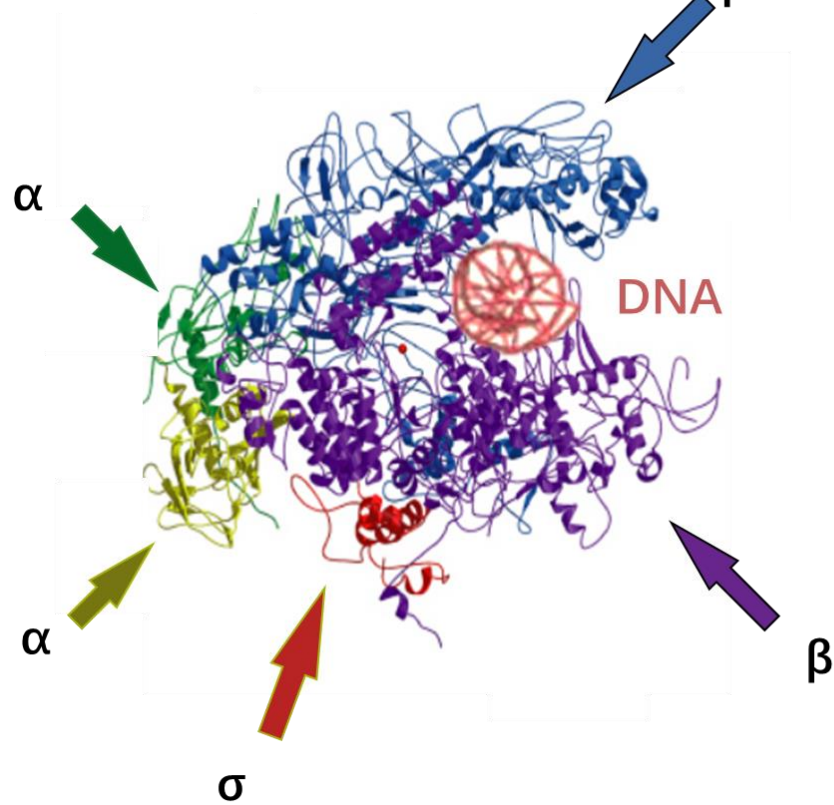
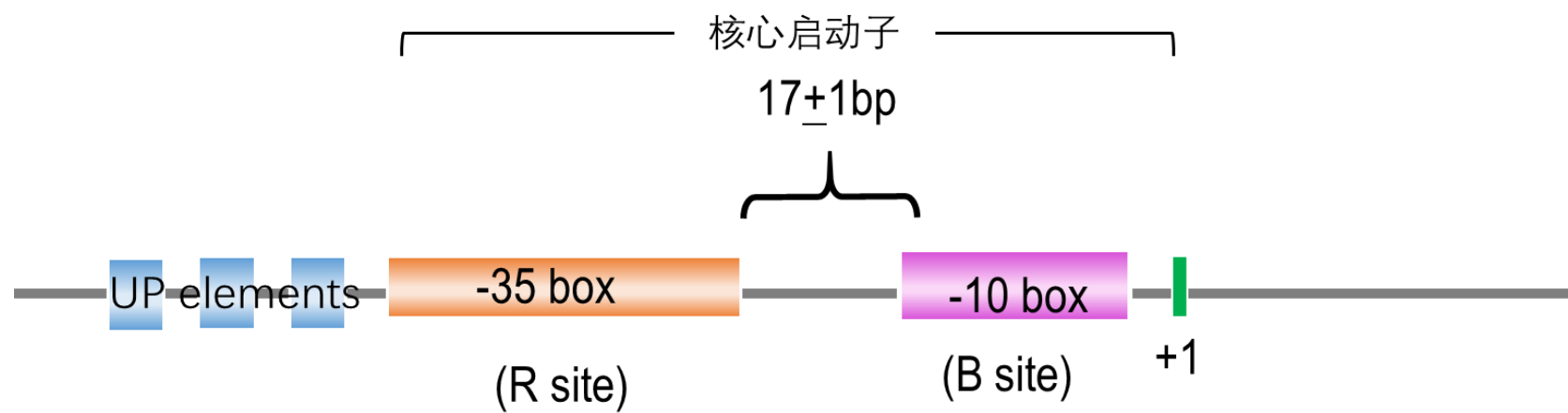


