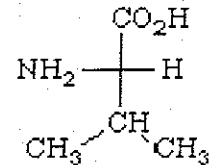
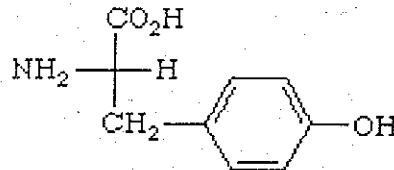
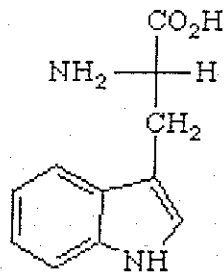
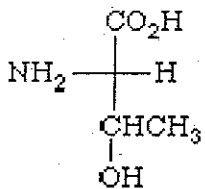
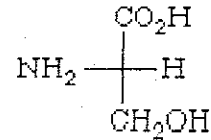
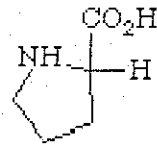
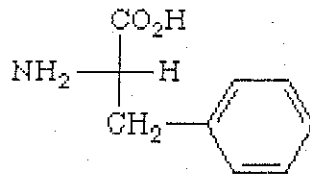
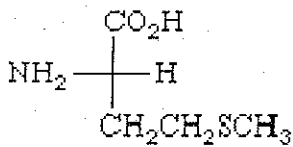
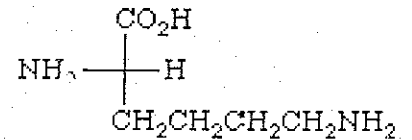
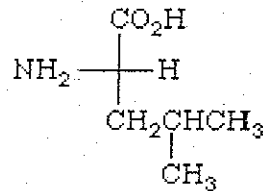
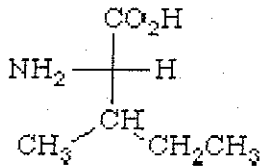
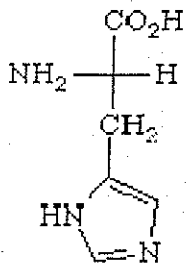
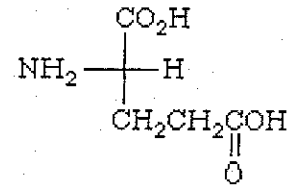
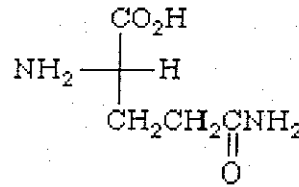
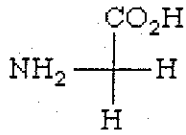
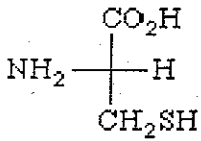
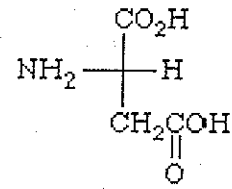
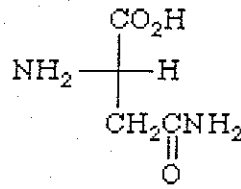
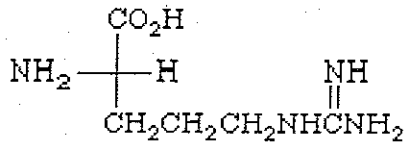
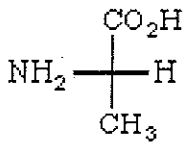


## Amino Acid Structures



<ul style="list-style-type: none"> <li>• Non-polar</li> <li>• Hydrophobic</li> </ul>		<ul style="list-style-type: none"> <li>• Negatively charged (acidic amino acids)</li> <li>• Polar</li> <li>• Hydrophilic</li> </ul>		<ul style="list-style-type: none"> <li>• No charge (non-acidic amino acids)</li> <li>• Polar</li> <li>• Hydrophilic</li> </ul>		<ul style="list-style-type: none"> <li>• Positively charged (basic amino acids; non-acidic amino acids)</li> <li>• Polar</li> <li>• Hydrophilic</li> </ul>	
Amino acid	pI	Amino acid	pI	Amino acid	pI	Amino acid	pI
<u>Phenylalanine</u> phe f	5.48	<u>Aspartic acid</u> asp d	2.77	<u>Cysteine</u> cys c	5.02	<u>Histidine</u> his h	7.47
<u>Methionine</u> met m	5.74	<u>Glutamic acid</u> glu e	3.22	<u>Asparagine</u> asn n	5.41	<u>Lysine</u> lys k	9.59
<u>Tryptophan</u> trp w	5.89			<u>Glutamine</u> gln q	5.65	<u>Arginine</u> arg r	11.15
<u>Isoleucine</u> ile i	5.94			<u>Threonine</u> thr t	5.64		
<u>Valine</u> val v	5.96			<u>Tyrosine</u> tyr y	5.66		
<u>Leucine</u> leu l	5.98			<u>Serine</u> ser s	5.68		
<u>Alanine</u> ala a	6.00			<u>Glycine</u> gly g	5.97		
<u>Proline</u> pro p	6.30						