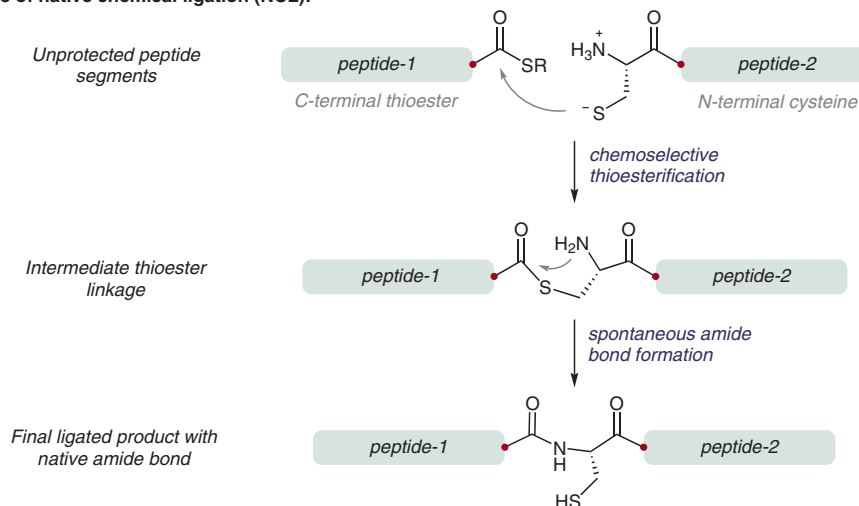
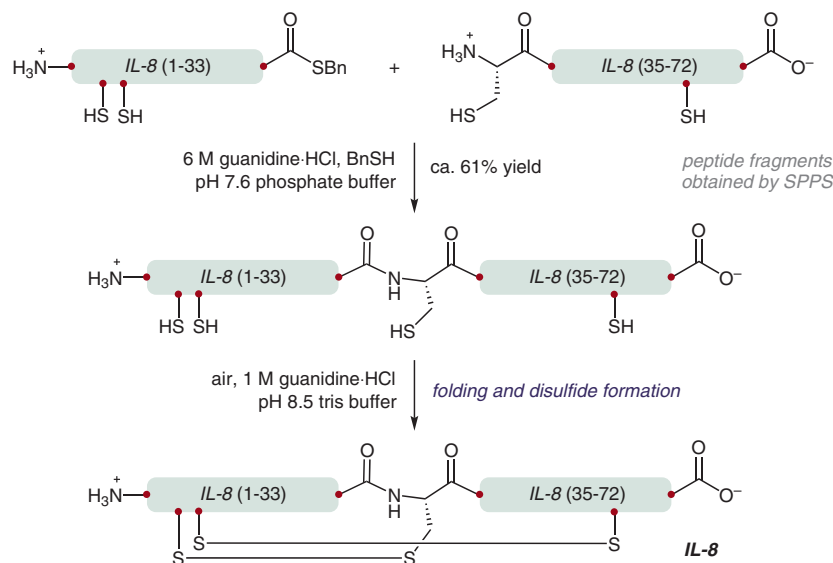


# Synthesis of Human Interleukin-8 by Native Chemical Ligation

## Principle of native chemical ligation (NCL):



## Synthesis of human interleukin 8 (IL-8) via NCL:



**Significance:** The realization that unprotected peptide thioesters react chemoselectively with unprotected *N*-terminal cysteine residues to form amide linkages is an important advancement in protein synthesis. Native Chemical Ligation (NCL) allows synthetic access to proteins of moderate size.

**Comment:** NCL proceeds by the formation of an intermediate thioester linkage with cysteine that then spontaneously rearranges to the native amide bond. This strategy was applied to the total chemical synthesis of human interleukin 8 (IL-8), a 72-amino acid protein containing four cysteine residues.