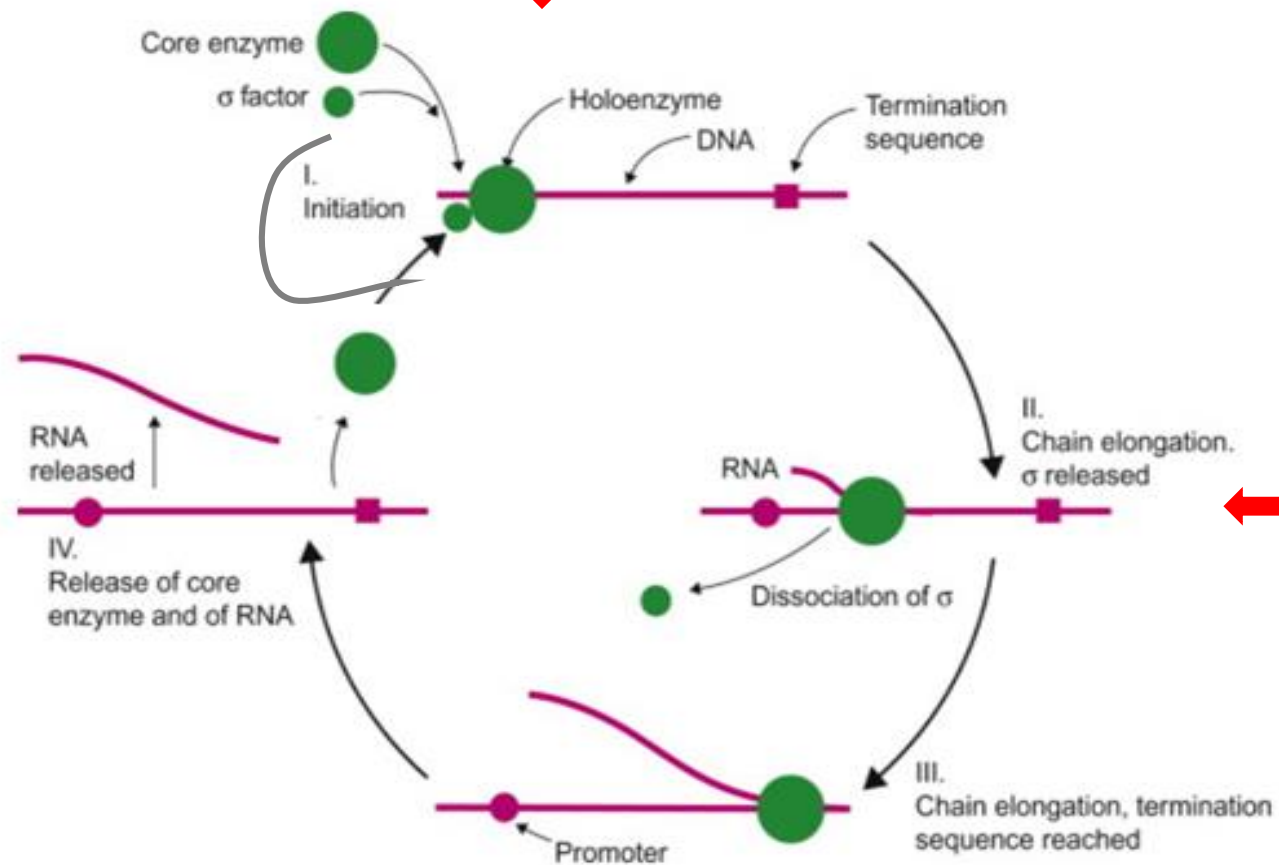
RNA聚合酶



转录启动子



起始/Initiation



终止/Termination



延伸/Elongation

