

Ensuring protein diversity

HOW?

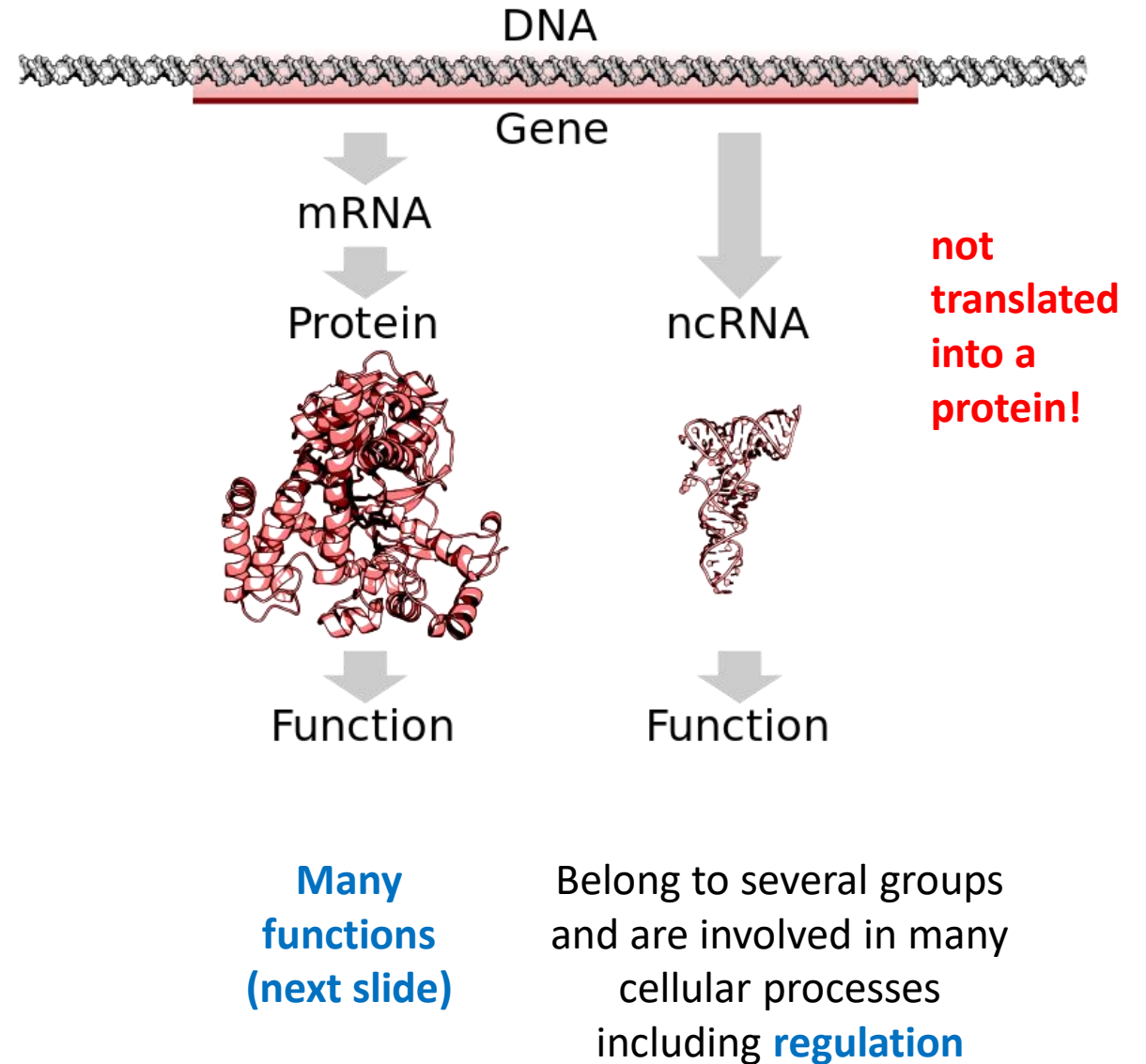


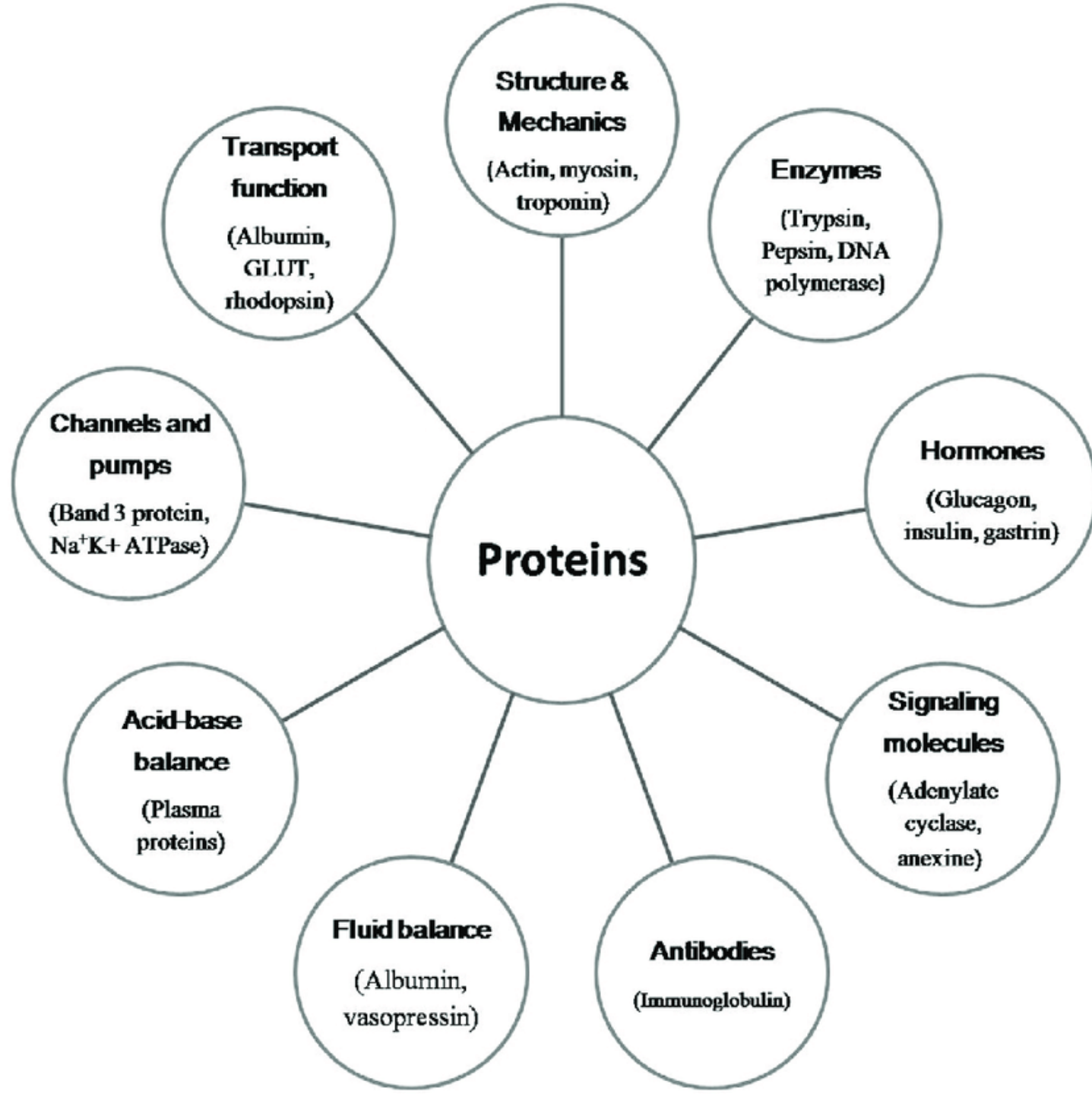
**How many genes human genome has?**

**Protein coding genes – what proportion?**

Protein coding genes:  
**19,000-20,000**  
(~2% of the genome)

Genes expressing non-coding  
RNAs **do not encode proteins** –  
at least **49,000**





