



Grundlagen der organischen Chemie II

Peptides 3

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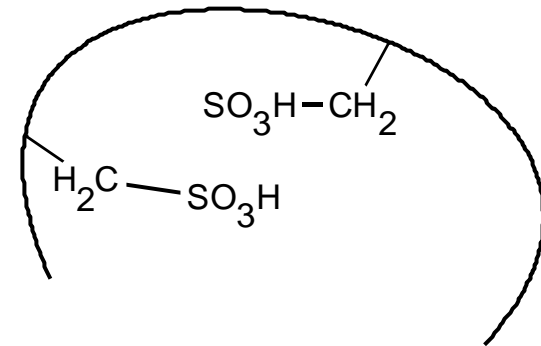
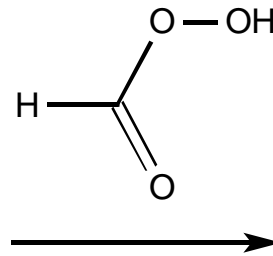
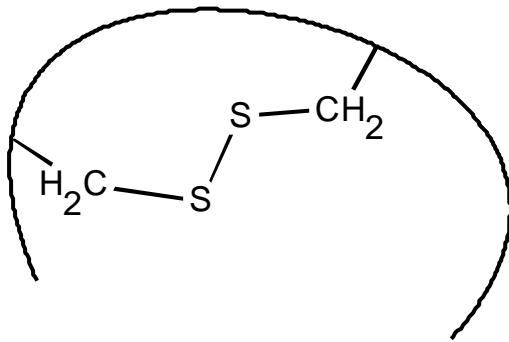


Strukturbestimmung

1. Disulfidbindungen spalten
2. Gesamtaminosäuren bestimmen
3. Sanger-Methode
4. Enzymatische Hydrolyse
5. Bromcyan
6. Partielle Hydrolyse
7. Edman-Degradierung