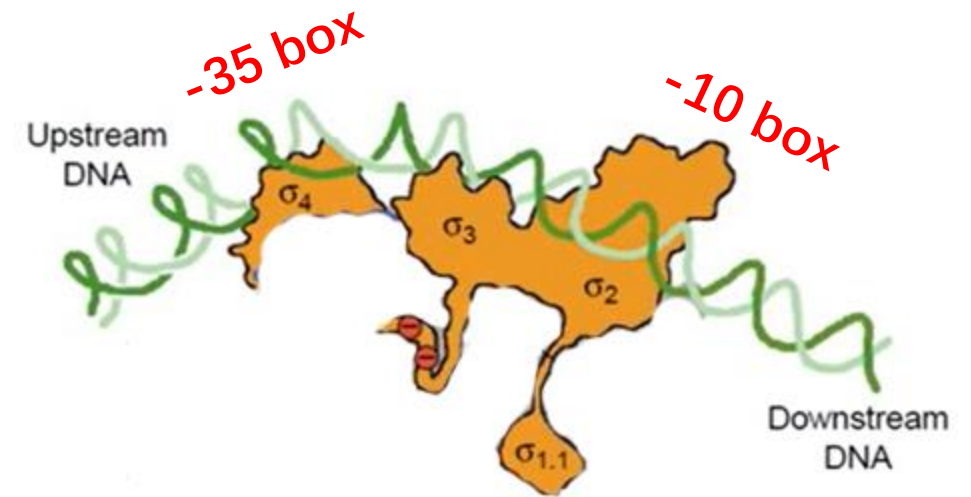
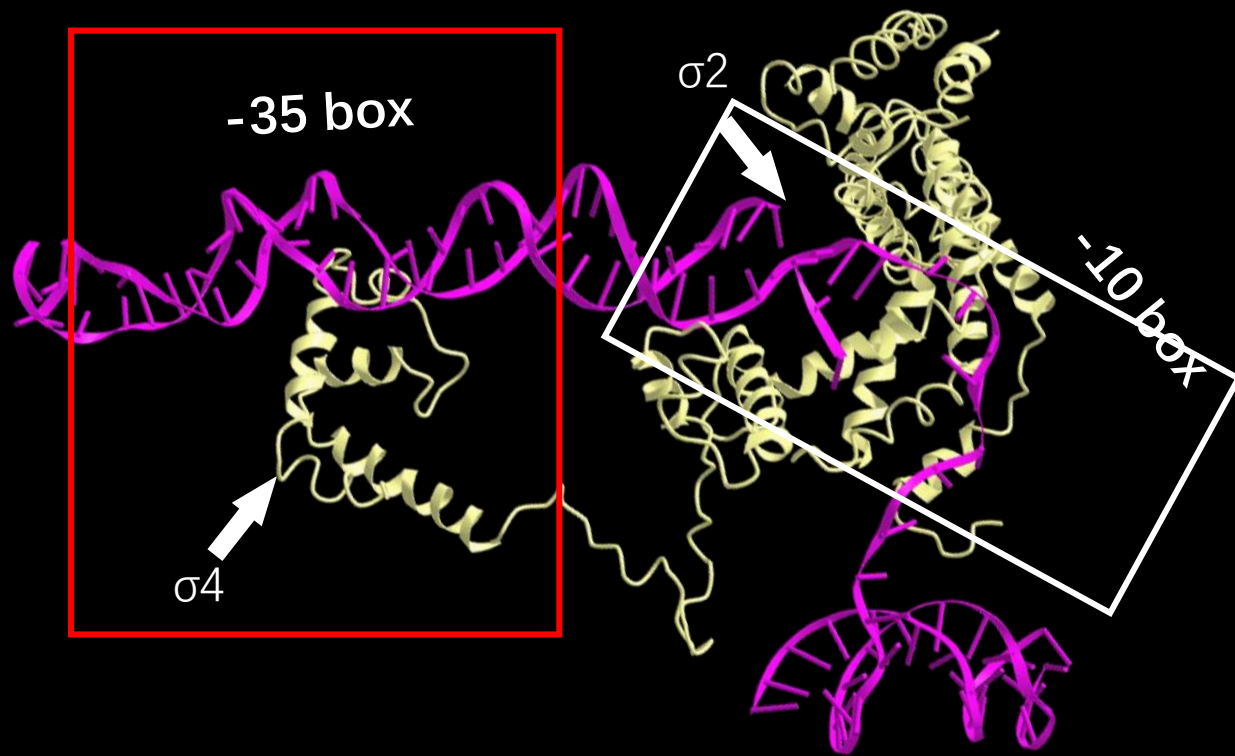


转录起始 (限速步骤)

