

Transcription

- Conversion of DNA to RNA
- Not all DNA is copied
- Specific regions corresponding to genes
 - Encode proteins or structural RNA molecules
- First step in protein production in the general scheme:

DNA → RNA → Protein

RNA polymerase

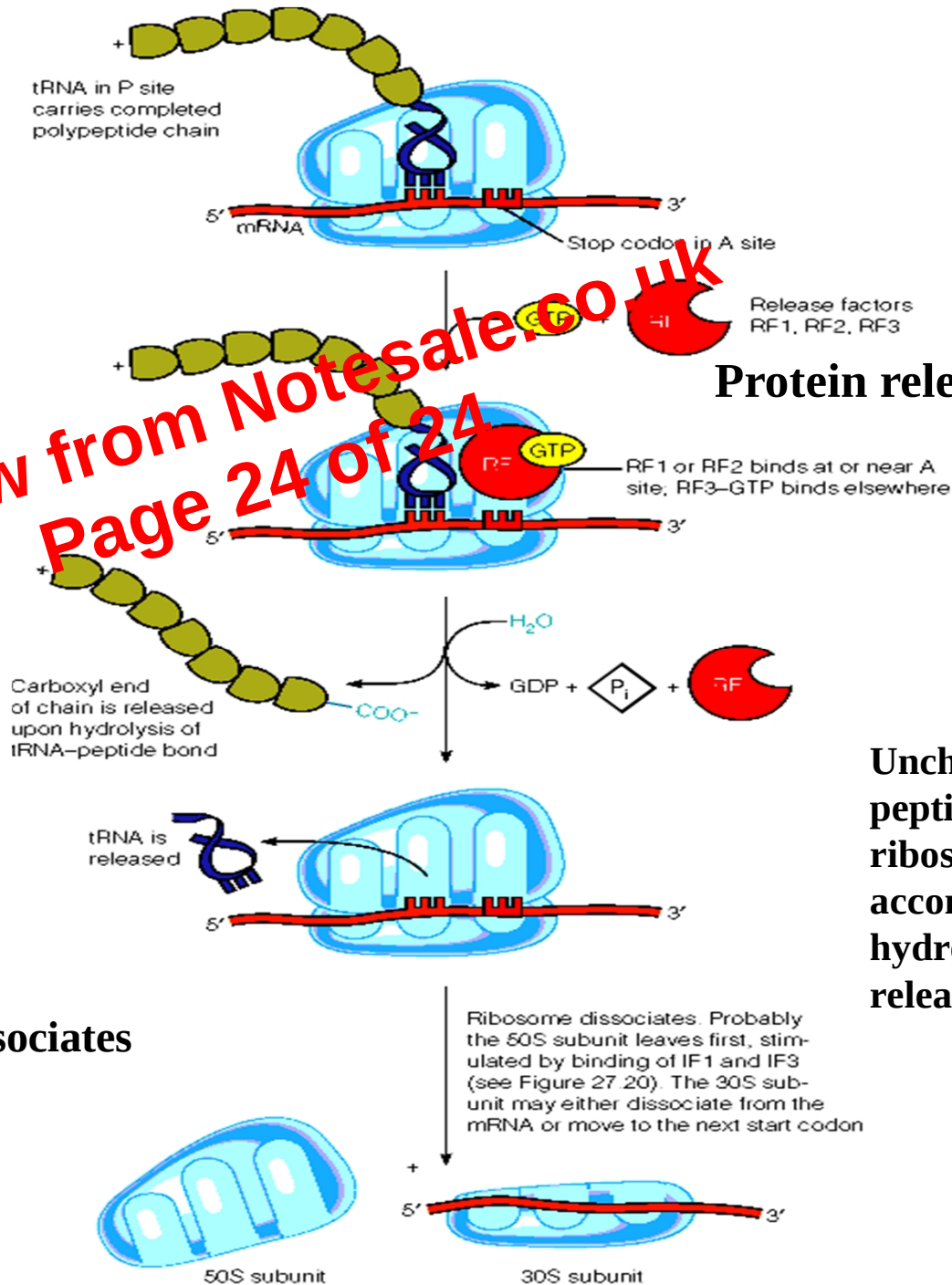
- Three different types of RNA need to be synthesized
rRNA, tRNA and mRNA
- One RNA polymerase responsible for RNA synthesis in prokaryotes
- Multi-subunit enzyme
 - Molecular weight approx 450 KDa
 - Holoenzyme $\alpha_2, \beta, \beta', \sigma, \omega$
 - Core polymerase α_2, β, β'

3 steps in transcription

- Initiation
- Elongation
- Termination

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Termination



Protein release factors

Uncharged tRNA and peptide released from ribosome, which is accompanied by GTP hydrolysis and RFs released.

Ribosome dissociates