25 g	KUA-00242 70,000	
					100 g	KUA-00243 225,000	
	(S)-α-Allylglycine ethyl ester p-Toluenesulfonate	≥ 97.0% ≥ 98.0%ee	R	C ₇ H ₁₃ NO ₂ · C ₇ H ₈ O ₃ S (315.39)	100 mg	KUA-00259 18,000	← New Vol.
	1231709-21-9				5 g	KUA-00255 28,600	
					25 g	KUA-00252 70,000	
					100 g	KUA-00253 225,000	
	(R)-α-Allylglycine ethyl ester p-Toluenesulfonate	≥ 97.0% ≥ 98.0%ee	R	C ₇ H ₁₃ NO ₂ · C ₇ H ₈ O ₃ S (315.39)	100 mg	KUA-00269 18,000	← New Vol.
	1432914-51-6				5 g	KUA-00265 28,600	
					25 g	KUA-00262 70,000	
					100 g	KUA-00263 225,000	
α-AlkynylGly							
	(S)-α-Propargylglycine	≥ 98.0% ≥ 98.0%ee	R	C ₅ H ₇ NO ₂ (113.12)	100 mg	KUA-00279 19,000	← New Vol.
	23235-01-0				1 g	KUA-00271 22,500	
	(R)-α-Propargylglycine	≥ 98.0% ≥ 98.0%ee	R	C ₅ H ₇ NO ₂ (113.12)	100 mg	KUA-00289 19,000	← New Vol.
	23235-03-2				1 g	KUA-00281 22,500	
α,α-DialkenylGly							
	N-Fmoc-α,α-Bis (4-pentenyl)glycine	≥ 98.0% —	R	C ₂₇ H ₃₁ NO ₄ (433.55)	100 mg	KUA-00299 19,000	← New Vol.
	1068435-19-7				500 mg	KUA-00294 43,000	
					1 g	KUA-00291 60,000	

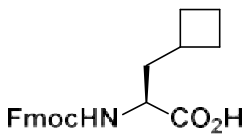
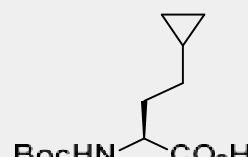
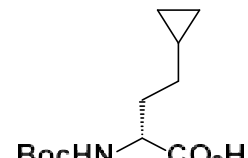
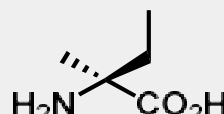
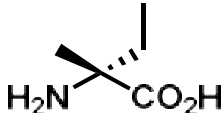
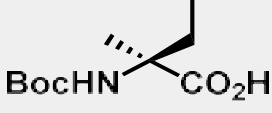
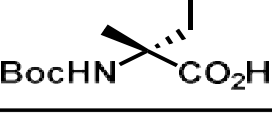
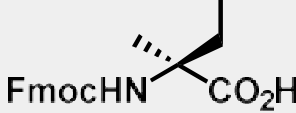
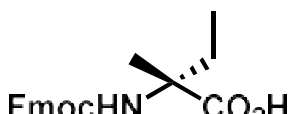
* Storage conditions: Refrigerated (R) 5°C

Application of Reactive amino acids to Stapled peptide synthesis

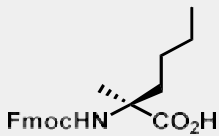
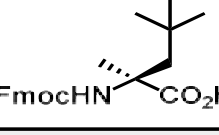
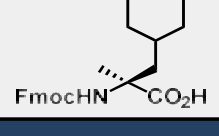

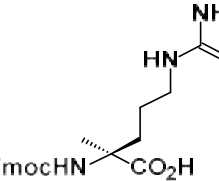

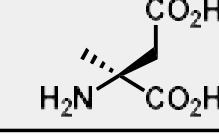
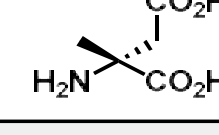
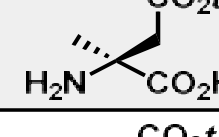
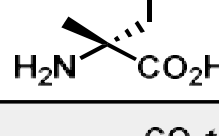
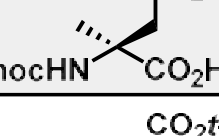

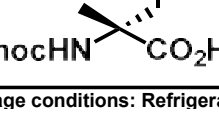



Reactive amino acids having alkenyl group or alkynyl group at α-position are materials to prepare cyclic or cross-linking compounds via olefin metathesis or Click reaction.

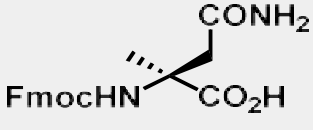
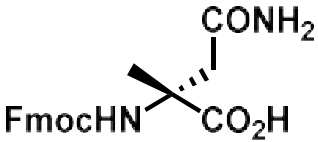
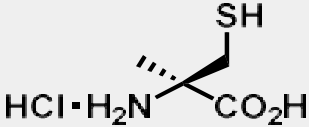
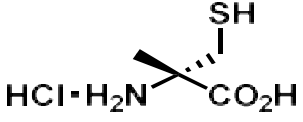
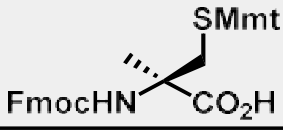

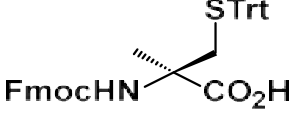

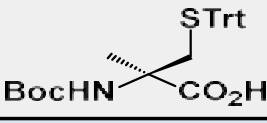
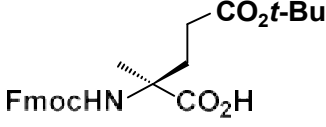
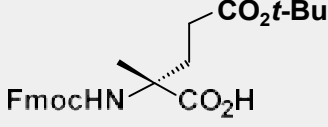
α-Substituted Glycine or Alanine Derivatives

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
Glycine (Gly)							
	(S)-N-Fmoc-α-Cyclobutylmethylglycine	≥ 98.0% ≥ 98.0%ee	R	C ₂₂ H ₂₃ NO ₄ (365.42)	100 mg	KUA-01509 23,000	New Vol.
					250 mg	KUA-01507 40,000	
					500 mg	KUA-01504 55,000	
					1 g	KUA-01501 90,000	
478183-62-9							
	(S)-N-Boc-α-Cyclopropylethylglycine	≥ 98.0% ≥ 98.0%ee	R	C ₁₂ H ₂₁ NO ₄ (243.30)	(NET) 100 mg	KUA-01289 19,000	New Vol. Containing 20-50% Methyl tert-butyl ether
					(NET) 250 mg	KUA-01287 40,000	
					(NET) 500 mg	KUA-01282 55,000	
					(NET) 1 g	KUA-01281 90,000	
1372404-84-6							
	(R)-N-Boc-α-Cyclopropylethylglycine	≥ 98.0% ≥ 98.0%ee	R	C ₁₂ H ₂₁ NO ₄ (243.30)	(NET) 100 mg	KUA-01659 19,000	New! Containing 20-50% Methyl tert-butyl ether
					(NET) 250 mg	KUA-01657 40,000	
					(NET) 500 mg	KUA-01654 55,000	
					(NET) 1 g	KUA-01651 90,000	
2349893-77-0							
Alanine (Ala)							
	(S)-α-Ethylalanine·H ₂ O	≥ 98.0% ≥ 98.0%ee	R	C ₅ H ₁₁ NO ₂ ·H ₂ O (135.16)	100 mg	KUA-00309 19,000	New Vol.
					1 g	KUA-00301 31,200	
					5 g	KUA-00305 75,000	
595-40-4							
	(R)-α-Ethylalanine·H ₂ O	≥ 98.0% ≥ 98.0%ee	R	C ₅ H ₁₁ NO ₂ ·H ₂ O (135.16)	100 mg	KUA-00319 19,000	New Vol.
					1 g	KUA-00311 31,200	
					5 g	KUA-00315 75,000	
3059-97-0							
	(S)-N-Boc-α-Ethylalanine	≥ 98.0% ≥ 98.0%ee	R	C ₁₀ H ₁₉ NO ₄ (217.27)	100 mg	KUA-00329 19,000	New Vol.
					1 g	KUA-00321 31,200	
					5 g	KUA-00325 75,000	
151171-11-8							
	(R)-N-Boc-α-Ethylalanine	≥ 98.0% ≥ 98.0%ee	R	C ₁₀ H ₁₉ NO ₄ (217.27)	100 mg	KUA-00339 19,000	New Vol.
					1 g	KUA-00331 31,200	
					5 g	KUA-00335 75,000	
123254-58-0							
	(S)-N-Fmoc-α-Ethylalanine	≥ 98.0% ≥ 98.0%ee	R	C ₂₀ H ₂₁ NO ₄ (339.39)	100 mg	KUA-00349 18,000	New Vol.
					500 mg	KUA-00344 30,000	
					1 g	KUA-00341 40,000	
					5 g	KUA-00345 140,000	
857478-30-9							
	(R)-N-Fmoc-α-Ethylalanine	≥ 98.0% ≥ 98.0%ee	R	C ₂₀ H ₂₁ NO ₄ (339.39)	100 mg	KUA-00359 18,000	New Vol.
					500 mg	KUA-00354 30,000	
					1 g	KUA-00351 40,000	
					5 g	KUA-00355 140,000	
1231709-22-0							