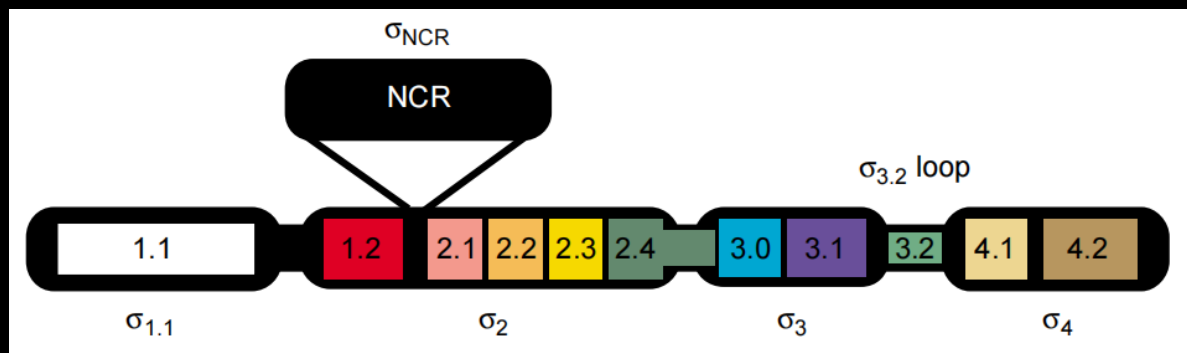
Step 1. RNA 聚合酶识别启动子

Step 2. DNA模板解链

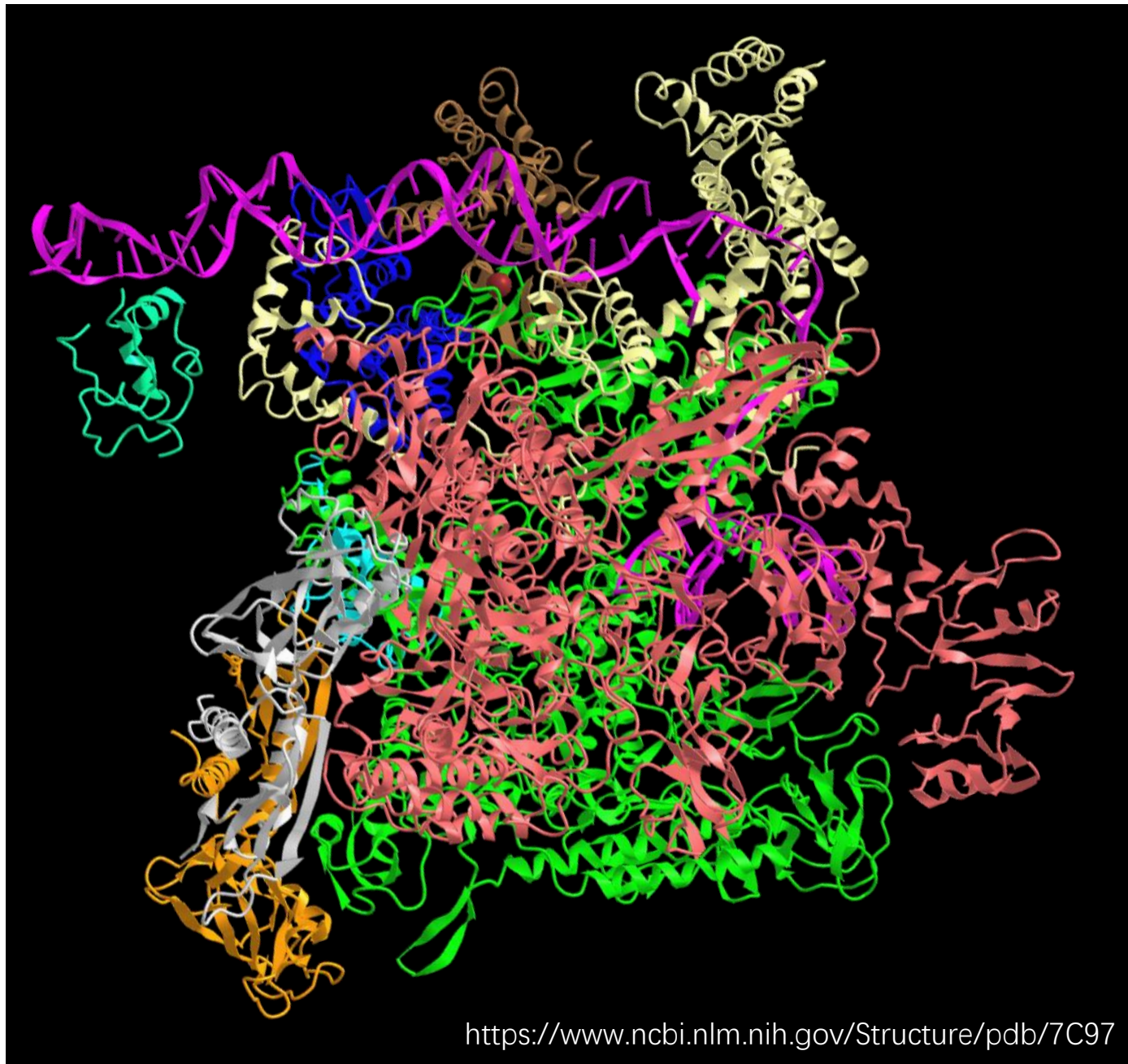