Disulfidbindungen





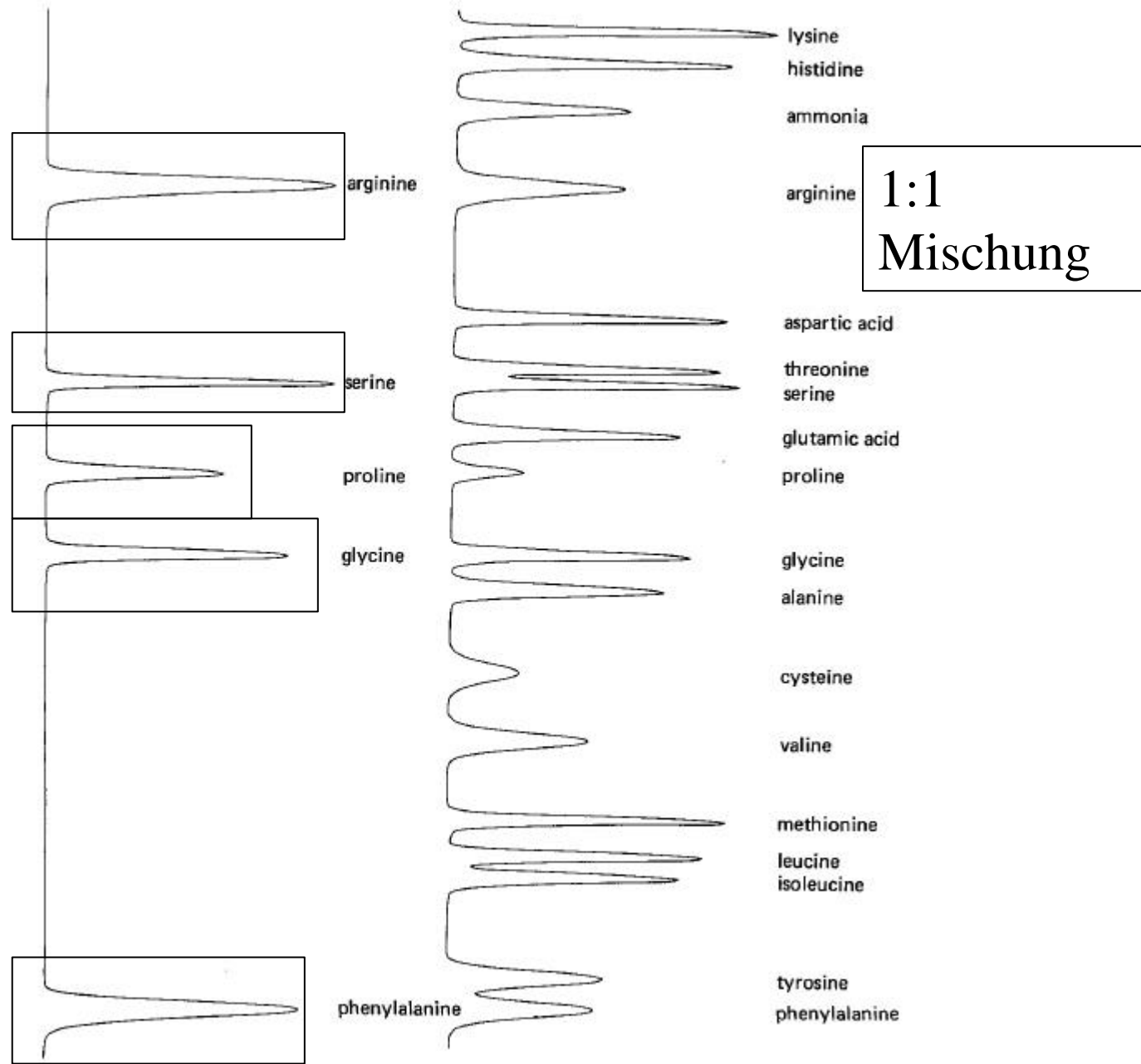
Gesamtaminosäuren

- Gesamthydrolyse (6N HCl, 112°, 24 – 72 St.)
- Chromatographie
 - Wässrige Pufferlösung
 - Ionenaustauschsäule
 - Ninhydrin
 - Spektrophotometer
 - quantitativ



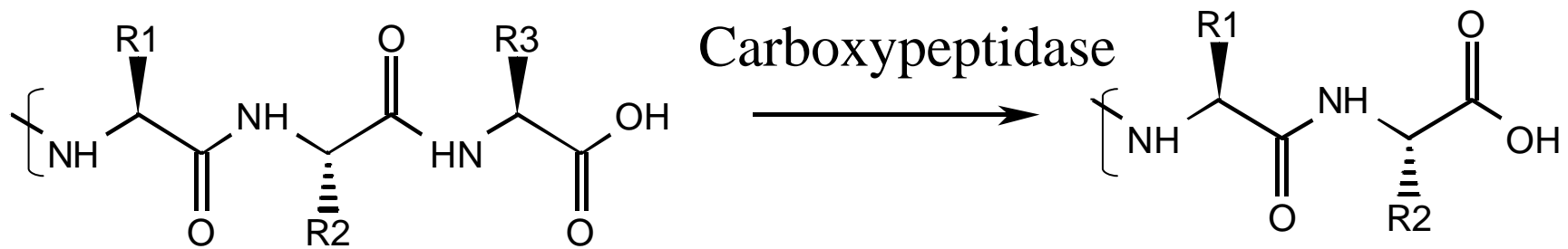
Bradykinin

Arg
Pro
Pro
Gly
Phe
Ser
Pro
Phe
Arg

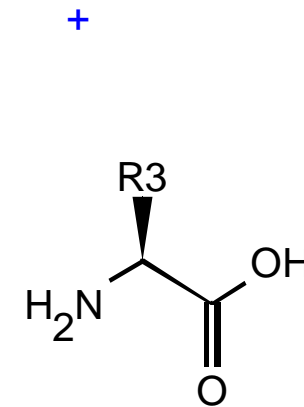




Carboxypeptidase (C-terminale AS)

