

hey

AA = Amino Acid

Translation

What is it? What does it require?

Polymerizing AA into polypeptide chains

Describe the Small and large subunit of ribosomes.

large - 23S RNA (biggest & most important)

small - 16S RNA = bacteria

18S RNA = Eukaryotes

Which srna is used for bacteria sequencing?

16S RNA

What is tRNA and what does it mean by charging? What charges it?

has the 3 ribonucleotide opposite of strand
used to match code to correct AA

charging = Adding correct AA (by Aminoacyl tRNA synthetase)

What is required for initiation?

small & large subunit

mRNA

GTP

charged tRNA

Mg²⁺

initiation factors

What is the shine-Dalgarno sequence?

ACG ACG - Before AUG

tells tRNA where AUG is

Describe the 3 sites of the ribosome. What does each do?

A = enter

P = peptide bond formed

E = exit

Describe termination

stop codons

GTP - helps release strand from complex

What are polysomes?

mRNAs w/ many ribosomes translating at once

Describe translation of eukaryotes.

- in cytoplasm
- 5' cap sequence
- Needs more factors
- ribosomes Not free floating
- closed loop

What is a closed loop translation?

- Poly A tail "holds hands" w/ 5' cap



We talked about errors in metabolism. Define the two we talked about.

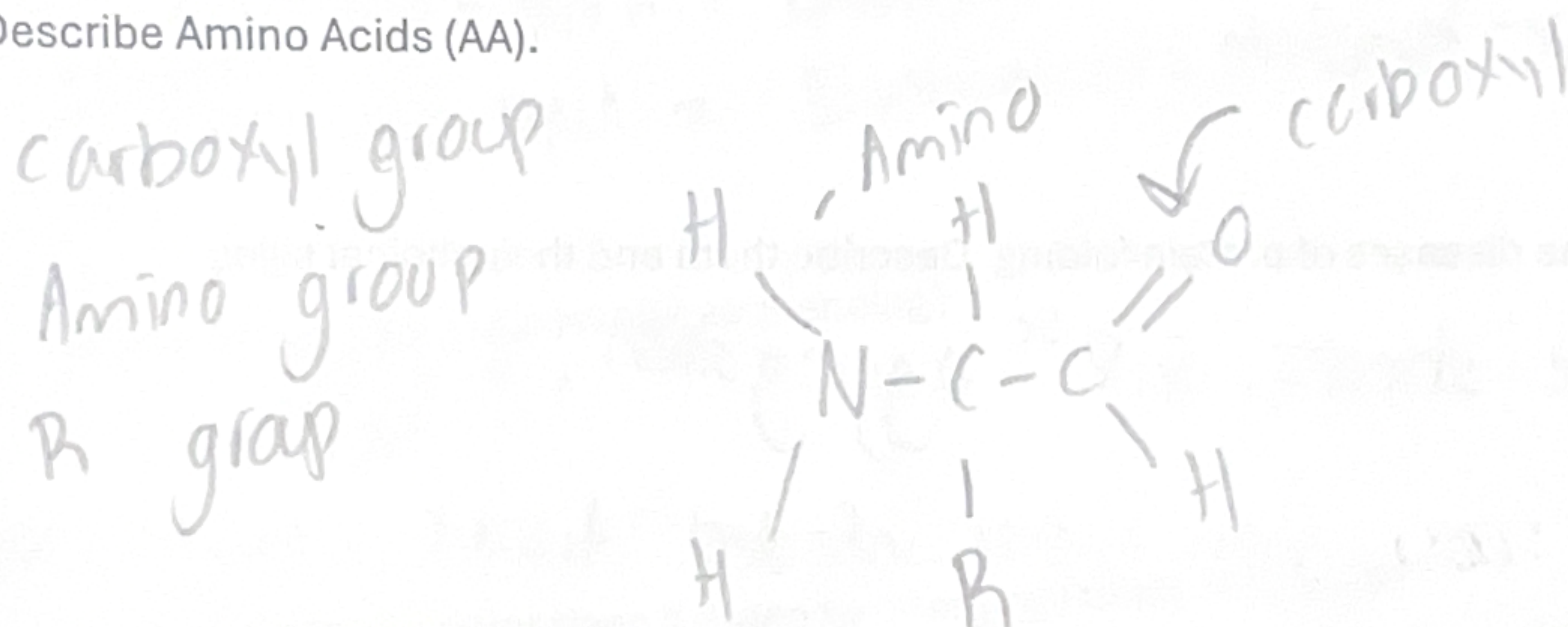
Alkaptonuria - can't metabolize alkapton

Phenylketonuria - can't convert phenylalanine to tyrosine (can cause mental retardation)

What is the relationship between polypeptides and proteins?

Polypeptides form proteins

Describe Amino Acids (AA).



How are peptide bonds formed?

Dehydration from carboxyl to Amino of another AA

Describe the 4 protein structure levels.

Primary - linear

secondary - alpha helix & beta sheets (hydrogen bond)

tertiary - 3D

quaternary - many polypeptide chains (hemoglobin)

Describe post-translational modifications.

Modifying chains to make them functional

Describe protein folding.

require chaperone proteins

can cause prions

shape = function

What are the diseases of protein folding. Describe them and their clinical signs.

Scrapie - sheep, PrP^{Sc} aggregation, 3 steps

BSE: cow, from eating infected tissue, causes vCJD
in people

weight loss, aggression, behavioral changes, tremors
death

The end of this chapter talked about the "diverse role of proteins". Please list a few of these roles.

structural, contractile, hormones, enzymes, transport
protein, and histones