Step 3. σ 因子解离



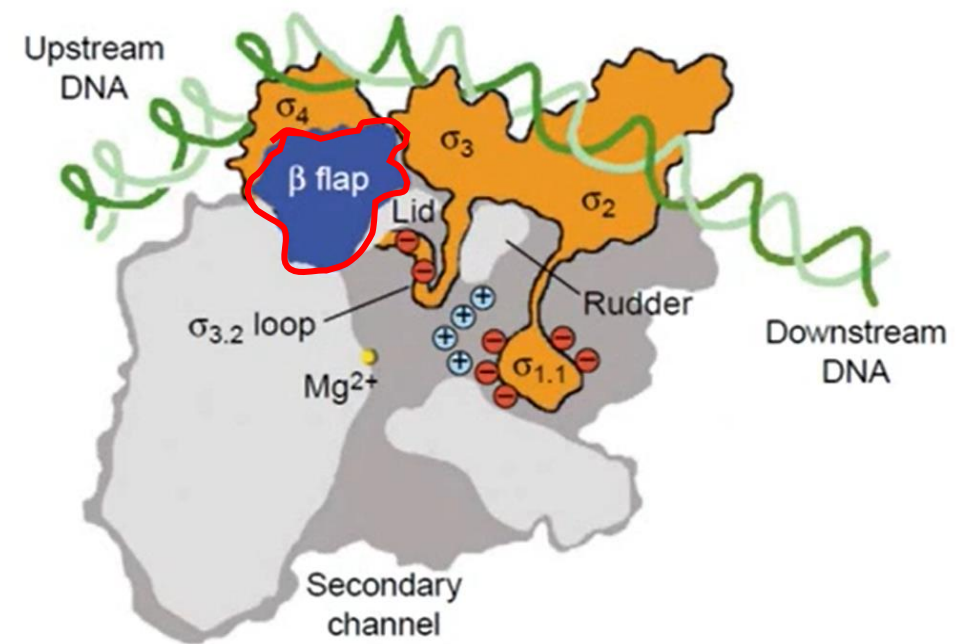
Current opinion in structure biology, 2003, 13:31-39