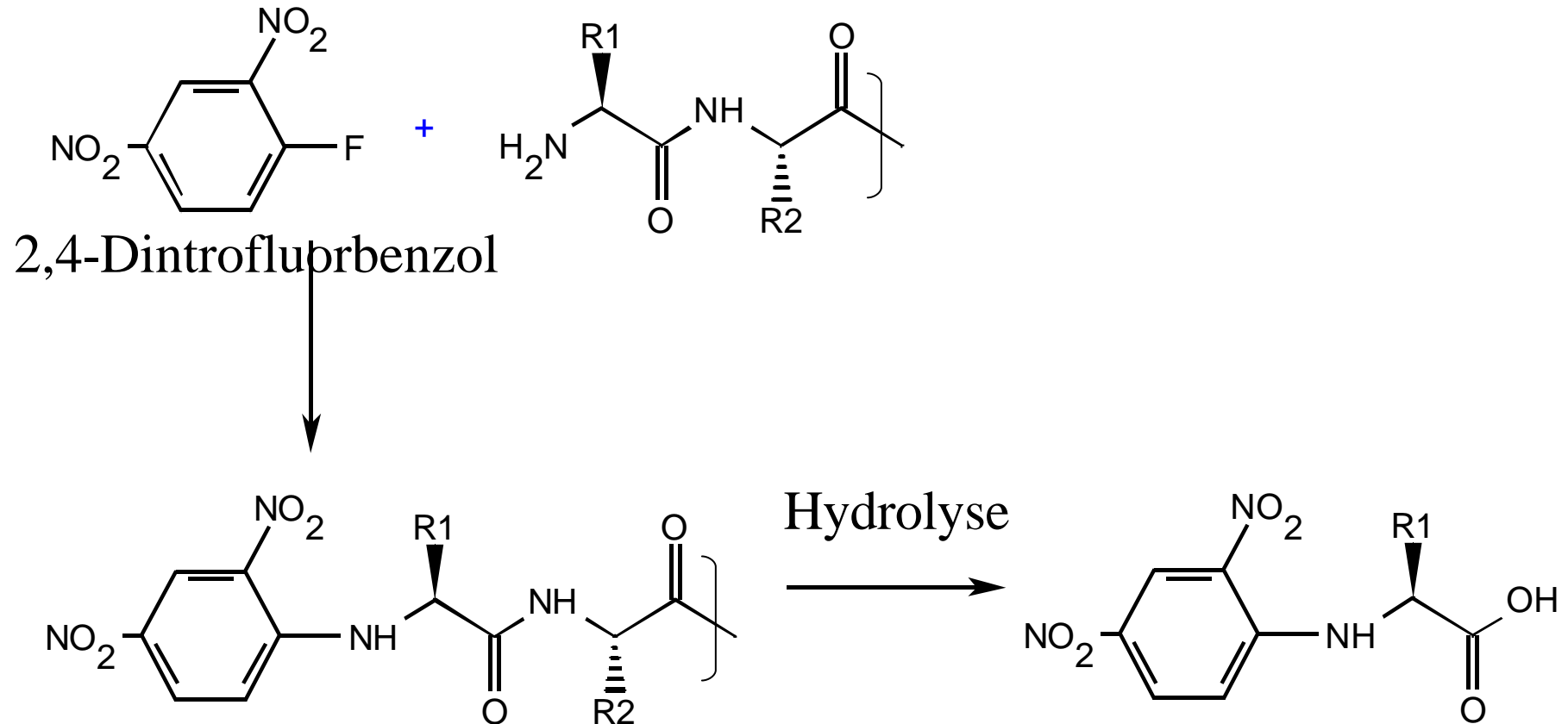


3-4 Aminosäuren können
So identifiziert werden





Die Sanger-Methode (N-terminale AS)



N-(2,4-Dinitrophenyl)aminosäure (gelb)



