

Protein Sequencing: Edman's Chemistry

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N-terminal sequencing cycle

The chemical reactions that yield the hydrolyzed N-terminal labeled amino acid are shown below. Each cycle includes essentially 3 steps:

- (i) Coupling of the phenylisothiocyanate (PITC, Edman reagent).
- (ii) Cleavage under mild acidic conditions.
- (iii) Conversion to a more stable phenylthiohydantoin (PTH) derivative.

The resulting PTH residue is analyzed by HPLC and retention times compared to that of standards PTH amino acids.