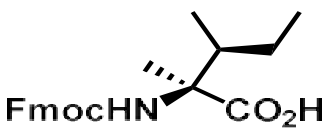

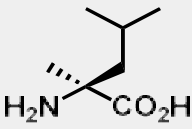
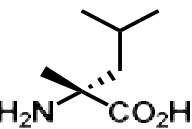
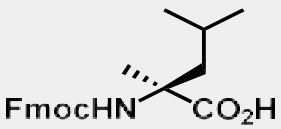
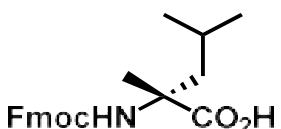
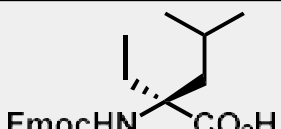
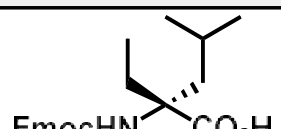
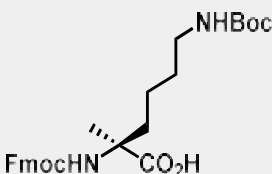
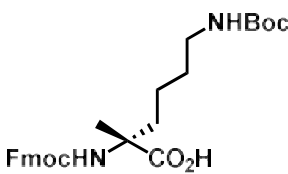
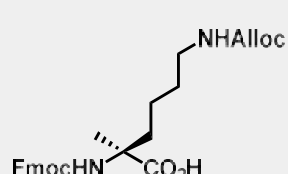
* Storage conditions: Refrigerated (R) 5°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	(S)-N-Fmoc-α-Methylnorleucine 2226710-38-7	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₂₂ H ₂₅ NO ₄ (367.45)	100 mg	KUA-00369 20,000	New Vol.
					500 mg	KUA-00364 40,000	
					1 g	KUA-00361 60,000	
	(S)-N-Fmoc-α-Methyl-β-tert-butyl-alanine 1934266-56-4	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₂₃ H ₂₇ NO ₄ (381.47)	100 mg	KUA-00379 32,000	
					500 mg	KUA-00374 95,000	
					1 g	KUA-00371 180,000	
	(S)-N-Fmoc-α-Methylcyclohexylalanine 1934266-55-3	≥ 98.0% ≥ 98.0% ^{ee}	F 	C ₂₅ H ₂₉ NO ₄ (407.51)	100 mg	KUA-00389 18,000	New Vol.
					500 mg	KUA-00384 40,000	
					1 g	KUA-00381 60,000	
α-Methyl or α-Ethyl Derivatives of Natural Amino Acids							
Arginine (Arg)							
	(S)-N _α -Fmoc-N _ω -Pbf-α-Methylarginine 2124196-74-1	≥ 98.0% ≥ 98.0% ^{ee}	F 	C ₃₅ H ₄₂ N ₄ O ₇ S (662.80)	100 mg	KUA-00399 22,000	New Vol.
					250 mg	KUA-00397 40,000	
					500 mg	KUA-00394 60,000	
					1 g	KUA-00391 90,000	
Aspartic acid (Asp)							
	(S)-α-Methylaspartic acid 3227-17-6	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₅ H ₉ NO ₄ (147.13)	100 mg	KUA-00409 20,000	New Vol.
					1 g	KUA-00401 36,000	
	(R)-α-Methylaspartic acid 14603-76-0	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₅ H ₉ NO ₄ (147.13)	100 mg	KUA-00419 20,000	New Vol.
					1 g	KUA-00411 36,000	
	(S)-α-Methylaspartic acid -4-tert-butyl ester 1217977-71-3	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₉ H ₁₇ NO ₄ (203.24)	100 mg	KUA-00429 19,000	New Vol.
					1 g	KUA-00421 30,000	
					5 g	KUA-00425 90,000	
	(R)-α-Methylaspartic acid -4-tert-butyl ester 1231709-25-3	≥ 98.0% ≥ 98.0% ^{ee}	R	C ₉ H ₁₇ NO ₄ (203.24)	100 mg	KUA-00439 19,000	New Vol.
					1 g	KUA-00431 30,000	
					5 g	KUA-00435 90,000	
	(S)-N-Fmoc-α-Methylaspartic acid -4-tert-butyl ester 1072845-47-6	≥ 98.0% ≥ 98.0% ^{ee}	F 	C ₂₄ H ₂₇ NO ₆ (425.48)	(NET) 100 mg	KUA-00449 19,000	New Vol. Containing ≤10% Methyl tert-butyl ether
					(NET) 1 g	KUA-00441 35,000	
					(NET) 5 g	KUA-00445 120,000	
	(R)-N-Fmoc-α-Methylaspartic acid -4-tert-butyl ester 1231709-26-4	≥ 98.0% ≥ 98.0% ^{ee}	F 	C ₂₄ H ₂₇ NO ₆ (425.48)	(NET) 100 mg	KUA-00459 19,000	New Vol. Containing ≤10% Methyl tert-butyl ether
					(NET) 1 g	KUA-00451 35,000	
					(NET) 5 g	KUA-00455 120,000	

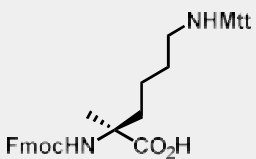

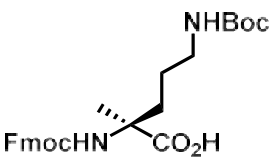
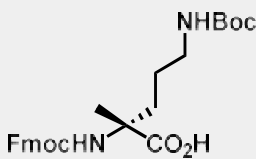
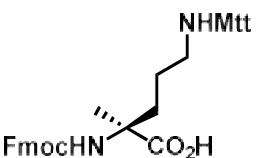

