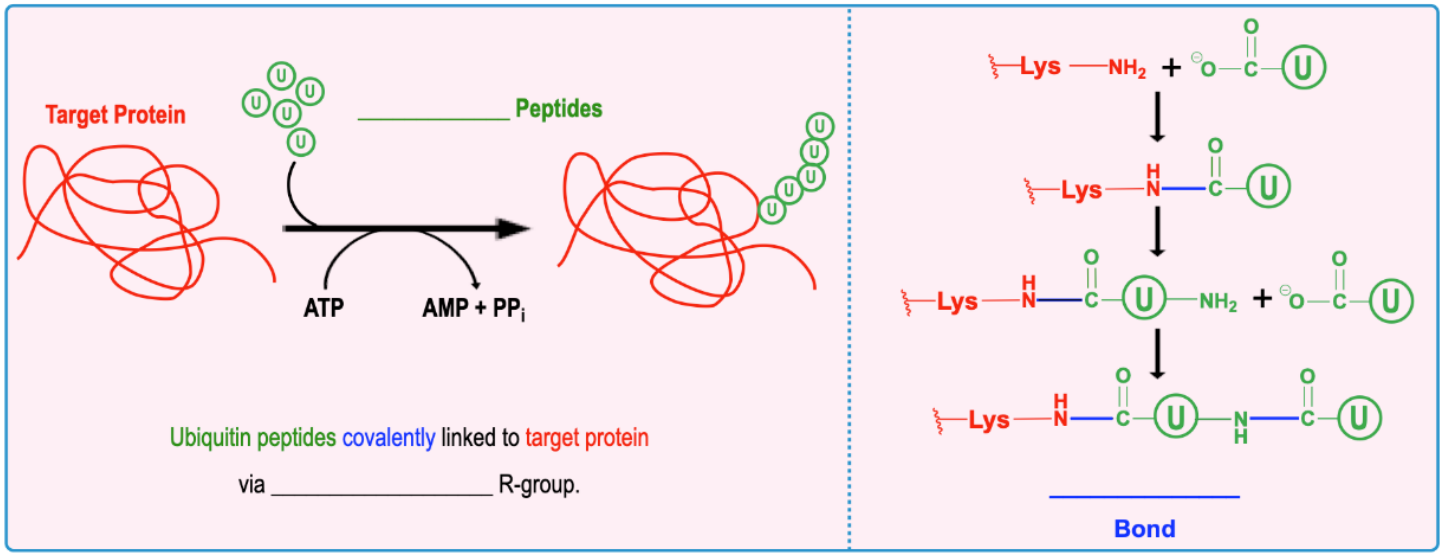
CONCEPT: UBIQUITINATION

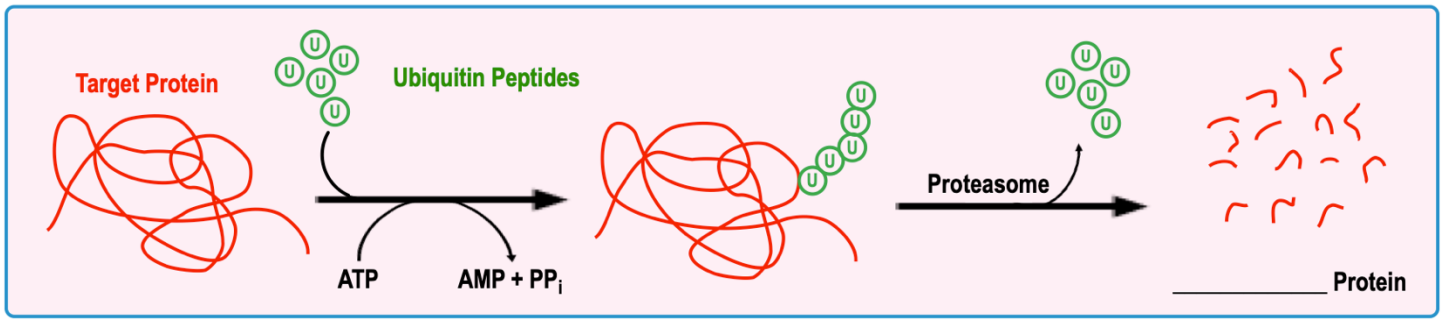
- _____: a highly conserved and *prevalent/ubiquitous* small protein (76 amino acid residues).
- *Ubiquitination*: an _____-dependent process involving the *covalent* attachment of *ubiquitin* to a target-protein.
  - □ R-group of lysine (_____) amino acid residues are susceptible to *ubiquitination*.
  - □ Multiple ubiquitin peptides link together to form a _____ on the target protein.

EXAMPLE: Ubiquitination.



Ubiquitination Targets Proteins

- Ubiquitination marks proteins for _____ by *proteasomes*.
  - □ Proteasome: protein *complex* specialized for _____ activity (breaking down proteins).
  - □ Ubiquitination can _____ cellular protein concentration & therefore can *decrease* an enzyme's _____.
  - □ Capable of regulating virtually every cellular process.



CONCEPT: UBIQUITINATION

PRACTICE: _____ involves covalent attachment of peptides leading to _____ of the target protein by _____.

a) Ubiquitination ; Activation ; Proteasome.
b) Glycosylation ; Degradation ; Ribosome.
c) Ubiquitination ; Degradation ; Proteome.
d) Ubiquitination ; Degradation ; Proteasome.
e) Acetylation ; Activation ; Proteasome.

PRACTICE: Which of the following is true regarding protein ubiquitination?

a) Ubiquitin tagged proteins are usually degraded in the cell.
b) Ubiquitin is a ubiquitous, small nucleotide.
c) Covalent attachment of ubiquitin usually occurs via the R groups of methionine amino acid residues.
d) Ubiquitin links to the target protein only via hydrogen bonds.
e) Only a and c are true.
f) All of the above are true.
g) None of the above are true.

PRACTICE: Ligation of a ubiquitin peptide's _____ charged carboxylate group to the R-group of a target protein's _____ residue forms a(n) _____ bond.

a) Neutrally ; Histidine ; Hydrogen.
b) Negatively ; Leucine ; Isopeptide.
c) Positively ; Lysine ; Ionic.
d) Positively ; Lysine ; Disulfide.
e) Negatively; Lysine ; Hydrogen.
f) Negatively ; Lysine ; Isopeptide.