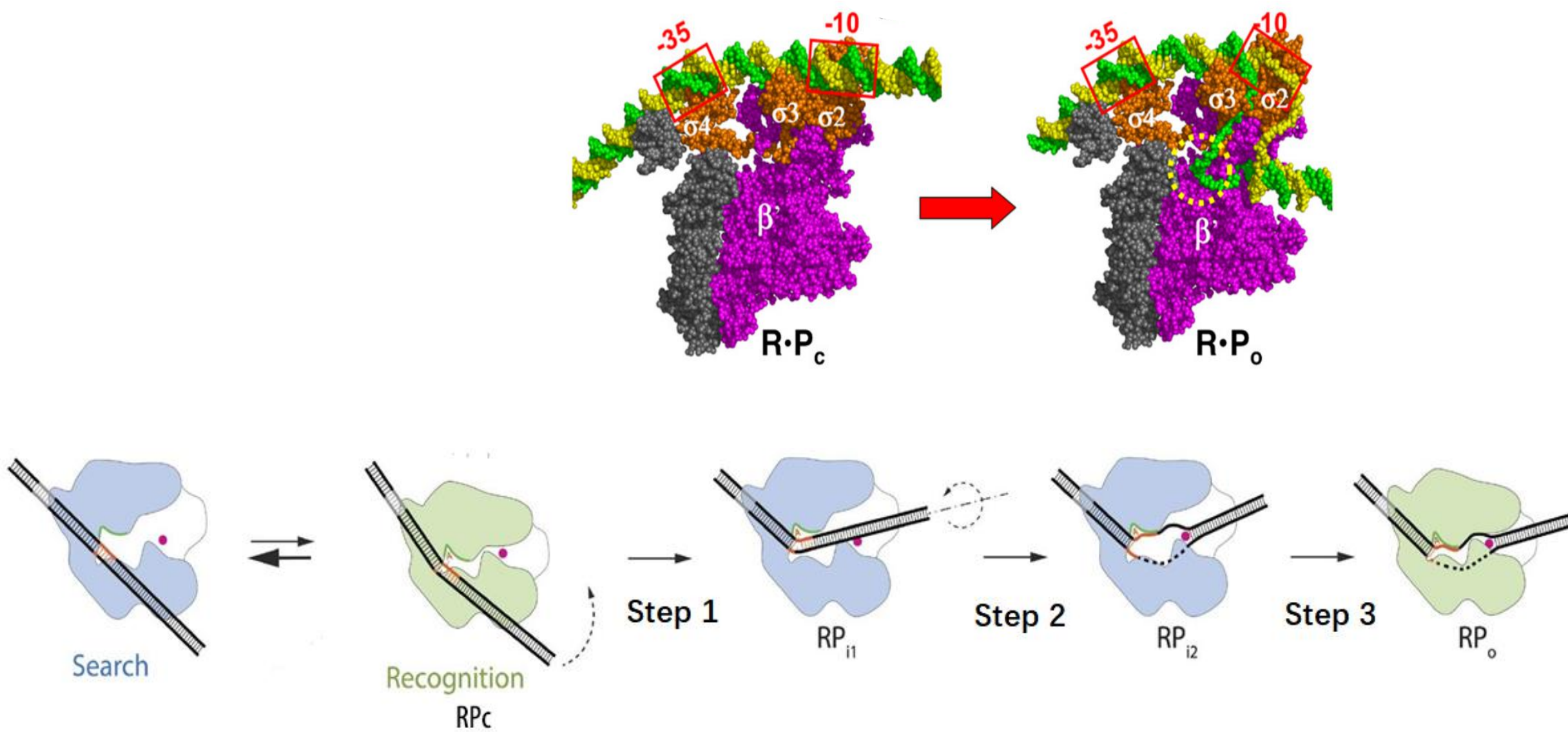
<https://www.ncbi.nlm.nih.gov/Structure/pdb/7C97>