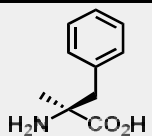
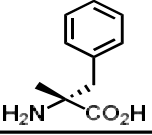
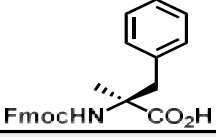
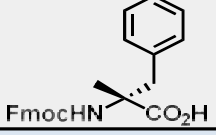
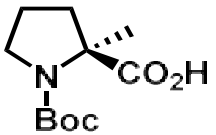
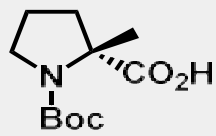
* Storage conditions: Refrigerated (R) 5°C, Frozen (F) -20°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
Asparagine (Asn)							
	(S)-N-Fmoc-α-Methylasparagine 1403590-49-7	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₀ H ₂₀ N ₂ O ₅ (368.39)	100 mg	KUA-00469 20,000	New Vol.
					500 mg	KUA-00464 35,000	
					1 g	KUA-00461 50,000	
					5 g	KUA-00465 200,000	
	(R)-N-Fmoc-α-Methylasparagine 1403590-50-0	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₀ H ₂₀ N ₂ O ₅ (368.39)	100 mg	KUA-00479 20,000	New Vol.
					500 mg	KUA-00474 35,000	
					1 g	KUA-00471 50,000	
					5 g	KUA-00475 200,000	
Cysteine (Cys)							
	(R)-L-α-Methylcysteine·HCl 148766-37-4	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₄ H ₉ NO ₂ S·HCl (171.65)	100 mg	KUA-00489 18,000	New Vol.
					1 g	KUA-00481 35,000	
					5 g	KUA-00485 140,000	
	(S)-D-α-Methylcysteine·HCl 151062-55-4	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₄ H ₉ NO ₂ S·HCl (171.65)	100 mg	KUA-00493 30,000	
					1 g	KUA-00491 120,000	
	(R)-L-N-Fmoc-S-Mmt-α-Methylcysteine 1198791-74-0	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₃₉ H ₃₅ NO ₅ S (629.77)	100 mg	KUA-00509 20,000	New Vol.
					500 mg	KUA-00504 40,000	
					1 g	KUA-00501 60,000	
	(R)-L-N-Fmoc-S-Trt-α-Methylcysteine 725728-43-8	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₃₈ H ₃₃ NO ₄ S (599.74)	100 mg	KUA-01349 19,000	New Vol.
					500 mg	KUA-01344 40,000	
					1 g	KUA-01341 60,000	
	(R)-L-N-Boc-S-Trt-α-Methylcysteine 2226710-42-3	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₈ H ₃₁ NO ₄ S (477.61)	100 mg	KUA-01359 19,000	New Vol.
					500 mg	KUA-01354 40,000	
					1 g	KUA-01351 60,000	
Glutamic acid (Glu)							
	(S)-N-Fmoc-α-Methylglutamic acid-5-tert-butyl ester 1072845-48-7	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₅ H ₂₉ NO ₆ (439.51)	100 mg	KUA-00539 21,000	New Vol.
					250 mg	KUA-00537 40,000	
					500 mg	KUA-00534 60,000	
					1 g	KUA-00531 90,000	
	(R)-N-Fmoc-α-Methylglutamic acid-5-tert-butyl ester 1072845-50-1	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₅ H ₂₉ NO ₆ (439.51)	100 mg	KUA-01499 19,000	New Vol.
					250 mg	KUA-01497 40,000	
					500 mg	KUA-01494 60,000	
					1 g	KUA-01491 90,000	

* Storage conditions: Refrigerated (R) 5°C, Frozen (F) -20°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
Isoleucine (Ile)							
	(2S,3S)-N-Fmoc- α-Methylisoleucine 2124196-75-2	≥ 98.0% ≥ 98.0%ee	F 	C ₂₂ H ₂₅ NO ₄ (367.45)	100 mg	KUA-00549 18,000	New Vol.
					500 mg	KUA-00544 45,000	
					1 g	KUA-00541 60,000	
Leucine (Leu)							
	(S)-α-Methylleucine 105743-53-1	≥ 98.0% ≥ 98.0%ee	R	C ₇ H ₁₅ NO ₂ (145.20)	100 mg	KUA-00559 19,000	New Vol.
					1 g	KUA-00551 31,200	
	(R)-α-Methylleucine 29589-03-5	≥ 98.0% ≥ 98.0%ee	R	C ₇ H ₁₅ NO ₂ (145.20)	100 mg	KUA-00569 19,000	New Vol.
					1 g	KUA-00561 31,200	
	(S)-N-Fmoc-α- Methylleucine 312624-65-0	≥ 98.0% ≥ 98.0%ee	R	C ₂₂ H ₂₅ NO ₄ (367.45)	100 mg	KUA-00579 21,000	New Vol.
					500 mg	KUA-00574 40,000	
					1 g	KUA-00571 60,000	
	(R)-N-Fmoc-α- Methylleucine 1231709-23-1	≥ 98.0% ≥ 98.0%ee	R	C ₂₂ H ₂₅ NO ₄ (367.45)	100 mg	KUA-00589 21,000	New Vol.
					500 mg	KUA-00584 40,000	
					1 g	KUA-00581 60,000	
	(S)-N-Fmoc-α- Ethylleucine 1934266-50-8	≥ 98.0% ≥ 98.0%ee	R	C ₂₃ H ₂₇ NO ₄ (381.47)	100 mg	KUA-00599 19,000	New Vol.
					250 mg	KUA-00597 36,000	
					1 g	KUA-00591 80,000	
	(R)-N-Fmoc-α- Ethylleucine 1934266-51-9	≥ 98.0% ≥ 98.0%ee	R	C ₂₃ H ₂₇ NO ₄ (381.47)	100 mg	KUA-00609 19,000	New Vol.
					250 mg	KUA-00607 36,000	
					1 g	KUA-00601 80,000	
Lysine (Lys)							
	(S)-N _α -Fmoc-N _ω -Boc-α- Methyllysine 1202003-49-3	≥ 98.0% ≥ 98.0%ee	R	C ₂₇ H ₃₄ N ₂ O ₆ (482.58)	100 mg	KUA-00619 20,000	New Vol.
					500 mg	KUA-00614 40,000	
					1 g	KUA-00611 60,000	
					5 g	KUA-00615 200,000	
	(R)-N _α -Fmoc-N _ω -Boc-α- Methyllysine 1315449-94-5	≥ 98.0% ≥ 98.0%ee	R	C ₂₇ H ₃₄ N ₂ O ₆ (482.58)	100 mg	KUA-00629 20,000	New Vol.
					500 mg	KUA-00624 40,000	
					1 g	KUA-00621 60,000	
					5 g	KUA-00625 200,000	
	(S)-N _α -Fmoc-N _ω -Alloc-α- Methyllysine 1934266-47-3	≥ 98.0% ≥ 98.0%ee	R	C ₂₆ H ₃₀ N ₂ O ₆ (466.53)	100 mg	KUA-00639 21,000	New Vol.
					250 mg	KUA-00637 48,000	
					500 mg	KUA-00634 80,000	
					1 g	KUA-00631 120,000	

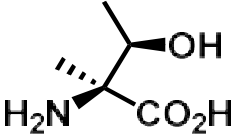
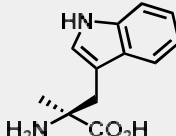
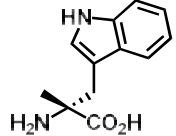
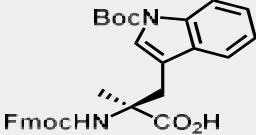
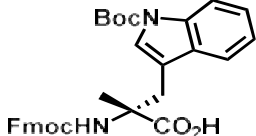
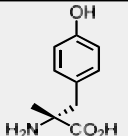
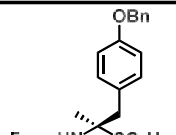
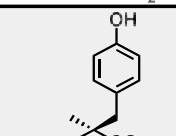
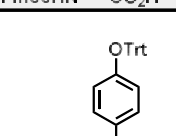

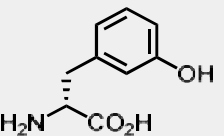
* Storage conditions: Refrigerated (R) 5°C, Freezed (F) -20°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	(S)-N _α -Fmoc-N _ω -Mtt-α-Methyllysine	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₄₂ H ₄₂ N ₂ O ₄ (638.81)	100 mg	KUA-00649 18,000	New Vol.
					250 mg	KUA-00647 36,000	
					500 mg	KUA-00644 53,000	
					1 g	KUA-00641 80,000	
Ornithine (Orn)							
	(S)-N _α -Fmoc-N _ε -Boc-α-Methylornithine	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₆ H ₃₂ N ₂ O ₆ (468.55)	100 mg	KUA-00659 20,000	New Vol.
					500 mg	KUA-00654 40,000	
					1 g	KUA-00651 60,000	
					5 g	KUA-00655 180,000	
	(R)-N _α -Fmoc-N _ε -Boc-α-Methylornithine	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₆ H ₃₂ N ₂ O ₆ (468.55)	100 mg	KUA-00669 20,000	New Vol.
					500 mg	KUA-00664 40,000	
					1 g	KUA-00661 60,000	
					5 g	KUA-00665 180,000	
	(S)-N _α -Fmoc-N _ε -Mtt-α-Methylornithine	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₄₁ H ₄₀ N ₂ O ₄ (624.78)	100 mg	KUA-00679 22,000	New Vol.
					250 mg	KUA-00677 37,000	
					500 mg	KUA-00674 55,000	
					1 g	KUA-00671 80,000	
Phenylalanine (Phe)							
	(S)-α-Methylphenylalanine ·H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₃ NO ₂ · H ₂ O (197.23)	100 mg	KUA-00689 19,000	New Vol.
					1 g	KUA-00681 25,000	
					5 g	KUA-00685 80,000	
	(R)-α-Methylphenylalanine ·H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₃ NO ₂ · H ₂ O (197.23)	100 mg	KUA-00699 19,000	New Vol.
					1 g	KUA-00691 25,000	
					5 g	KUA-00695 80,000	
	(S)-N-Fmoc-α-Methylphenylalanine ·3/2H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₅ H ₂₃ NO ₄ · 3/2H ₂ O (428.48)	100 mg	KUA-00709 19,000	New Vol.
					1 g	KUA-00701 25,000	
					5 g	KUA-00705 80,000	
	(R)-N-Fmoc-α-Methylphenylalanine ·3/2H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₅ H ₂₃ NO ₄ · 3/2H ₂ O (428.48)	100 mg	KUA-00719 19,000	New Vol.
					1 g	KUA-00711 25,000	
					5 g	KUA-00715 80,000	
Proline (Pro)							
	(S)-N-Boc-α-Methylproline	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₁ H ₁₉ NO ₄ (229.28)	100 mg	KUA-00729 19,000	New Vol.
					1 g	KUA-00721 30,000	
					5 g	KUA-00725 95,000	
	(R)-N-Boc-α-Methylproline	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₁ H ₁₉ NO ₄ (229.28)	100 mg	KUA-00739 19,000	New Vol.
					1 g	KUA-00731 30,000	
					5 g	KUA-00735 95,000	

