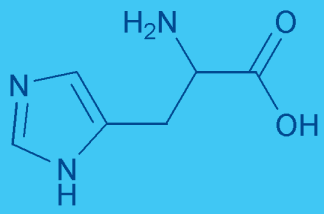


Periodic Chart of Amino Acids

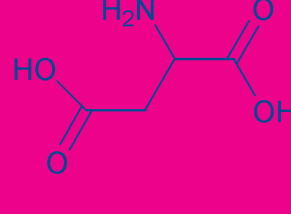
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H
155.16
137.14
C₆H₉N₃O₂



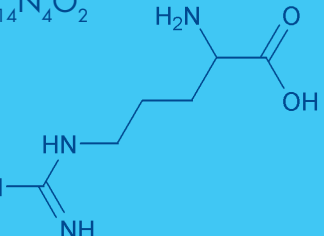
His
Histidine

D
133.10
115.09
C₄H₇NO₄



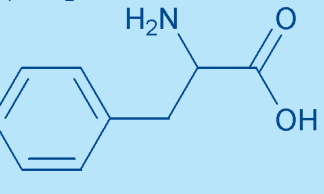
Asp
Aspartic Acid

R
174.20
156.19
C₆H₁₄N₄O₂



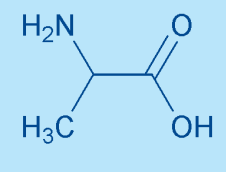
Arg
Arginine

F
165.19
147.18
C₉H₁₁NO₂



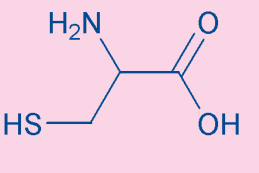
Phe
Phenylalanine

A
89.09
71.08
C₃H₇NO₂



Ala
Alanine

C
121.16
103.14
C₃H₇NO₂S



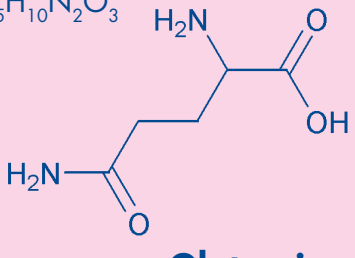
Cys
Cysteine

G
75.07
57.05
C₂H₅NO₂



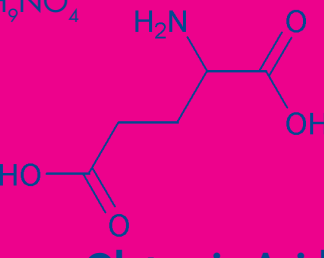
Gly
Glycine

Q
146.15
128.13
C₃H₁₀N₂O₃



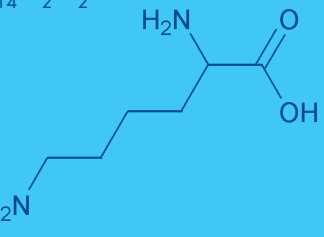
Gln
Glutamine

E
147.13
129.11
C₅H₉NO₄



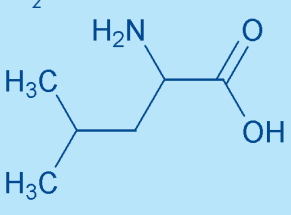
Glu
Glutamic Acid

K
146.19
128.17
C₆H₁₄N₂O₂



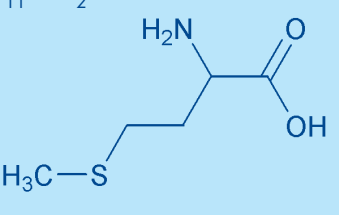
Lys
Lysine

L
131.18
113.16
C₆H₁₃NO₂



Leu
Leucine

M
149.21
131.20
C₅H₁₁NO₂S



Met
Methionine

N
132.12
114.10
C₄H₈N₂O₃



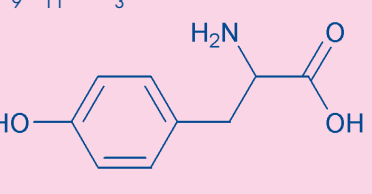
Asn
Asparagine

S
105.09
87.08
C₃H₇NO₃



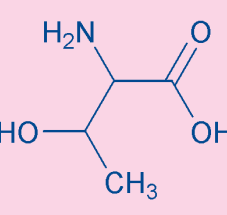
Ser
Serine

Y
181.19
163.17
C₉H₁₁NO₃




Tyr
Tyrosine

T
119.12
101.10
C₄H₉NO₃



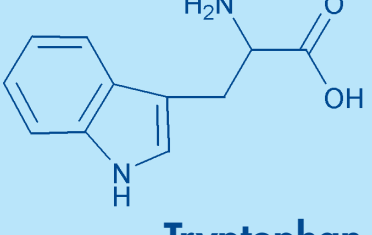
Thr
Threonine

I
131.18
113.16
C₆H₁₃NO₂




Ile
Isoleucine

W
204.23
186.21
C₁₁H₁₂N₂O₂




Trp
Tryptophan

P
115.13
97.12
C₅H₉NO₂



Pro
Proline

V
117.15
99.13
C₅H₁₁NO₂



Val
Valine

- Basic
- Non-polar (hydrophobic)
- Polar, uncharged
- Acidic

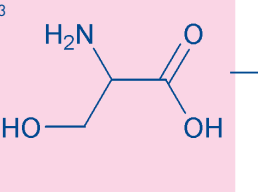
1-Letter Amino Acid Code: **S**

3-Letter Amino Acid Code: **Ser**

Relative Molecular Mass: 105.09

M_r - H₂O: 87.08

Molecular Formula: C₃H₇NO₃

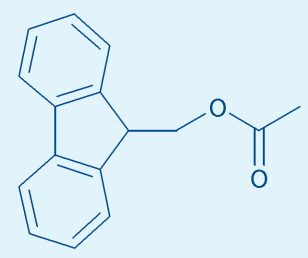
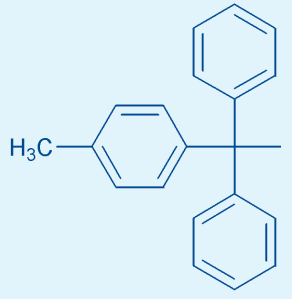
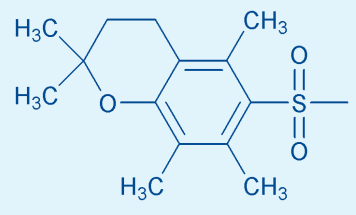
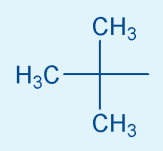


Chemical Name: **Serine**

Common Fmoc-Strategy SPPS* Protecting Groups