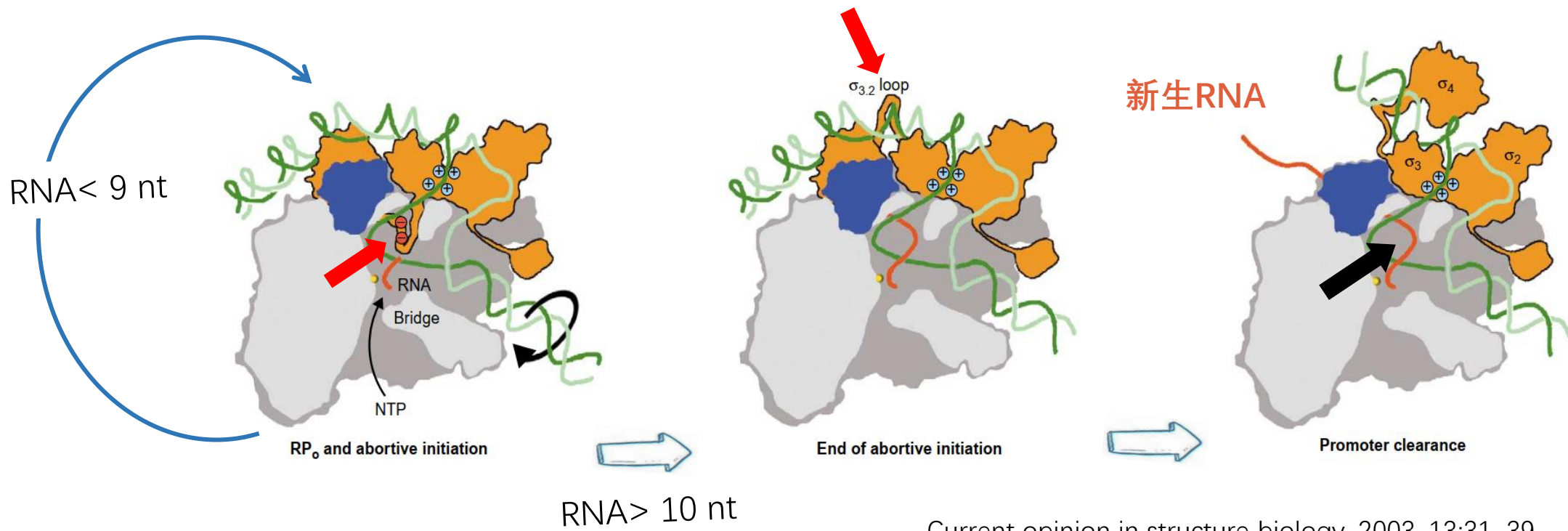


RPc

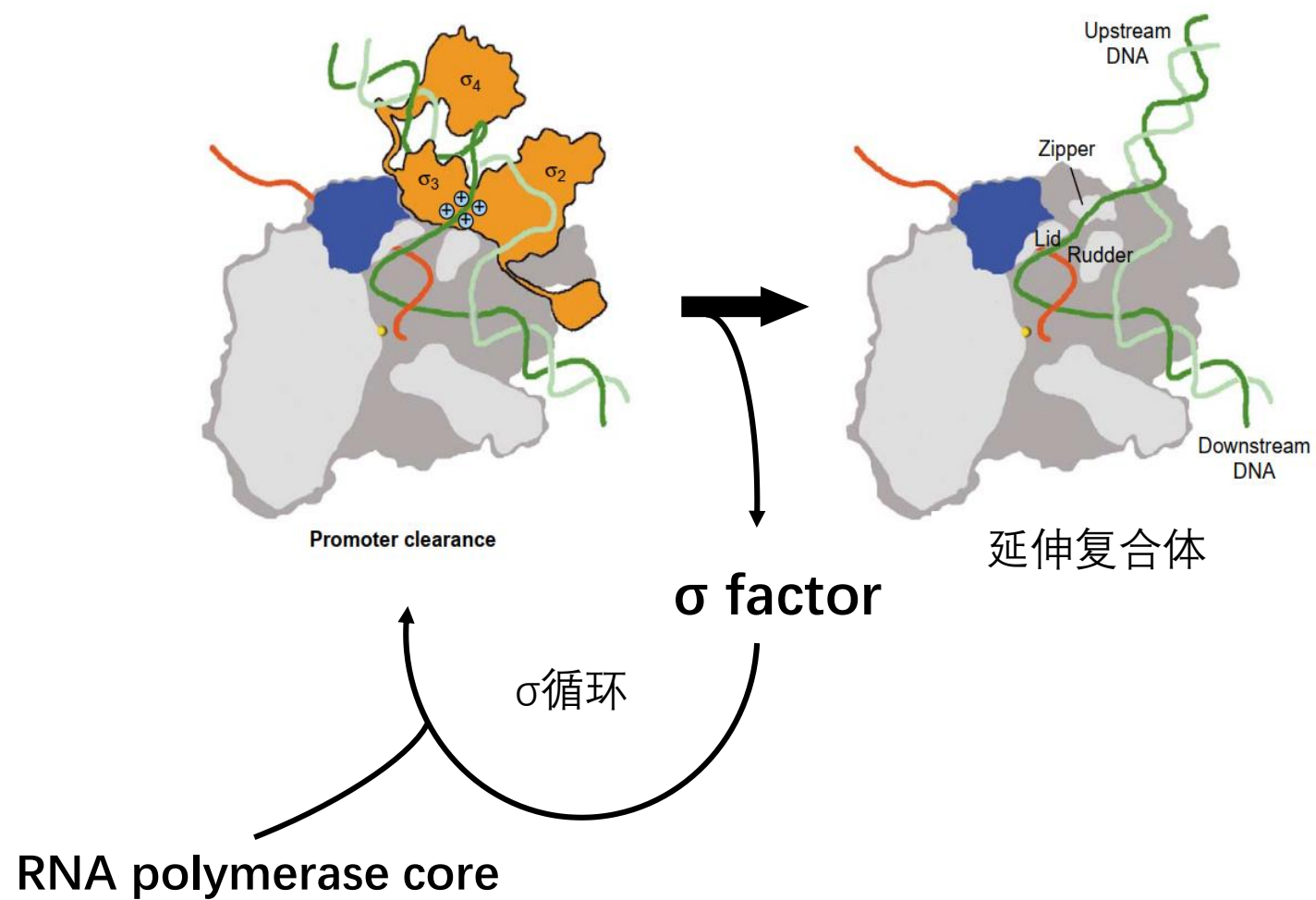


Current opinion in structure biology, 2003, 13:31-39

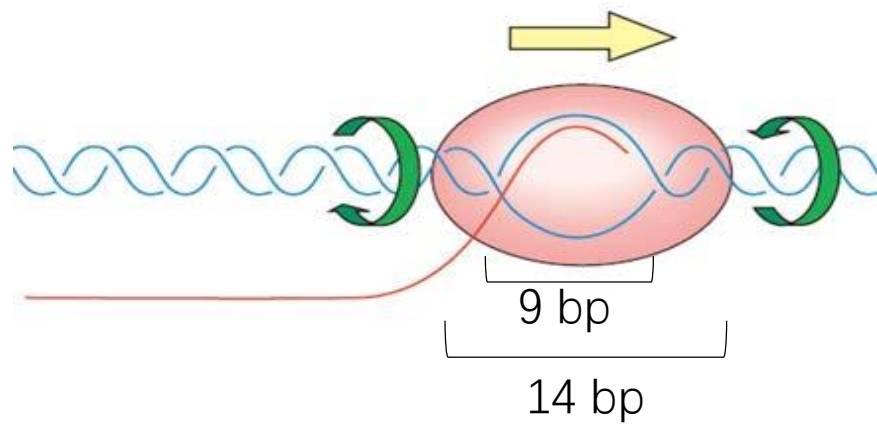




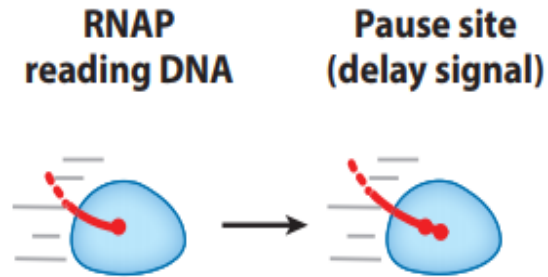
Current opinion in structure biology, 2003, 13:31-39



转录延伸



延伸过程中的暂停



Transcription output

Types of inputs

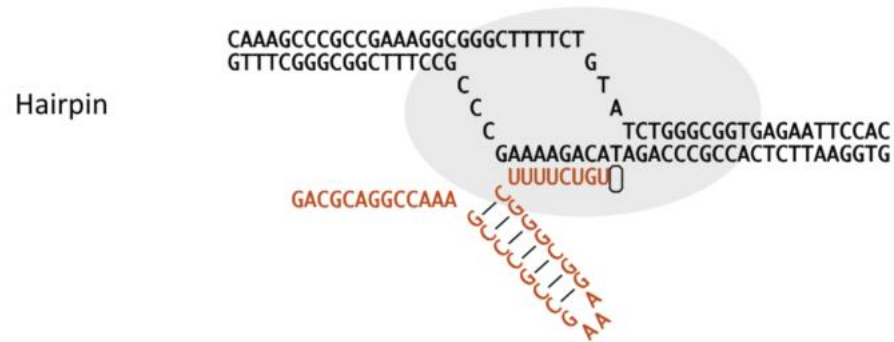
- RNA structure
- Translational status