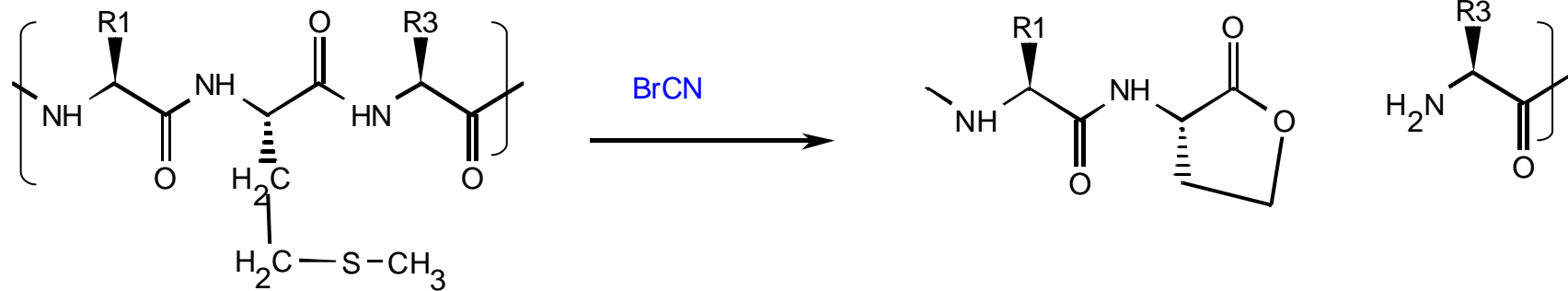
Partielle Hydrolyse

- Bromcyan
- Proteasen

Trypsin	Lys, Arg
Chymotrypsin	Phe, Trp, Tyr
Pepsin	Phe, Trp, Tyr, Leu, Asp, Glu



Bromcyan

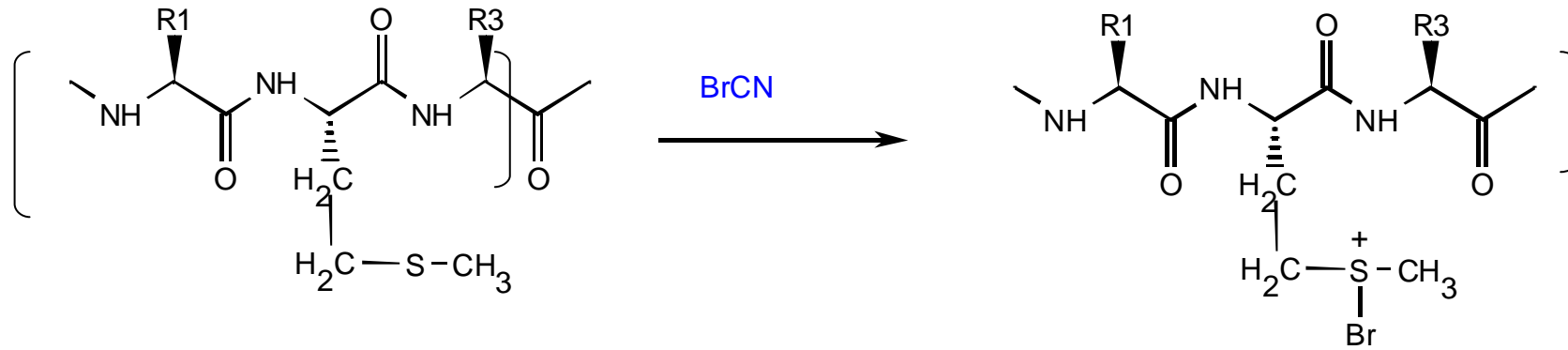


Methionin

Homoserin-Lacton



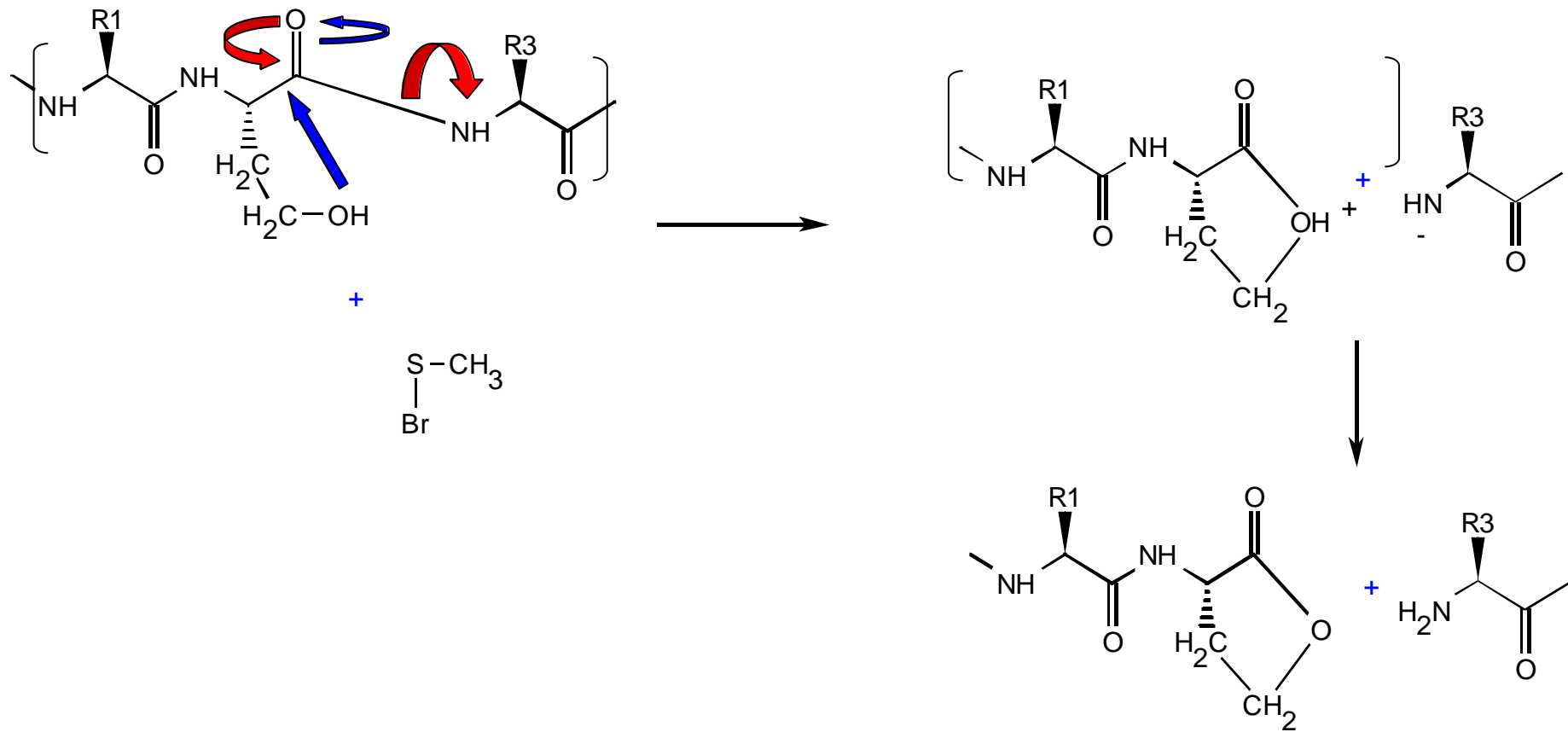