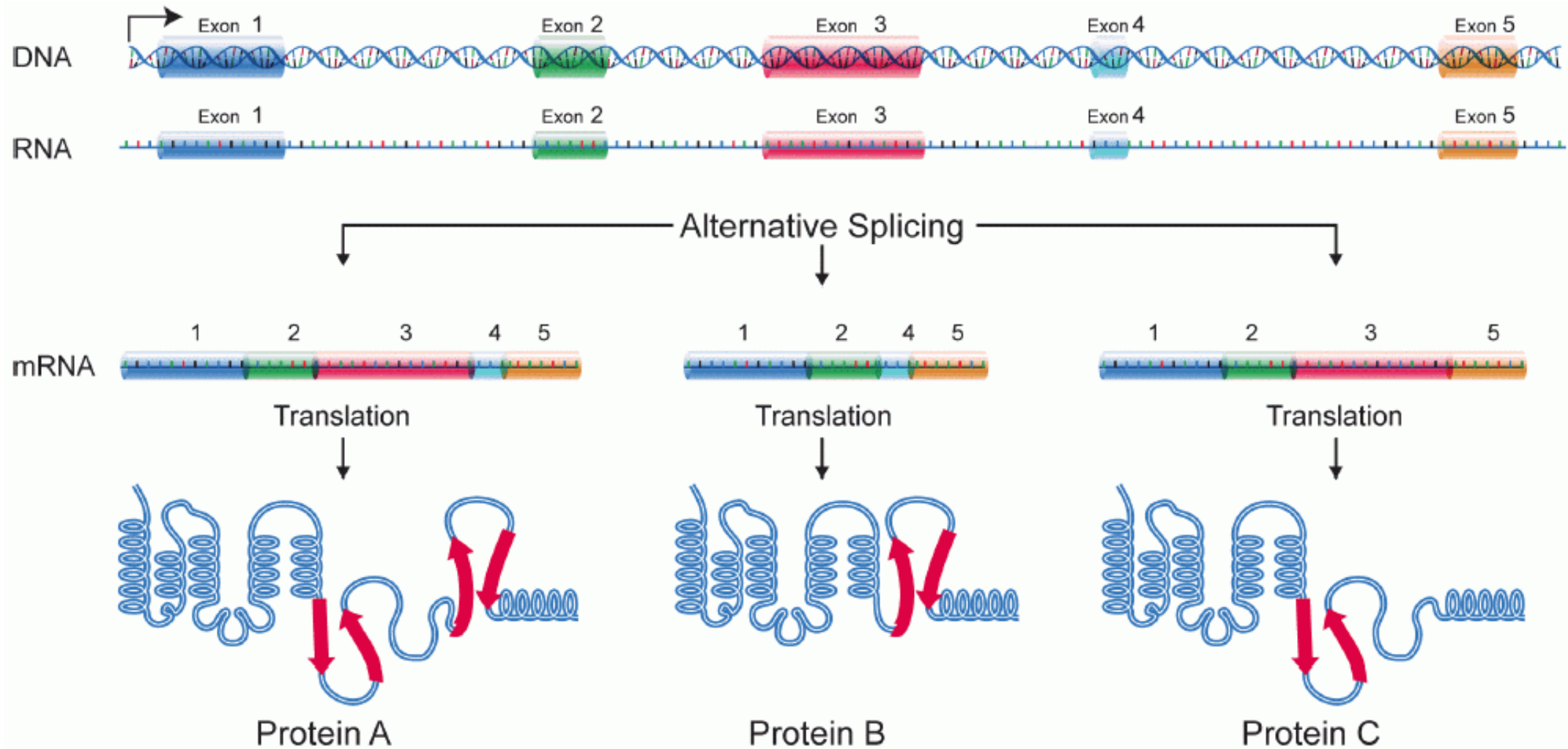


**How many different proteins in humans  
are currently known?**

92,179 proteins  
>200,000 protein isoforms

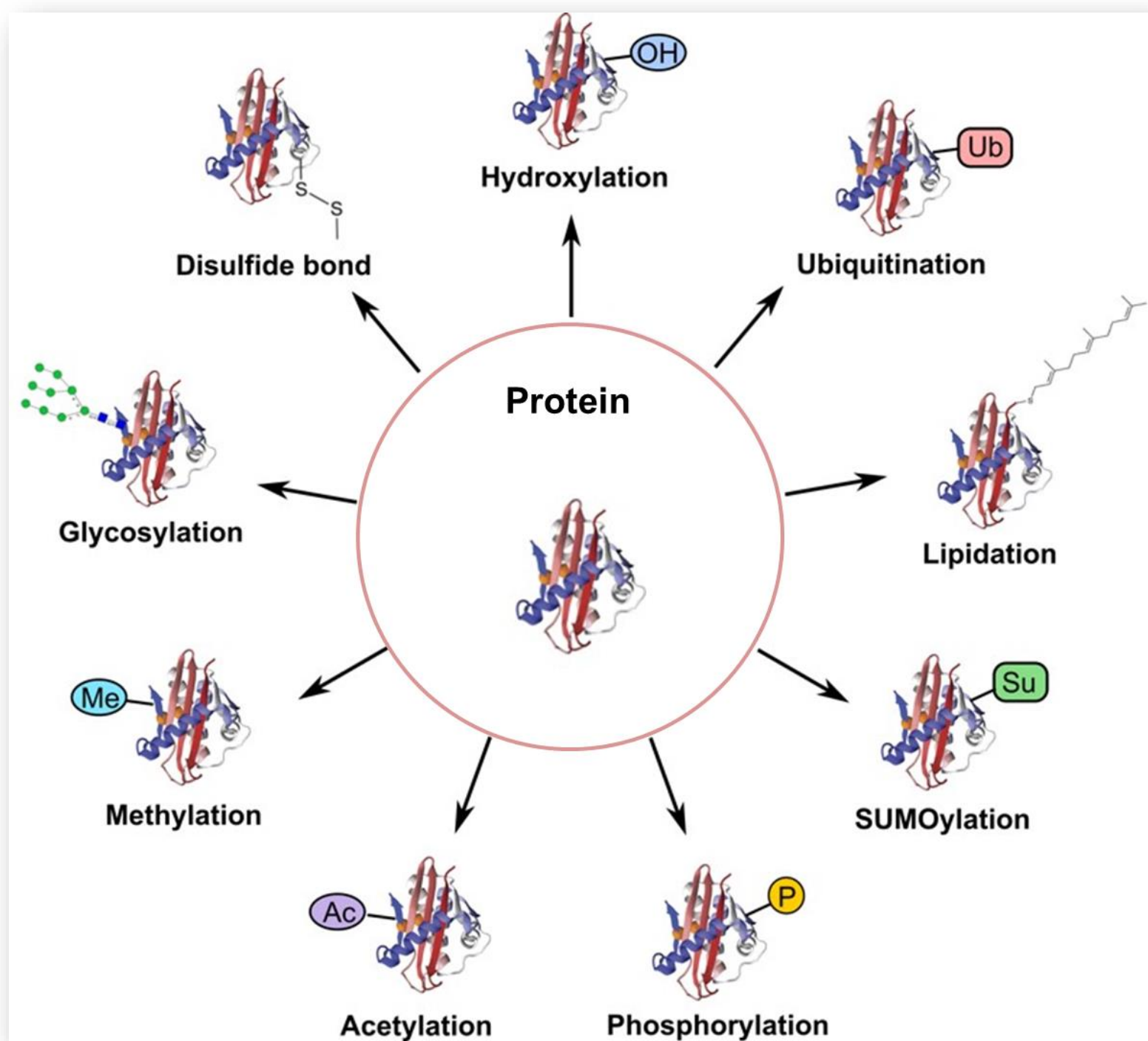
**Do you have any idea how this can be?**