Absorption and Emission Characteristics of Chromophores and Fluorophores

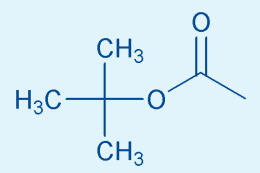
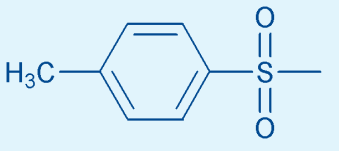
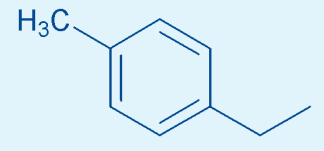
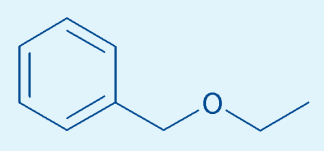
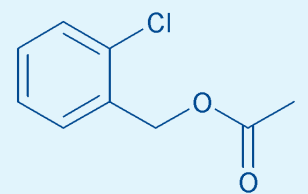
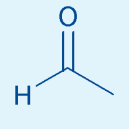
Common Boc-Strategy SPPS* Protecting Groups

| |
|--|
| <p>Fmoc 9-Fluorenylmethoxy-carbonyl M_r = 223.25</p>  |
| <p>Mtt 4-Methyltrityl M_r = 257.36</p>  |
| <p>Pmc 2,2,5,7,8-Pentamethyl-chroman-6-sulfonyl M_r = 267.37</p> <p>EP 0 293 073 B1 US Patent 4,946,971 owned by Bachem</p>  |
| <p>tBu t-Butyl M_r = 57.12</p>  |

| Fluorophore | Excitation Wavelength | Emission Wavelength |
|---|-----------------------|--|
| Abz (2-Aminobenzoyl or Anthraniloyl) | 320 nm | 420 nm |
| N-Me-Abz (N-Methyl-anthraniloyl) | 340 - 360 nm | 440 - 450 nm |
| AFC (7-Amido-4-trifluoromethylcoumarin) | 395 - 400 nm | 495 - 505 nm |
| AMC (7-Amido-4-methylcoumarin) | 360 - 380 nm | 440 - 460 nm |
| Dansyl (5-(Dimethylamino)naphthalene-1-sulfonyl) | 342 nm | 562 nm |
| EDANS (5-[(2-Aminoethyl)amino] naphthalene-1-sulfonic acid) | 340 nm | 490 nm |
| FITC (Fluorescein isothiocyanate) | 490 nm | 520 nm |
| Mca ([7-Methoxycoumarin-4-yl)acetyl) | 325 nm | 392 nm |
| 4MβNA (4-Methoxy-β-naphthylamide) | 335 - 350 nm | 410 - 440 nm |
| βNA (β-Naphthylamide) | 320 - 340 nm | 410 - 420 nm |
| Trp (Tryptophan) | 280 nm | 360 nm |
| Chromophore | Extinction Wavelength | Molar Extinction Coefficient |
| pNA (p-Nitroanilide) | 405 nm 410 nm | ε _{405 nm} = 9450 M ⁻¹ cm ⁻¹ ε _{410 nm} = 8800 M ⁻¹ cm ⁻¹ |

Values listed are as reported in the literature *SPPS = Solid Phase Peptide Synthesis

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| |
|--|
| <p>Boc t-Butyloxycarbonyl M_r = 101.13</p>  |
| <p>Tos Tosyl M_r = 155.20</p>  |
| <p>MbzI 4-Methylbenzyl M_r = 105.16</p>  |
| <p>Bom Benzyloxymethyl M_r = 121.16</p>  |
| <p>2-Chloro-Z 2-Chlorobenzyloxy-carbonyl M_r = 169.59</p>  |
| <p>For Formyl M_r = 29.02</p>  |

