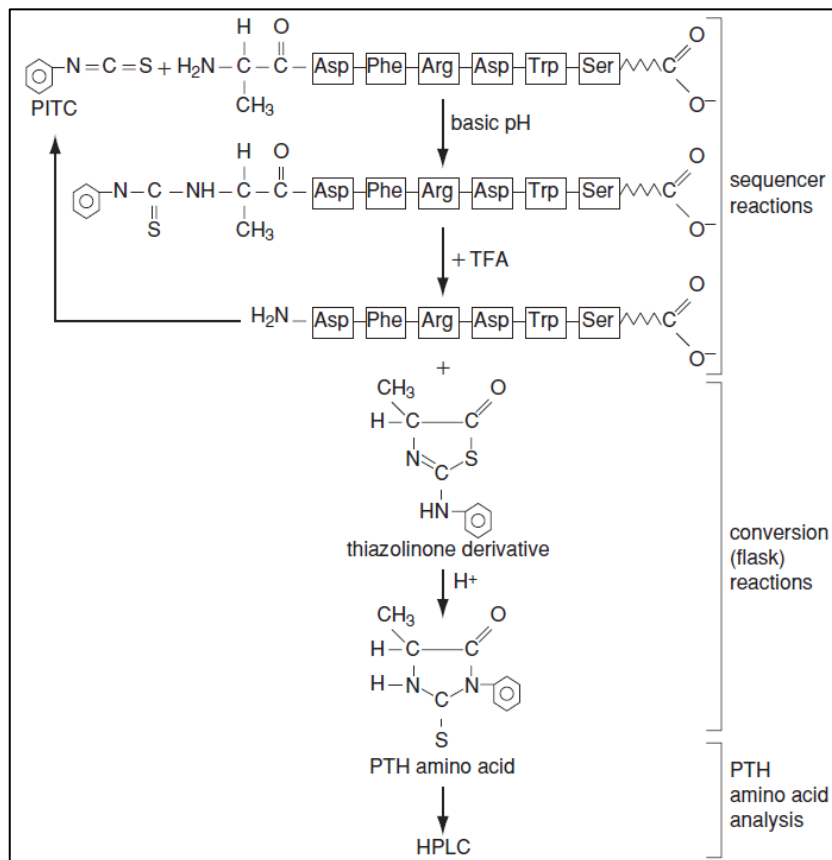


## Intro

The chemical process used in the Procise system is derived from the technique developed by Pehr Edman in the 1950s for the sequential degradation of proteins and peptides. The Edman degradation chemistry is a cyclic procedure where the phenyl isothiocyanate (PITC) reagent is coupled to the free N-terminal amino group and selectively removed the resulting derivatized amino acid with acid, leaving the rest of the peptide chain intact. The cleaved unstable ATZ (anilinothiazolinone) derivative of the amino acid is converted into the corresponding stable PTH-amino acid (phenylthiohydantoin) before being automatically injected onto an HPLC system. Data from the HPLC is collected on a computer and identification of the amino acids is achieved by their elution times compared to a standard mixture. The Edman degradation reaction cycle is repeated and a sequence of N-terminal amino acids is determined. The coupling and cleavage reaction efficiency is not 100% and in practice limits the number of residues that can be sequenced to 5-50 amino acids.



Edman chemistry and automated N-terminal sequence analysis