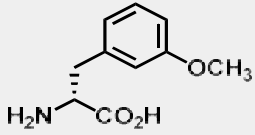
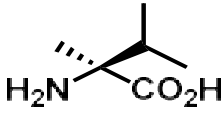
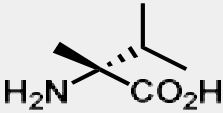
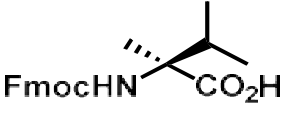
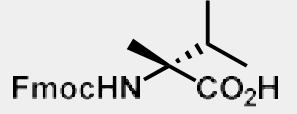
* Storage conditions: Refrigerated (R) 5°C, Freezed (F) -20°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	(S)-N-Fmoc-α-Methylproline 167275-47-0	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₁ H ₂₁ NO ₄ (351.40)	100 mg	KUA-00749 18,000	New Vol.
					500 mg	KUA-00744 30,000	
					1 g	KUA-00741 45,000	
					5 g	KUA-00745 120,000	
	(R)-N-Fmoc-α-Methylproline 1286768-33-9	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₁ H ₂₁ NO ₄ (351.40)	100 mg	KUA-00759 18,000	New Vol.
					500 mg	KUA-00754 30,000	
					1 g	KUA-00751 45,000	
					5 g	KUA-00755 120,000	
Serine (Ser)							
	(S)-N-Fmoc-O- <i>tert</i> -Butyl-α-Methylserine 914399-98-7	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₂₃ H ₂₇ NO ₅ (397.47)	100 mg	KUA-00769 21,000	New Vol.
					500 mg	KUA-00764 50,000	
					1 g	KUA-00761 85,000	
	(R)-N-Fmoc-O- <i>tert</i> -Butyl-α-Methylserine 914399-96-5	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₂₃ H ₂₇ NO ₅ (397.47)	100 mg	KUA-01369 18,000	New Vol.
					500 mg	KUA-01364 50,000	
					1 g	KUA-01361 85,000	
	(S)-O- <i>tert</i> -Butyl-α-Benzylserine Not Registered	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₁₄ H ₂₁ NO ₃ (251.33)	100 mg	KUA-01389 18,000	New Vol.
	1 g				KUA-01381 25,000		
	(R)-O- <i>tert</i> -Butyl-α-Benzylserine Not Registered	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₁₄ H ₂₁ NO ₃ (251.33)	100 mg	KUA-01379 18,000	New Vol.
	1 g				KUA-01371 25,000		
	(S)-O- <i>tert</i> -Butyl-α-Allylserine Not Registered	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₁₀ H ₁₉ NO ₃ (201.27)	100 mg	KUA-01399 19,000	New Vol.
					500 mg	KUA-01394 48,000	
					1 g	KUA-01391 70,000	
	(R)-O- <i>tert</i> -Butyl-α-Allylserine Not Registered	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₁₀ H ₁₉ NO ₃ (201.27)	100 mg	KUA-01409 19,000	New Vol.
					500 mg	KUA-01404 48,000	
					1 g	KUA-01401 70,000	
	(S)-N-Fmoc-O- <i>tert</i> -Butyl-α-Benzylserine Not Registered	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₂₉ H ₃₁ NO ₅ (473.56)	100 mg	KUA-01419 19,000	New Vol.
					500 mg	KUA-01414 48,000	
					1 g	KUA-01411 70,000	
	(R)-N-Fmoc-O- <i>tert</i> -Butyl-α-Benzylserine 914399-97-6	≥ 98.0% ≥ 98.0% <i>ee</i>	F 	C ₂₉ H ₃₁ NO ₅ (473.56)	100 mg	KUA-01429 19,000	New Vol.
					500 mg	KUA-01424 48,000	
					1 g	KUA-01421 70,000	

* Storage conditions: Refrigerated (R) 5°C, Frozen (F) -20°C

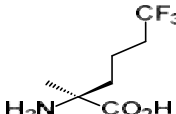
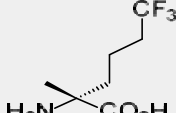
Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY¥	
Threonine (Thr)							
	(2S,3R)- α -Methylthreonine 127126-06-1	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₅ H ₁₁ NO ₃ (133.15)	100 mg	KUA-00779 19,000	New Vol.
					500 mg	KUA-00774 40,000	
					1 g	KUA-00771 60,000	
Tryptophan (Trp)							
	(S)- α -Methyltryptophan·1/2H ₂ O 16709-25-4	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₁₂ H ₁₄ N ₂ O ₂ ·1/2H ₂ O (227.26)	100 mg	KUA-00789 22,000	New Vol.
					500 mg	KUA-00784 43,000	
					1 g	KUA-00781 65,000	
	(R)- α -Methyltryptophan·1/2H ₂ O 56452-52-9	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₁₂ H ₁₄ N ₂ O ₂ ·1/2H ₂ O (227.26)	100 mg	KUA-00799 22,000	New Vol.
					500 mg	KUA-00794 43,000	
					1 g	KUA-00791 65,000	
	(S)-N-Fmoc-N'-Boc- α -Methyltryptophan 1315449-98-9	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₃₂ H ₃₂ N ₂ O ₆ (540.62)	(NET) 100 mg	KUA-00809 25,000	New Vol. Containing 5% n-Heptane
					(NET) 200 mg	KUA-00804 48,000	
					(NET) 1 g	KUA-00801 110,000	
	(R)-N-Fmoc-N'-Boc- α -Methyltryptophan 220155-72-6	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₃₂ H ₃₂ N ₂ O ₆ (540.62)	(NET) 100 mg	KUA-00819 25,000	New Vol. Containing 5% n-Heptane
					(NET) 200 mg	KUA-00814 48,000	
					(NET) 1 g	KUA-00811 110,000	
Tyrosine (Tyr)							
	(R)- α -Methyl-4-hydroxyphenylalanine 672-86-6	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₁₀ H ₁₃ NO ₃ (195.22)	100 mg	KUA-00829 19,000	New Vol. (trivial name) (R)- α -Methyl tyrosine
					1 g	KUA-00821 22,500	
	(S)-N-Fmoc- α -Methyl-4-benzyloxyphenylalanine 1283766-46-0	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₃₂ H ₂₉ NO ₅ (507.59)	100 mg	KUA-00839 18,000	New Vol. (trivial name) (S)-N-Fmoc-O-Benzyl- α -Methyltyrosine
					500 mg	KUA-00834 35,000	
					1 g	KUA-00831 50,000	
	(S)-N-Fmoc- α -Methyl-4-hydroxyphenylalanine 246539-83-3	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₂₅ H ₂₃ NO ₅ (417.46)	100 mg	KUA-00849 23,000	New Vol. (trivial name) (S)-N-Fmoc- α -Methyl tyrosine
					500 mg	KUA-00844 40,000	
					1 g	KUA-00841 55,000	
	(S)-N-Fmoc- α -Methyl-4-triphenylmethoxy phenylalanine 1934266-53-1	$\geq 98.0\%$ $\geq 98.0\%ee$	F 	C ₄₄ H ₃₇ NO ₅ (659.78)	100 mg	KUA-00859 18,000	New Vol. (trivial name) (S)-N-Fmoc-O-Trityl- α -Methyl tyrosine
					250 mg	KUA-00857 32,000	
					500 mg	KUA-00854 53,000	
					1 g	KUA-00851 80,000	
	(R)-3-Hydroxyphenylalanine 32140-49-1	$\geq 98.0\%$ $\geq 98.0\%ee$	R	C ₉ H ₁₁ NO ₃ (181.19)	100 mg	KUA-00869 19,000	New Vol. (trivial name) (R)-m-Tyrosine
					1 g	KUA-00861 35,000	