Bromcyan



Methionin



Bromcyan





Partielle Hydrolyse

Ala-Leu-Gly-Met-Lys-Trp-Phe-Arg-Ala-Ala-Ser-Met-Ala-Phe-Lys-Leu-Gly-Leu-Leu-Phe



Partielle Hydrolyse

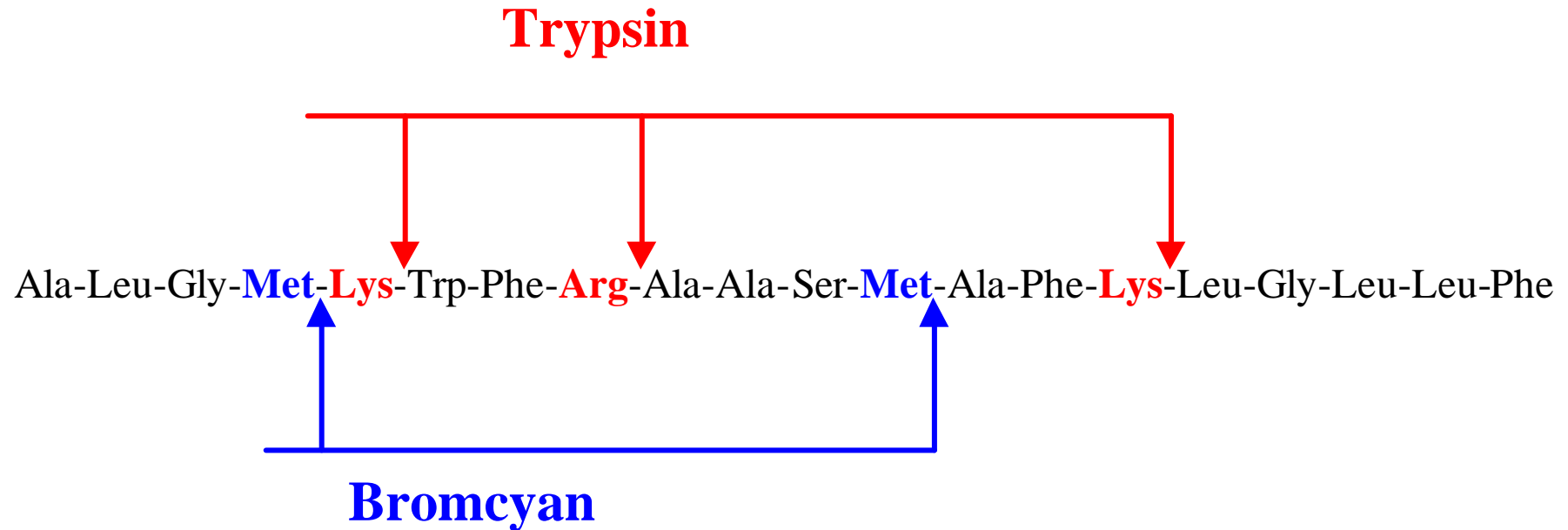
Ala-Leu-Gly-**Met**-Lys-Trp-Phe-Arg-Ala-Ala-Ser-**Met**-Ala-Phe-Lys-Leu-Gly-Leu-Leu-Phe



