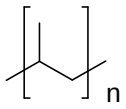
9. Übungen zur VL **Organische Chemie** für Studierende der Biologie im SS 2010

1a. Aus welcher Substanz wird das hier abgebildete Polymer hergestellt?



1b. Formulieren Sie einen kationischen und den radikalischen Reaktionsmechanismus der entsprechenden Polymerisation;
1c. welches Polymer würden Sie bei der Polymerisation von But-2-en erwarten?
1d. welches Polymer würden Sie bei der Polymerisation von 2-Methylbut-2-en erwarten?

2. Versuchen Sie sich an eigenen Definitionen der Begriffe:

Peptide	Polymere
Kohlenhydrate	Eiweiße/Proteine
Peptidbindung	Aminosäuren
DNA	Fette

3. Geben sie den vollständigen Mechanismus einer Aminosäuresynthese nach Strecker ausgehend von Propanal an.

4a. Geben Sie die Strukturen und die 3-Buchstabencodes folgender Aminosäuren in „natürlicher Konfiguration“ an:
Alanin, Serin und Cystein
Glutaminsäure und Asparaginsäure
Prolin, Valin und Isoleucin

4b. Warum ist Isoleucin eine ganz spezielle Aminosäure?
Wieviel Stereoisomere gibt es von dieser Aminosäure?

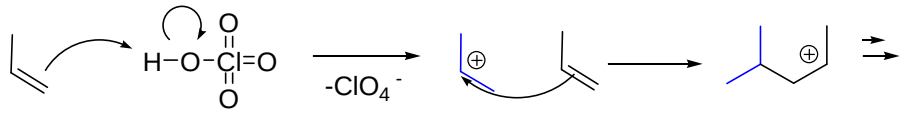
4c. Zeichnen Sie die genannten Aminosäuren in der Fischer-Projektion (L und S angeben!)

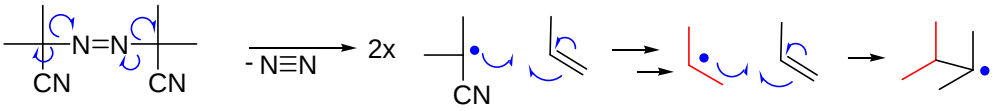
4c. L-Alanin, L-Valin und Glycin ergeben durch zwei Peptidkupplungen ein Tripeptid.
Wie viele Kombinationen der Produkte sind hier möglich? Zeichnen sie zwei davon.

Antworten:

1a: Propen

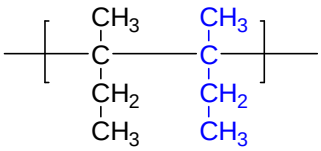
1b:



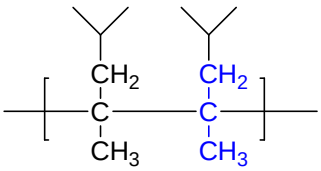


AIBN
(Radikalstarter)

1c:

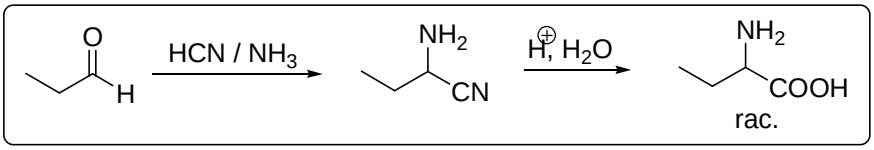


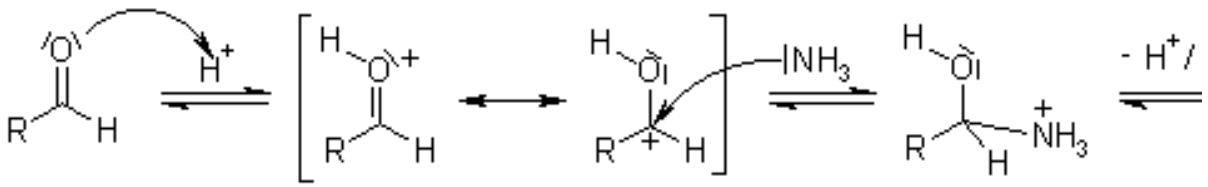
1d:

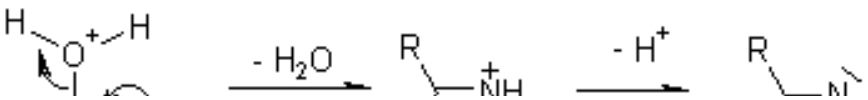


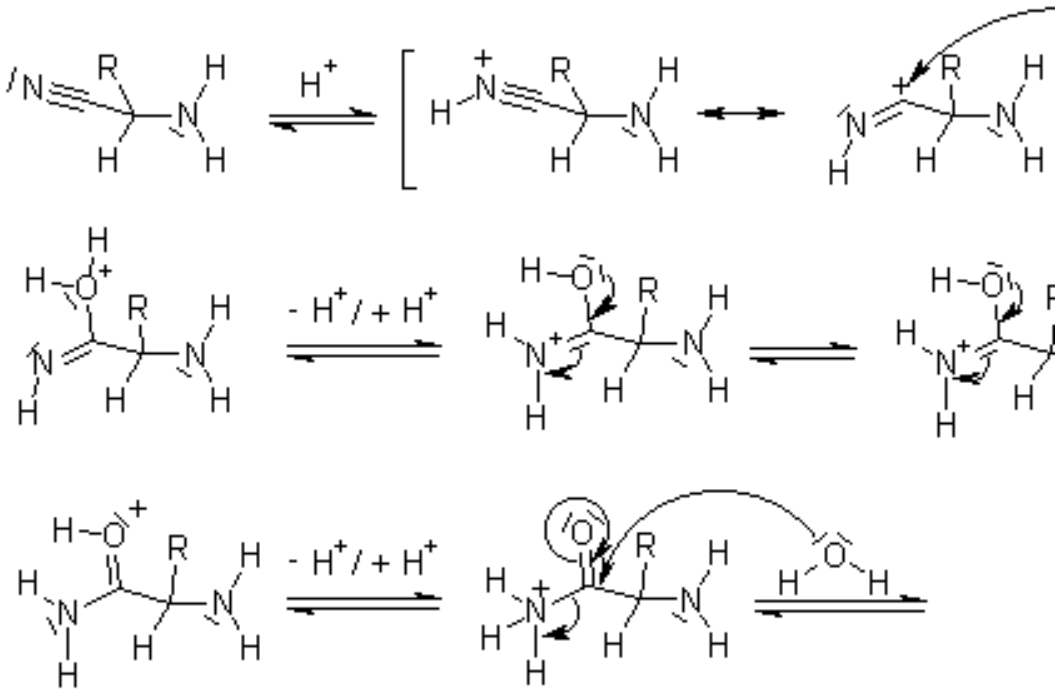
2: Lehrbücher oder Internet: Selbsstudium und Selbstdefinition!!

3:

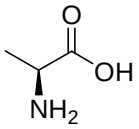
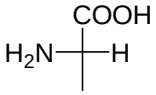
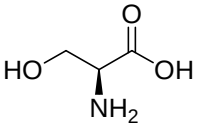
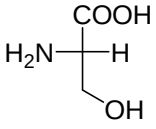
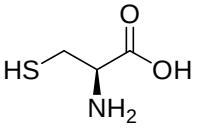
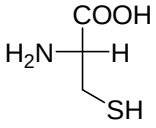
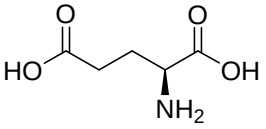
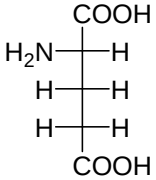
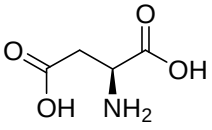
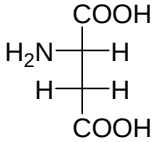
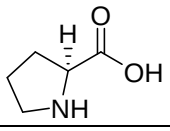
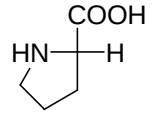


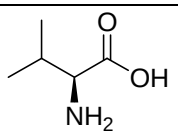
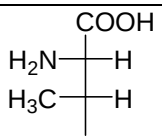
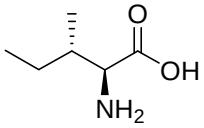
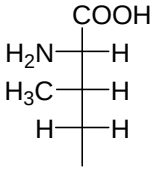






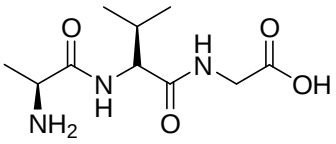
4a:

Verbindung	3 Buchstabencode	Struktur	Fischer-Projektion
Alanin	Ala		
Serin	Ser		
Cystein	Cys		
Glutaminsäure	Glu		
Asparaginsäure	Asp		
Prolin	Pro		

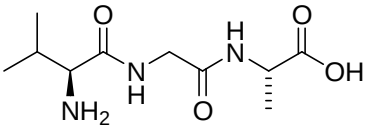
Valin	Val		
Isoleucin	Ile		

Möglichkeiten 9

Beispiele:



AlaValGly



ValGlyAla

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