* Storage conditions: Refrigerated (R) 5°C, Freezed (F) -20°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	(<i>R</i>)-3-Methoxyphenylalanine·H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₃ NO ₃ ·H ₂ O (213.23)	100 mg	KUA-00879 21,000	← New Vol. (trivial name) (<i>R</i>)-O-Methyl- <i>m</i> -tyrosine·H ₂ O
	145306-65-6				1 g	KUA-00871 50,000	
Valine (Val)							
	(<i>S</i>)-α-Methylvaline	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₆ H ₁₃ NO ₂ (131.18)	100 mg	KUA-00889 19,000	← New Vol.
	53940-83-3				1 g	KUA-00881 30,000	
	(<i>R</i>)-α-Methylvaline	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₆ H ₁₃ NO ₂ (131.18)	100 mg	KUA-00899 19,000	← New Vol.
	53940-82-2				1 g	KUA-00891 30,000	
	(<i>S</i>)-N-Fmoc-α-Methylvaline	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₁ H ₂₃ NO ₄ (353.42)	(NET) 100 mg	KUA-00909 18,000	← New Vol. Containing ≤10% Methyl <i>tert</i> -butyl ether
	169566-81-8				1 g	KUA-00901 35,000	
	(<i>R</i>)-N-Fmoc-α-Methylvaline	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₁ H ₂₃ NO ₄ (353.42)	(NET) 100 mg	KUA-00919 18,000	← New Vol. Containing ≤10% Methyl <i>tert</i> -butyl ether
	616867-28-8				1 g	KUA-00911 35,000	

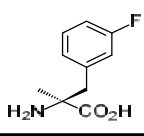
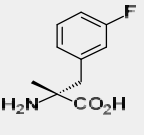
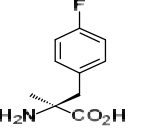
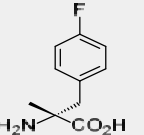
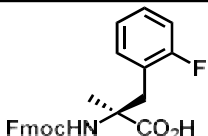
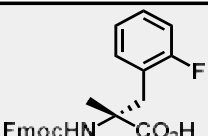
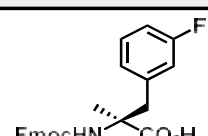
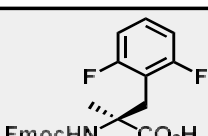
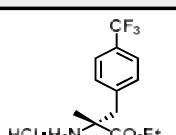
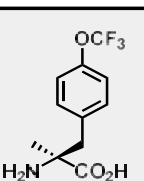
* Storage conditions: Refrigerated (R) 5°C

Fluorine Substituted Alkyl Amino Acids

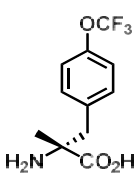
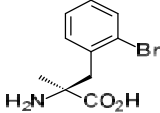
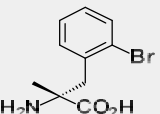
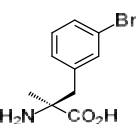
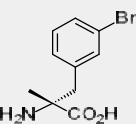
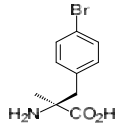
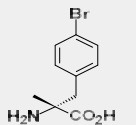
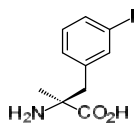
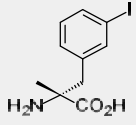
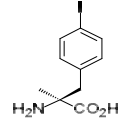
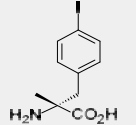
Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	(<i>S</i>)-6,6,6-Trifluoro-α-methylnorleucine	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₇ H ₁₂ F ₃ NO ₂ (199.17)	100 mg	KUA-01519 20,000	← New Vol.
					500 mg	KUA-01514 50,000	
					1g	KUA-01511 70,000	
	(<i>R</i>)-6,6,6-Trifluoro-α-methylnorleucine	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₇ H ₁₂ F ₃ NO ₂ (199.17)	100 mg	KUA-01529 20,000	← New Vol.
					500 mg	KUA-01524 50,000	
					1 g	KUA-01521 70,000	

* Storage conditions: Refrigerated (R) 5°C

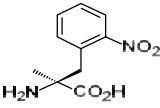
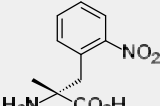
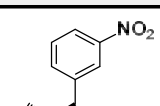
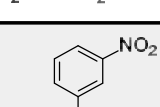
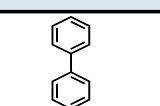
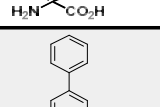
α-Methyl Substituted Phenylalanines

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
F-Phe							
	(S)-α-Methyl-3-fluorophenylalanine 130855-56-0	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ FNO ₂ (197.21)	100 mg	KUA-00929 19,000	← New Vol.
					1 g	KUA-00921 35,000	
					5 g	KUA-00925 140,000	
	(R)-α-Methyl-3-fluorophenylalanine 1270184-80-9	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ FNO ₂ (197.21)	100 mg	KUA-00939 19,000	← New Vol.
					1 g	KUA-00931 35,000	
					5 g	KUA-00935 140,000	
	(S)-α-Methyl-4-fluorophenylalanine 130855-57-1	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ FNO ₂ (197.21)	100 mg	KUA-00949 19,000	← New Vol.
					1 g	KUA-00941 25,000	
					5 g	KUA-00945 100,000	
	(R)-α-Methyl-4-fluorophenylalanine 422568-68-1	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ FNO ₂ (197.21)	100 mg	KUA-00959 19,000	← New Vol.
					1 g	KUA-00951 25,000	
					5 g	KUA-00955 100,000	
	(S)-N-Fmoc-α-Methyl-2-fluorophenylalanine 1172127-44-4	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₅ H ₂₂ FNO ₄ (419.45)	100 mg	KUA-00969 19,000	← New Vol.
					1 g	KUA-00961 30,000	
	(R)-N-Fmoc-α-Methyl-2-fluorophenylalanine 1315449-93-4	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₅ H ₂₂ FNO ₄ (419.45)	100 mg	KUA-00979 19,000	← New Vol.
					1 g	KUA-00971 30,000	
	(S)-N-Fmoc-α-Methyl-3-fluorophenylalanine 1410792-22-1	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₅ H ₂₂ FNO ₄ (419.45)	100 mg	KUA-00989 19,000	← New Vol.
					1 g	KUA-00981 50,000	
	(S)-N-Fmoc-α-Methyl-2,6-difluorophenylalanine 1223105-51-8	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₂₅ H ₂₁ F ₂ NO ₄ (437.44)	100 mg	KUA-00999 18,000	← New Vol.
					1 g	KUA-00991 30,000	
	(R)-α-Methyl-4-trifluoromethyl phenylalanine ethyl ester·HCl·H ₂ O 1315449-99-0	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₃ H ₁₆ F ₃ NO ₂ · HCl·H ₂ O (329.75)	100 mg	KUA-01009 18,000	← New Vol.
					1 g	KUA-01001 45,000	
	(S)-α-Methyl-4-trifluoromethoxy phenylalanine 1269926-90-0	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₁ H ₁₂ F ₃ NO ₃ (263.22)	100 mg	KUA-01019 19,000	← New Vol.
					500 mg	KUA-01014 43,000	
					1 g	KUA-01011 65,000	
					5 g	KUA-01015 250,000	