Bromcyan



Partielle Hydrolyse





Partielle Hydrolyse

Ala-Leu-Gly-**Met**

Lys-Trp-Phe-**Arg**-Ala-Ala-Ser-**Met**

Ala-Phe-**Lys**-Leu-Gly-Leu-Leu-Phe

Bromcyan

Ala-Leu-Gly-**Met-Lys**

Trp-Phe-**Arg**

Ala-Ala-Ser-**Met**-Ala-Phe-**Lys**

Leu-Gly-Leu-Leu-Phe

Trypsin

Ala-Leu-Gly-**Met-Lys**-Trp-Phe-**Arg**-Ala-Ala-Ser-**Met**-Ala-Phe-**Lys**-Leu-Gly-Leu-Leu-Phe



Partielle Hydrolyse

Ala-Leu-Gly-**Met**

Ala-Leu-Gly-**Met-Lys**

Lys-Trp-Phe-**Arg**-Ala-Ala-Ser-**Met**

Trp-Phe-**Arg**

Ala-Ala-Ser-**Met**-Ala-Phe-**Lys**

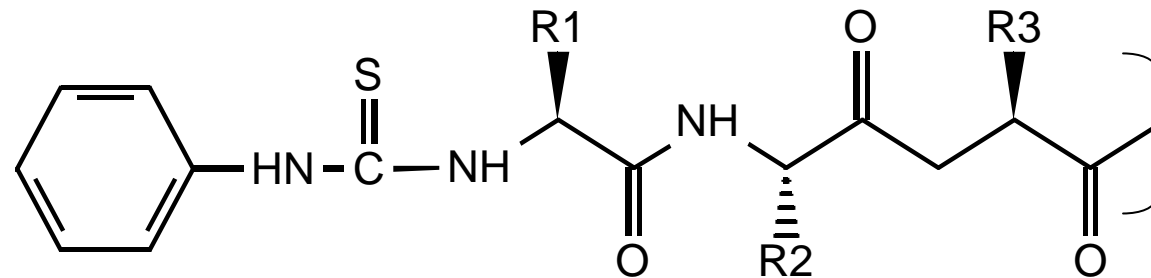
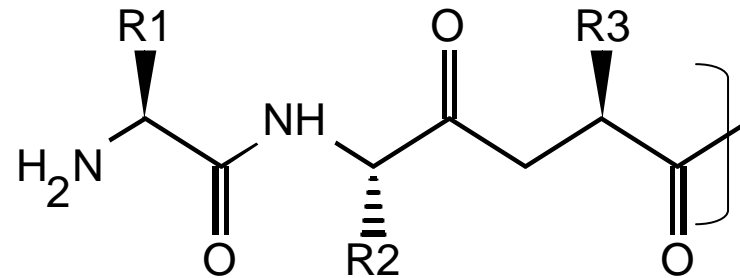
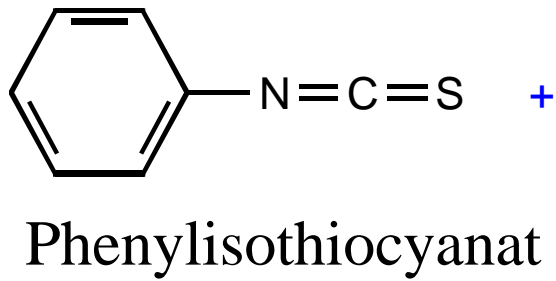
Ala-Phe-**Lys**-Leu-Gly-Leu-Leu-Phe

Leu-Gly-Leu-Leu-Phe

Ala-Leu-Gly-**Met-Lys**-Trp-Phe-**Arg**-Ala-Ala-Ser-**Met**-Ala-Phe-**Lys**-Leu-Gly-Leu-Leu-Phe



