



Periodic Chart of Amino Acids, Poster

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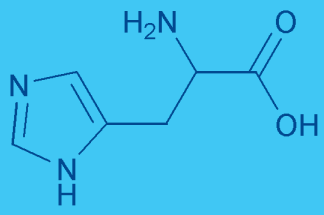
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W www.bio-connect.nl

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H

155.16
137.14
C₆H₉N₃O₂



His

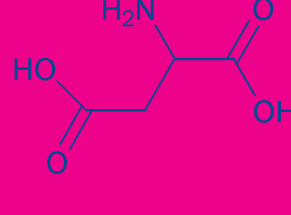
Histidine

Periodic Chart of Amino Acids

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D

133.10
115.09
C₄H₇NO₄

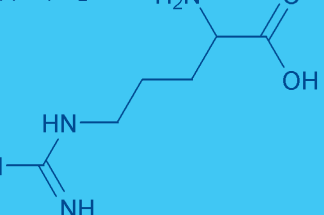


Asp

Aspartic Acid

R

174.20
156.19
C₆H₁₄N₄O₂

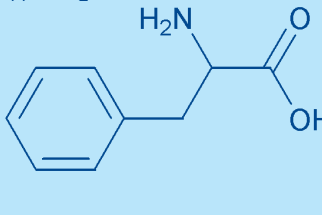


Arg

Arginine

F

165.19
147.18
C₉H₁₁NO₂

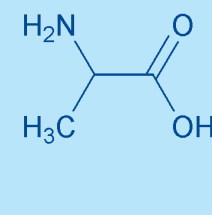


Phe

Phenylalanine

A

89.09
71.08
C₃H₇NO₂

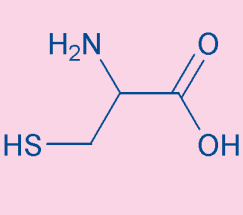


Ala

Alanine

C

121.16
103.14
C₃H₇NO₂S



Cys

Cysteine

G

75.07
57.05
C₂H₅NO₂



Gly

Glycine

Q

146.15
128.13
C₃H₁₀N₂O₃

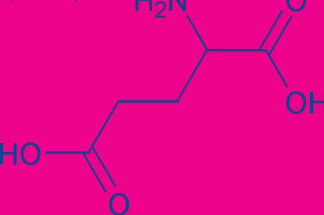


Gln

Glutamine

E

147.13
129.11
C₅H₉NO₄

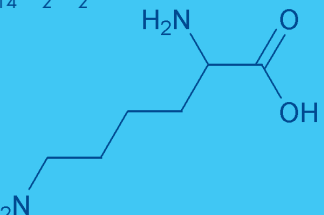


Glu

Glutamic Acid

K

146.19
128.17
C₆H₁₄N₂O₂

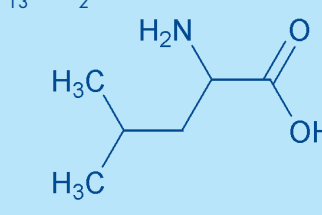


Lys

Lysine

L

131.18
113.16
C₆H₁₃NO₂

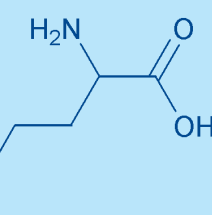


Leu

Leucine

M

149.21
131.20
C₅H₁₁NO₂S



Met

Methionine

N

132.12
114.10
C₄H₈N₂O₃

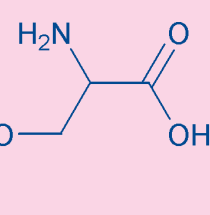


Asn

Asparagine

S

105.09
87.08
C₃H₇NO₃

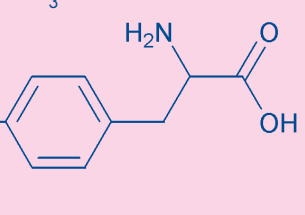


Ser

Serine

Y

181.19
163.17
C₉H₁₁NO₃

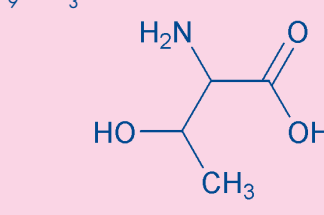


Tyr

Tyrosine

T

119.12
101.10
C₄H₉NO₃

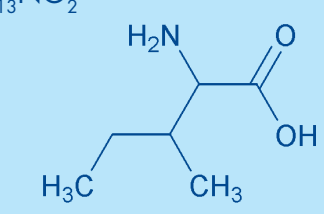


Thr

Threonine

I

131.18
113.16
C₆H₁₃NO₂

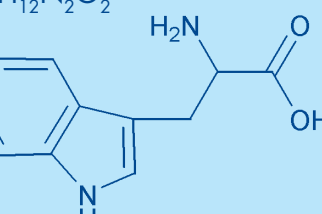


Ile

Isoleucine

W

204.23
186.21
C₁₁H₁₂N₂O₂




Trp

Tryptophan

P

115.13
97.12
C₅H₉NO₂

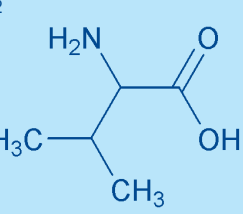


Pro

Proline

V

117.15
99.13
C₅H₁₁NO₂



Val

Valine

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

1-Letter Amino Acid Code

3-Letter Amino Acid Code

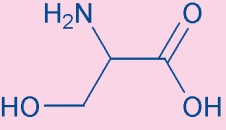
Relative Molecular Mass

M_r - H₂O

Molecular Formula

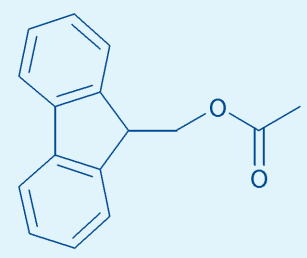
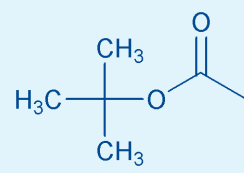
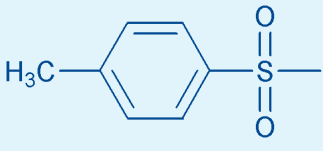
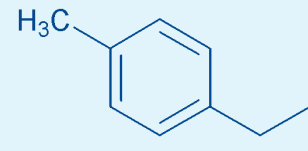
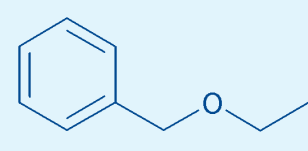
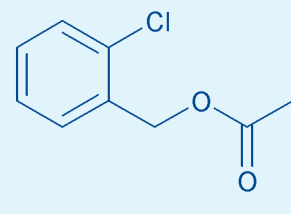
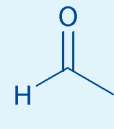
S

105.09
87.08
C₃H₇NO₃



Ser

Serine

