- PTMs involving unique modifications of translation factors
  - Diphthamide formation (on a histidine found in eEF2)
  - Ethanolamine phosphoglycerol attachment (on glutamate found in eEF1α)
  - Hypusine formation (on conserved lysine of eIF5A [eukaryotic] and aIF5A [archeal])
- PTMs involving addition of smaller chemical groups
  - Acylation, for example, *O*-acylation (esters), *N*-acylation (amides), and *S*-acylation (thioesters)
    - Acetylation, the addition of an acetyl group, either at the *N*-terminus of the protein or at lysine residues. The reverse is called deacetylation
    - Formylation
  - Alkylation, the addition of an alkyl group, for example, methyl and ethyl
    - Methylation by the addition of a methyl group, usually at lysine or arginine residues. The reverse is called demethylation
  - Amide bond formation
    - Amidation at *C*-terminus
    - Amino acid addition
      - Arginylation, a tRNA-mediation addition
      - Polyglutamylation, covalent linkage of glutamic acid residues in the *N*-terminus of tubulin and some other proteins (see tubulin polyglutamylase)
      - Polyglycylation, covalent linkage of one to more than 40 glycine residues in the tubulin *C*-terminal tail
  - Butyrylation
  - Gamma-carboxylation dependent on Vitamin K
  - Glycosylation, the addition of a glycosyl group to either arginine, asparagine, cysteine, hydroxylysine, serine, threonine, tyrosine, or tryptophan, resulting in a glycoprotein; distinct from glycation, which is regarded as a nonenzymatic attachment of sugars
    - Polysialylation, the addition of polysialic acid (PSA) to NCAM
  - Malonylation
  - Hydroxylation
  - Iodination (e.g., of thyroglobulin)
  - Nucleotide addition, such as ADP-ribosylation
  - Oxidation
  - Phosphate ester (O-linked) or phosphoramidate (N-linked) formation
    - Phosphorylation, the addition of a phosphate group, usually to serine, threonine, and tyrosine (O-linked) or histidine (N-linked)
    - Adenylylation, the addition of an adenylyl moiety, usually to tyrosine (O-linked) or histidine and lysine (N-linked)