# ALTERNATIVE SPLICING



PTMs =

POST-  
TRANSLATIONAL  
MODIFICATIONS



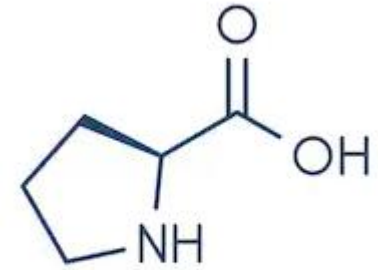
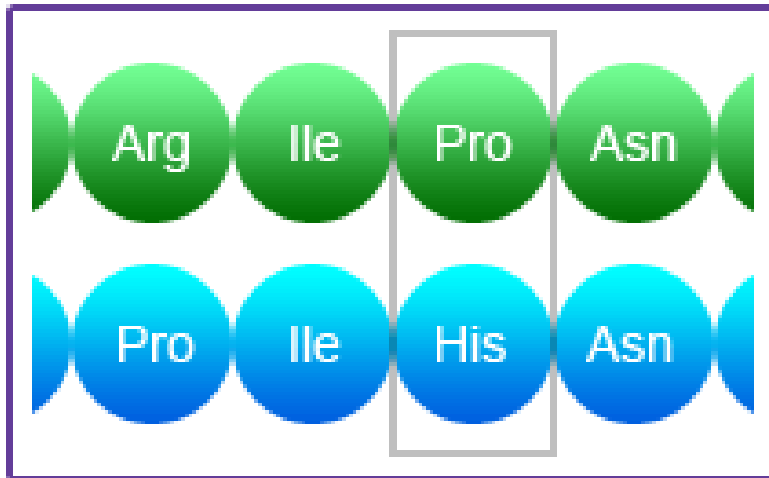


# POLYMORPHISMS

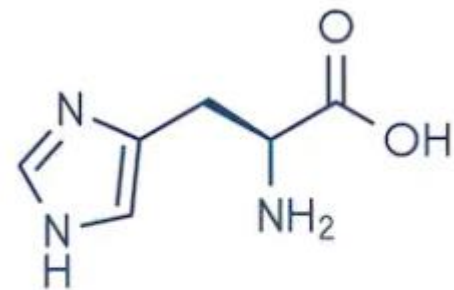
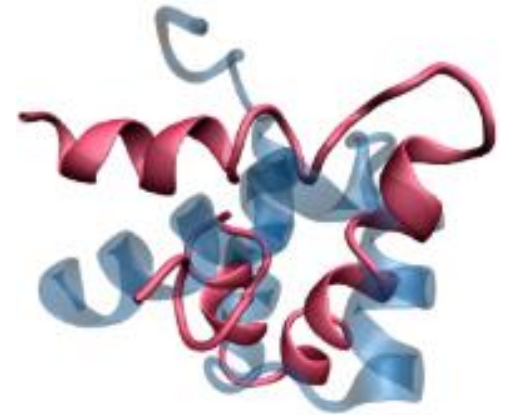
DNA  
↓  
PROTEIN

AGG ATT CCC AAC

AAG ATT CAC AAC



proline



histidine