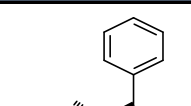
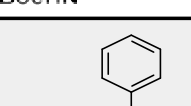
* Storage conditions: Refrigerated (R) 5°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	(R)-α-Methyl-4-trifluoromethoxyphenylalanine 1269835-58-6	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₁ H ₁₂ F ₃ NO ₃ (263.22)	100 mg	KUA-01029 19,000	New Vol.
					500 mg	KUA-01024 43,000	
					1 g	KUA-01021 65,000	
					5 g	KUA-01025 250,000	
Br-Phe							
	(S)-α-Methyl-2-bromophenylalanine·H ₂ O 1212180-27-2	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ BrNO ₂ ·H ₂ O (276.13)	100 mg	KUA-01039 22,000	New Vol.
					1 g	KUA-01031 50,000	
	(R)-α-Methyl-2-bromophenylalanine·H ₂ O 1212307-90-8	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ BrNO ₂ ·H ₂ O (276.13)	100 mg	KUA-01049 22,000	New Vol.
					1 g	KUA-01041 50,000	
	(S)-α-Methyl-3-bromophenylalanine·H ₂ O 1212117-73-1	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ BrNO ₂ ·H ₂ O (276.13)	100 mg	KUA-01059 20,000	New Vol.
					1 g	KUA-01051 42,700	
	(R)-α-Methyl-3-bromophenylalanine·H ₂ O 1212321-90-8	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ BrNO ₂ ·H ₂ O (276.13)	100 mg	KUA-01069 20,000	New Vol.
					1 g	KUA-01061 42,700	
	(S)-α-Methyl-4-bromophenylalanine 747397-27-9	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ BrNO ₂ (258.12)	100 mg	KUA-01079 19,000	New Vol.
					1 g	KUA-01071 45,000	
	(R)-α-Methyl-4-bromophenylalanine·H ₂ O 752971-41-8	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ BrNO ₂ ·H ₂ O (276.13)	100 mg	KUA-01089 19,000	New Vol.
					1 g	KUA-01081 45,000	
I-Phe							
	(S)-α-Methyl-3-iodophenylalanine·H ₂ O 457653-01-9	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ INO ₂ ·H ₂ O (323.13)	100 mg	KUA-01099 20,000	New Vol.
					1 g	KUA-01091 32,000	
	(R)-α-Methyl-3-iodophenylalanine·H ₂ O 457652-83-4	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ INO ₂ ·H ₂ O (323.13)	100 mg	KUA-01109 20,000	New Vol.
					1 g	KUA-01101 32,000	
	(S)-α-Methyl-4-iodophenylalanine 1215092-16-2	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ INO ₂ (305.11)	100 mg	KUA-01119 19,000	New Vol.
					1 g	KUA-01111 27,000	
	(R)-α-Methyl-4-iodophenylalanine 1241679-14-0	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ INO ₂ (305.11)	100 mg	KUA-01129 19,000	New Vol.
					1 g	KUA-01121 27,000	

* Storage conditions: Refrigerated (R) 5°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
NO₂-Phe							
	(S)- α -Methyl-2-nitrophenylalanine·H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ N ₂ O ₄ ·H ₂ O (242.23)	100 mg	KUA-01199 20,000	New Vol.
	1241680-71-6				1 g	KUA-01191 35,000	
	(R)- α -Methyl-2-nitrophenylalanine·H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ N ₂ O ₄ ·H ₂ O (242.23)	100 mg	KUA-01209 20,000	New Vol.
	1241680-73-8				1 g	KUA-01201 35,000	
	(S)- α -Methyl-3-nitrophenylalanine·H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ N ₂ O ₄ ·H ₂ O (242.23)	100 mg	KUA-01219 19,000	New Vol.
	1215092-14-0				1 g	KUA-01211 33,300	
	(R)- α -Methyl-3-nitrophenylalanine·H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₀ H ₁₂ N ₂ O ₄ ·H ₂ O (242.23)	100 mg	KUA-01229 19,000	New Vol.
	1215092-13-9				1 g	KUA-01221 33,300	
4-Ph-Phe							
	(S)- α -Methyl- β -(4-biphenyl)alanine·H ₂ O	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₆ H ₁₇ NO ₂ ·H ₂ O (273.33)	100 mg	KUA-01179 19,000	New Vol.
	1231709-24-2				1 g	KUA-01171 40,000	
	(S)-N-Fmoc- α -Methyl- β -(4-biphenyl)alanine	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₃₁ H ₂₇ NO ₄ (477.55)	100 mg	KUA-01189 19,000	New Vol.
	2226710-41-2				500 mg	KUA-01184 47,000	
					1 g	KUA-01181 70,000	

* Storage conditions: Refrigerated (R) 5°C

Amino Alcohols							
Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	<i>tert</i> -Butyl N-[(2S)-2-benzyl-1-hydroxypropan-2-yl]carbamate	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₅ H ₂₃ NO ₃ (263.35)	100 mg	KUA-01549 19,000	New Vol.
	1320273-42-4				1 g	KUA-01541 45,000	
	<i>tert</i> -Butyl N-[(2R)-2-benzyl-1-hydroxypropan-2-yl]carbamate	≥ 98.0% ≥ 98.0% <i>ee</i>	R	C ₁₅ H ₂₃ NO ₃ (263.35)	100 mg	KUA-01559 19,000	New Vol.
	868286-68-4				1 g	KUA-01551 45,000	

* Storage conditions: Refrigerated (R) 5°C

Unnatural amino acid reagents manufactured by PeptiDream Inc.

We are selling unnatural amino acids of PeptiDream Inc. which leads the field of peptide pharmaceuticals, as a general reagent.

This is a list of products used in the field of research and development at the company and have been shown to enhance pharmacological activity, improve pharmacokinetics or physical properties.

Please use it for breakthroughs such as improvement of pharmacological activity, pharmacokinetics or physical properties.



Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY ¥	
	(S)-N-Fmoc-α-[2-(6-methoxypyridin-3-yl)]ethylglycine 2349871-82-3	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₅ H ₂₄ N ₂ O ₅ (432.47)	100 mg	KUP-10019 30,000	← New Vol. Placement of proton acceptors at appropriate positions
					250 mg	KUP-10017 40,000	
					1 g	KUP-10011 95,000	
	(S)-N-Fmoc-α-[2-(5-methoxypyridin-2-yl)]ethylglycine 2350064-93-4	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₅ H ₂₄ N ₂ O ₅ (432.47)	100 mg	KUP-10029 33,000	← New Vol. As above
					250 mg	KUP-10027 45,000	
					1 g	KUP-10021 105,000	
	(S)-N-Fmoc-α-[2-(5-methoxypyrimidin-2-yl)]ethylglycine 2680607-33-2	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₄ H ₂₃ N ₃ O ₅ (433.46)	100 mg	KUP-10039 30,000	← New Vol. As above
					250 mg	KUP-10037 40,000	
					1 g	KUP-10031 95,000	
	(S)-N-Fmoc-α-[2-(2-methoxypyrimidin-5-yl)]ethylglycine 2680607-32-1	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₄ H ₂₃ N ₃ O ₅ (433.46)	100 mg	KUP-10049 30,000	← New Vol. As above
					250 mg	KUP-10047 40,000	
					1 g	KUP-10041 95,000	
	(S)-N-Fmoc-α-[2-(6-methoxypyridazin-3-yl)]ethylglycine 2349456-62-6	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₄ H ₂₃ N ₃ O ₅ (433.46)	100 mg	KUP-10059 30,000	← New Vol. As above
					250 mg	KUP-10057 40,000	
					1 g	KUP-10051 95,000	
	(S)-N-Fmoc-β-(5,6-dimethoxypyridin-3-yl)alanine 2680607-37-6	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₅ H ₂₄ N ₂ O ₆ (448.46)	100 mg	KUP-10089 30,000	← New Vol. Isostere of Phe
					250 mg	KUP-10087 40,000	
					1 g	KUP-10081 95,000	
	(S)-N-Fmoc-β-(quinolin-6-yl)alanine 1998643-85-8	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₇ H ₂₂ N ₂ O ₄ (438.47)	100 mg	KUP-10229 40,000	← New Vol. As above
					250 mg	KUP-10227 57,000	
					1 g	KUP-10221 140,000	
	(S)-N-Fmoc-β-(quinolin-7-yl)alanine 2349649-45-0	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₇ H ₂₂ N ₂ O ₄ (438.47)	100 mg	KUP-10239 40,000	← New Vol. As above
					250 mg	KUP-10237 57,000	
					1 g	KUP-10231 140,000	
	(S)-N-Fmoc-β-(quinolin-3-yl)alanine 281655-61-6	≥ 95.0% ≥ 95.0% ^{ee}	F 	C ₂₇ H ₂₂ N ₂ O ₄ (438.47)	100 mg	KUP-10249 40,000	← New Vol. As above
					250 mg	KUP-10247 57,000	
					1 g	KUP-10241 140,000	
	(S)-N-Fmoc-β-(quinolin-8-yl)alanine 1821738-49-1	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₇ H ₂₂ N ₂ O ₄ (438.47)	100 mg	KUP-10279 40,000	← New Vol. As above
					250 mg	KUP-10277 57,000	
					1 g	KUP-10271 140,000	