Common Fmoc-Strategy SPPS* Protecting Groups	Absorption and Emission Characteristics of Chromophores and Fluorophores	Common Boc-Strategy SPPS* Protecting Groups																																													
<div><div>Fmoc 9-Fluorenylmethoxy-carbonyl M_r = 223.25</div><div></div></div>	<table><tr><th>Fluorophore</th><th>Excitation Wavelength</th><th>Emission Wavelength</th></tr><tr><td>Abz (2-Aminobenzoyl or Anthraniloyl)</td><td>320 nm</td><td>420 nm</td></tr><tr><td>N-Me-Abz (N-Methyl-anthraniloyl)</td><td>340 - 360 nm</td><td>440 - 450 nm</td></tr><tr><td>AFC (7-Amido-4-trifluoromethylcoumarin)</td><td>395 - 400 nm</td><td>495 - 505 nm</td></tr><tr><td>AMC (7-Amido-4-methylcoumarin)</td><td>360 - 380 nm</td><td>440 - 460 nm</td></tr><tr><td>Dansyl (5-(Dimethylamino)naphthalene-1-sulfonyl)</td><td>342 nm</td><td>562 nm</td></tr><tr><td>EDANS (5-[(2-Aminoethyl)amino] naphthalene-1-sulfonic acid)</td><td>340 nm</td><td>490 nm</td></tr><tr><td>FITC (Fluorescein isothiocyanate)</td><td>490 nm</td><td>520 nm</td></tr><tr><td>Mca ((7-Methoxycoumarin-4-yl)acetyl)</td><td>325 nm</td><td>392 nm</td></tr><tr><td>4MbNA (4-Methoxy-β-naphthylamide)</td><td>335 - 350 nm</td><td>410 - 440 nm</td></tr><tr><td>βNA (β-Naphthylamide)</td><td>320 - 340 nm</td><td>410 - 420 nm</td></tr><tr><td>Trp (Tryptophan)</td><td>280 nm</td><td>360 nm</td></tr><tr><td></td><td></td><td></td></tr><tr><th>Chromophore</th><th>Extinction Wavelength</th><th>Molar Extinction Coefficient</th></tr><tr><td>pNA (p-Nitroanilide)</td><td>405 nm 410 nm</td><td>ε_{405 nm} = 9450 M⁻¹cm⁻¹ ε_{410 nm} = 8800 M⁻¹cm⁻¹</td></tr></table> <div><div>Values listed are as reported in the literature</div><div>*SPPS = Solid Phase Peptide Synthesis</div></div> <div>© Copyright by Bachem AG, Switzerland. Reproduction forbidden without permission.</div>	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	4MbNA (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	<div><div>Boc t-Butyloxycarbonyl M_r = 101.13</div><div></div></div> <div><div>Tos Tosyl M_r = 155.20</div><div></div></div> <div><div>MbzI 4-Methylbenzyl M_r = 105.16</div><div></div></div> <div><div>Bom Benzyloxymethyl M_r = 121.16</div><div></div></div> <div><div>2-Chloro-Z 2-Chlorobenzyloxy-carbonyl M_r = 169.59</div><div></div></div> <div><div>For Formyl M_r = 29.02</div><div></div></div>
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