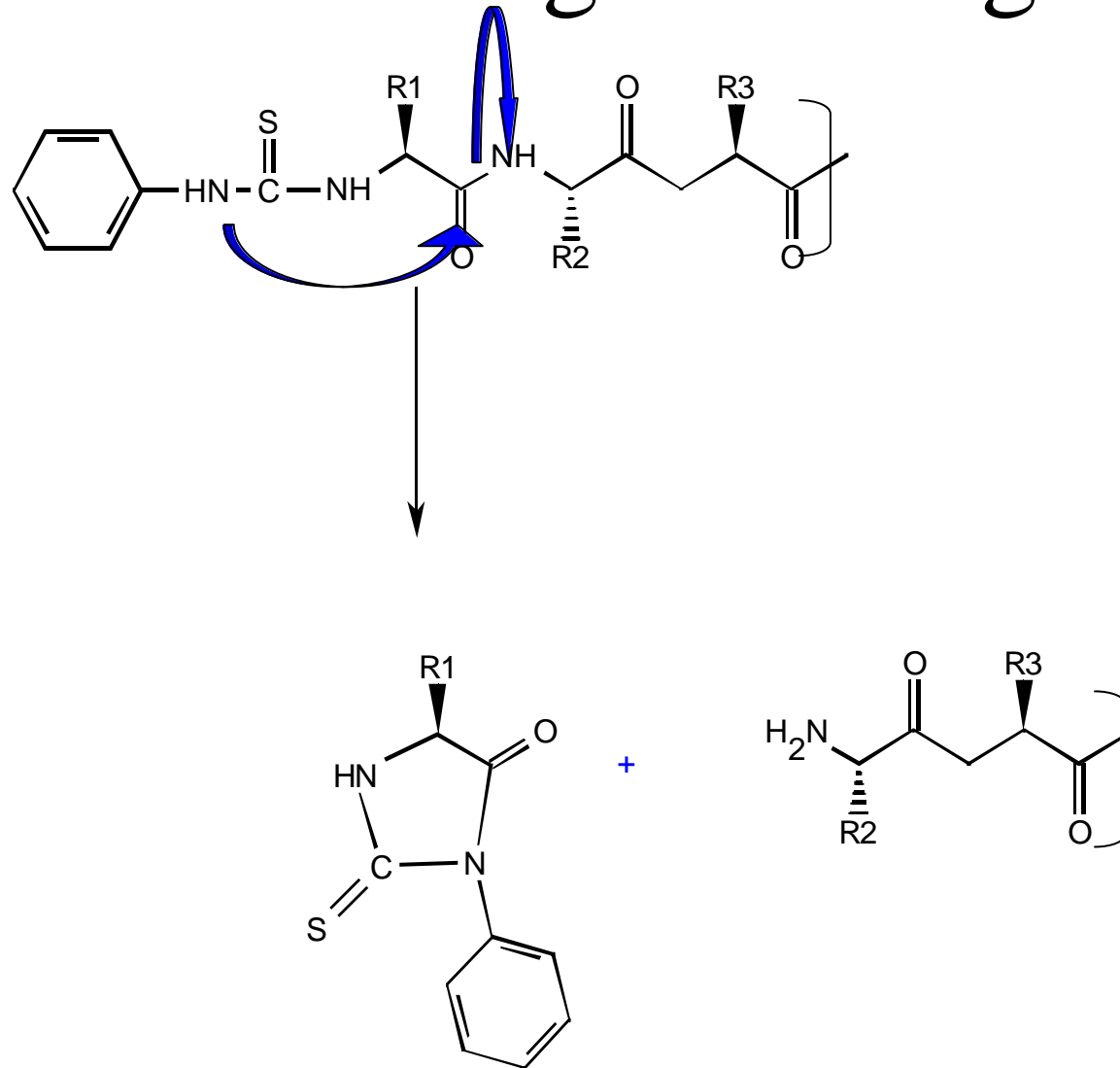
Edman-Degradierung



Phenylthiobarbamoylpeptid



Edman-Degradierung



Phenylthiohydantoin



Edman-Degradierung

- Peptid mit 1 Äq. Phenylisothiocyanat reagieren
- Phenylthiohydantoin der N-terminalen AS identifizieren
- Restpeptid mit 1 Äq. Phenylisothiocyanat reagieren
- Phenylthiohydantoin der AS₂ identifizieren
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Automatische Sequenzanalyse