* Storage conditions: Frozen (F) -20°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY¥	
	(S)-N-Fmoc-β-(6-phenylpyridin-3-yl)alanine 2717598-89-3	≥ 95.0% ≥ 95.0%ee	F 	C ₂₉ H ₂₄ N ₂ O ₄ (464.51)	100 mg	KUP-10169 37,000	New Vol. Isostere of Ph-Phe
					250 mg	KUP-10167 46,000	
					1 g	KUP-10161 105,000	
	(S)-N-Fmoc-3-(pyridin-2-yl)phenylalanine 2680607-36-5	≥ 95.0% ≥ 98.0%ee	F 	C ₂₉ H ₂₄ N ₂ O ₄ (464.51)	100 mg	KUP-10219 37,000	New Vol. As above
					250 mg	KUP-10217 46,000	
					1 g	KUP-10211 105,000	
	(S)-N-Fmoc-β-(7-azaindol-3-yl)alanine 737007-45-3	≥ 95.0% ≥ 98.0%ee	F 	C ₂₅ H ₂₁ N ₃ O ₄ (427.45)	100 mg	KUP-10129 38,000	New Vol. Isostere of Trp
					250 mg	KUP-10127 56,000	
					1 g	KUP-10121 135,000	
	(S)-N-Fmoc-β-(1-Boc-6-azaindol-3-yl)alanine Not Registered	≥ 95.0% ≥ 98.0%ee	F 	C ₃₀ H ₂₉ N ₃ O ₆ (527.57)	100 mg	KUP-10719 37,000	New Vol. As above
					250 mg	KUP-10717 54,000	
					1 g	KUP-10711 135,000	
	(S)-N-Fmoc-4-(tert-butoxycarbonylmethoxy)phenylalanine 181951-92-8	≥ 95.0% ≥ 98.0%ee	F 	C ₃₀ H ₃₁ NO ₇ (517.56)	100 mg	KUP-10439 28,000	New Vol. Isostere of Phe
					250 mg	KUP-10437 32,000	
					1 g	KUP-10431 58,000	
	(S)-N-Fmoc-N-methyl-3-chlorophenylalanine 1446478-28-9	≥ 95.0% ≥ 98.0%ee	F 	C ₂₅ H ₂₂ ClNO ₄ (435.90)	100 mg	KUP-10489 29,000	New Vol. As above
					250 mg	KUP-10487 37,000	
					1 g	KUP-10481 88,000	
	(S)-N-Fmoc-N-methyl-3,4-dichlorophenylalanine Not Registered	≥ 95.0% ≥ 98.0%ee	F 	C ₂₅ H ₂₁ Cl ₂ NO ₄ (470.34)	100 mg	KUP-10519 29,000	New Vol. As above
					250 mg	KUP-10517 37,000	
					1 g	KUP-10511 88,000	
	(S)-N-Fmoc-N-methyl-4-(tert-butoxycarbonyl)phenylalanine Not Registered	≥ 95.0% ≥ 98.0%ee	F 	C ₃₀ H ₃₁ NO ₆ (501.57)	100 mg	KUP-10559 30,000	New Vol. As above
					250 mg	KUP-10557 40,000	
					1 g	KUP-10551 98,000	
	(S)-N_α-Fmoc-N_ω- {[(Pbf)amino](dimethylamino)methylene} lysine Not Registered	≥ 95.0% ≥ 98.0%ee	F 	C ₃₇ H ₄₆ N ₄ O ₇ S (690.85)	100 mg	KUP-10109 40,000	New Vol. Isostere of Arg
					250 mg	KUP-10107 57,000	
					1 g	KUP-10101 140,000	
	(S)-N_α-Fmoc-N_ω- {[(Pbf)amino](diethylamino)methylene} lysine Not Registered	≥ 95.0% ≥ 98.0%ee	F 	C ₃₉ H ₅₀ N ₄ O ₇ S (718.90)	100 mg	KUP-10119 40,000	New Vol. As above
					250 mg	KUP-10117 57,000	
					1 g	KUP-10111 140,000	
	(S)-N-Fmoc-β-(4- {[(Pbf)amino](dibenzosuber-5-ylamino)methylene} aminophenyl)alanine Not Registered	≥ 95.0% ≥ 98.0%ee	F 	C ₅₃ H ₅₂ N ₄ O ₇ S (889.07)	100 mg	KUP-10289 40,000	New Vol. As above
					250 mg	KUP-10287 57,000	
					1 g	KUP-10281 140,000	
	(S)-N-Fmoc-3- {[(Pbf)amino](dibenzosuber-5-ylamino)methylene} phenylalanine Not Registered	≥ 95.0% ≥ 98.0%ee	F 	C ₅₃ H ₅₂ N ₄ O ₇ S (889.07)	100 mg	KUP-10299 40,000	New Vol. As above
					250 mg	KUP-10297 57,000	
					1 g	KUP-10291 140,000	

* Storage conditions: Frozen (F) -20°C

Structure	Chemical name	Spec. Chemical purity Optical purity	*	Molecular formula (molecular weight)	Quantity	Product code	Comments
	CAS RN®					Sales price JPY¥	
	(S)-N _α -Fmoc-N _ω -[[1-(<i>tert</i> -butoxycarbonylmethyl)piperidine-4-yl]carbonyl]lysine 2680607-34-3	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₃₂ H ₄₂ N ₄ O ₇ (594.70)	100 mg	KUP-10069 34,000	New Vol. Effective in improving solubility by the twitter formation
					250 mg	KUP-10067 50,000	
					1 g	KUP-10061 120,000	
	(S)-N _α -Fmoc-N _α -methyl-N _ω -[[4-(<i>tert</i> -butoxycarbonylmethyl)piperazine-1-yl]carbonyl]lysine Not Registered	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₃₃ H ₄₄ N ₄ O ₇ (608.73)	100 mg	KUP-10729 37,000	New Vol. As above
					250 mg	KUP-10727 54,000	
					1 g	KUP-10721 135,000	
	(S)-N _α -Fmoc-N _ω -[[1-(<i>tert</i> -butoxycarbonylmethyl)piperidine-4-yl]carbonyl]lysine 2680607-38-7	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₃₃ H ₄₃ N ₃ O ₇ (593.71)	100 mg	KUP-10079 34,000	New Vol. As above
					250 mg	KUP-10077 50,000	
					1 g	KUP-10071 120,000	
	(S)-N-Fmoc-β-[1-(<i>tert</i> -butoxycarbonylmethyl)piperidine-4-yl]alanine 2680607-35-4	≥ 95.0% ≥ 98.0% ^{ee}	F 	C ₂₉ H ₃₆ N ₂ O ₆ (508.61)	100 mg	KUP-10369 40,000	New Vol. As above
					250 mg	KUP-10367 57,000	
					1 g	KUP-10361 140,000	
	1-(<i>tert</i> -Butoxycarbonylmethyl)-4-(Fmoc-amino)piperidine-4-carboxylic acid 2680614-81-5	≥ 95.0% -	F 	C ₂₇ H ₃₂ N ₂ O ₆ (480.55)	100 mg	KUP-10379 40,000	New Vol. As above
					250 mg	KUP-10377 57,000	
					1 g	KUP-10371 140,000	
	N-Fmoc-N-(5- <i>tert</i> -butoxycarbonylpentan-1-yl)glycine 185426-32-8	≥ 95.0% -	F 	C ₂₇ H ₃₃ NO ₆ (467.55)	100 mg	KUP-10329 28,000	New Vol. Used as parts of Peptoid
					250 mg	KUP-10327 32,000	
					1 g	KUP-10321 78,000	
	N-Fmoc-N-(3- <i>tert</i> -butoxycarbonylpropan-1-yl)glycine 174799-90-7	≥ 95.0% -	F 	C ₂₅ H ₂₉ NO ₆ (439.50)	100 mg	KUP-10339 28,000	New Vol. As above
					250 mg	KUP-10337 32,000	
					1 g	KUP-10331 78,000	
	N-Fmoc-N-(2-cyclohexylethyl)glycine 2680615-14-7	≥ 95.0% -	F 	C ₂₅ H ₂₉ NO ₄ (407.50)	100 mg	KUP-10319 30,000	New Vol. As above
					250 mg	KUP-10317 40,000	
					1 g	KUP-10311 98,000	
	N-Fmoc-N-[2-(4-methoxyphenyl)ethyl]glycine 1286711-20-3	≥ 95.0% -	F 	C ₂₆ H ₂₅ NO ₅ (431.48)	100 mg	KUP-10349 29,000	New Vol. As above
					250 mg	KUP-10347 34,000	
					1 g	KUP-10341 58,000	
	N-Fmoc-N-(3-phenylpropan-1-yl)glycine 2231812-73-8	≥ 95.0% -	F 	C ₂₆ H ₂₅ NO ₄ (415.48)	100 mg	KUP-10359 37,000	New Vol. As above
					250 mg	KUP-10357 46,000	
					1 g	KUP-10351 94,000	

* Storage conditions: Frozen (F) -20°C

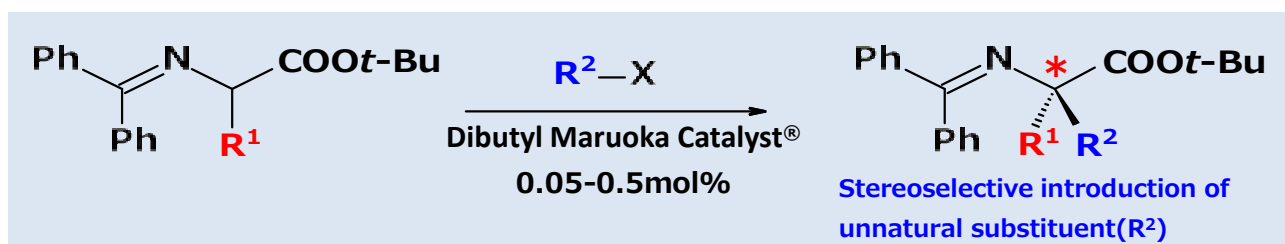
Abbreviation List

Abbreviation	Functional group
Alloc	Allyloxycarbonyl
Bn	Benzyl
Boc	<i>tert</i> -Butoxycarbonyl
<i>t</i> -Bu	<i>tert</i> -Butyl
Fmoc	9-Fluorenylmethoxycarbonyl

Abbreviation	Functional group
Mmt	4-Methoxytrityl
Mtt	4-Methyltrityl
Pbf	2,2,4,6,7-Pentamethyldihydrobenzofuran-5-sulfonyl
Trt	Triphenylmethyl
	Trityl

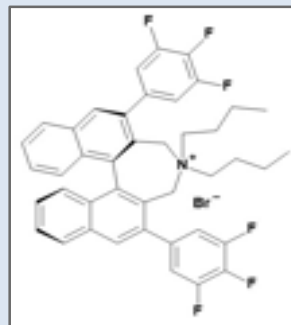
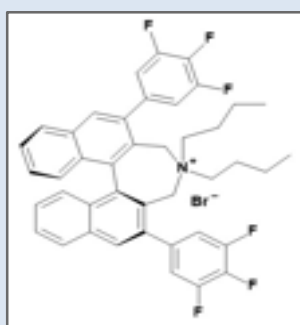
Maruoka Catalyst[®] Sales Launch

We have started to sell Dibutyl Maruoka Catalyst[®] (new Maruoka Catalyst[®]), which enables high-yield and highly enantioselective production of unnatural amino acids.



Org.Synth. **2013**,90,112-120, *Chem.Asian J.* **2008**,3,1702-1714

Dibutyl Maruoka Catalyst[®] (new Maruoka Catalyst[®])



Compared to the first generation catalyst, these catalysts has improved catalytic activity and reduced catalyst cost, and can be used at the plant scale.

Product name	CAS-RN	Product code	Quantity	Sales Price JPY¥
(S)-Dibutyl Maruoka Catalyst [®]	851942-89-7	KUA-01262	100 mg	29,700
		KUA-01264	500 mg	94,500
(R)-Dibutyl Maruoka Catalyst [®]	887938-70-7	KUA-01272	100 mg	29,700
		KUA-01274	500 mg	94,500

※We are happy to discuss purchasing in bulk quantities.

Trade Mark:

"Maruoka Catalyst[®]" is a registered trademark of KISHIDA CHEMICAL in Japan, the United States, the United Kingdom, Switzerland and France.

Application of Unnatural Amino Acids to Pharmaceuticals

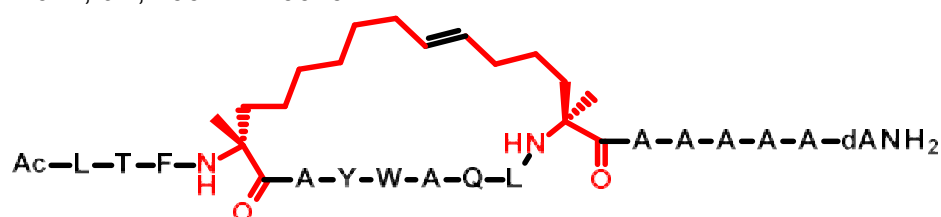
Many cases of incorporating unnatural amino acids, including α,α -disubstituted amino acids, have been reported in pharmaceuticals and drug developments. The advantages of introducing these unnatural amino acids can be expected as follows.

- 1) Enhancement of drug efficacy by conformational control of backbone side chain moieties and cyclic structure moieties
- 2) Increased metabolic stability
- 3) Control of physical properties (lipophilicity, water-solubility)

Representative examples of investigational new drugs containing α,α -disubstituted amino acids or amino alcohol in their structures

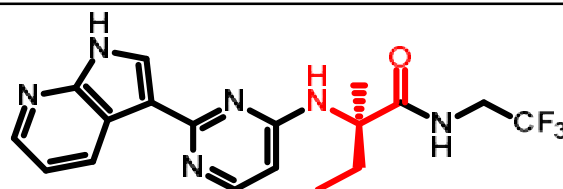
● Sulanemadlin MDM4, MDM2 Inhibitor

Zhang, S. *et al.*,
Journal of Medicinal Chemistry **2021**, 64, 10621–10640.



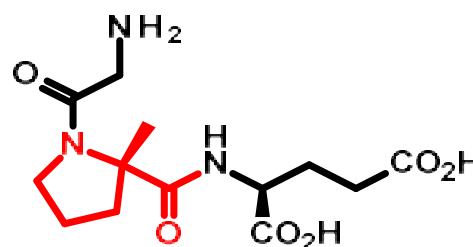
● Decernotinib JAK3 Inhibitor

Farmar, L. J. *et al.*,
Journal of Medicinal Chemistry **2015**, 58, 7195–7216.



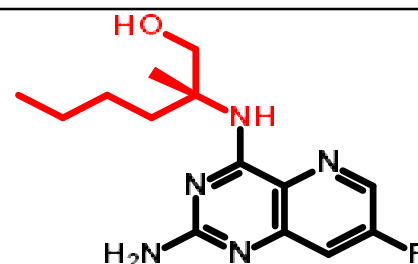
● Trofinetide Inhibitor of microglial activation

Glaze, D. G. *et al.*,
Neurology **2019**, 92 (16), 1912–1925.



● Selgantolimod TLR8 agonist

Mackman, R. L. *et al.*,
Journal of Medicinal Chemistry **2020**, 63, 10188–10203.





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