- Metabolite level
- Signaling molecule*
- Regulatory protein*
- NTP level (energy charge)
- Osmolality or pH*
- DNA topology
- DNA damage
- *via RNA or RNAP

Types of outputs

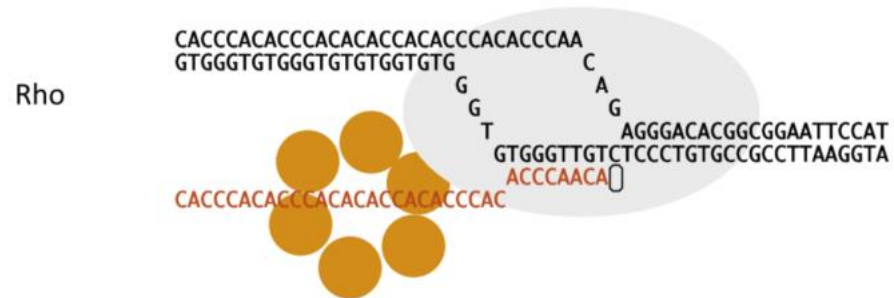
- Promoter escape
- RNA folding
- RNA processing
- Elongation rate
- Transcriptional attenuation
- Transcriptional termination
- Ribosome loading (translation)
- RNA proofreading
- mRNA quality control
- DNA repair

转录终止

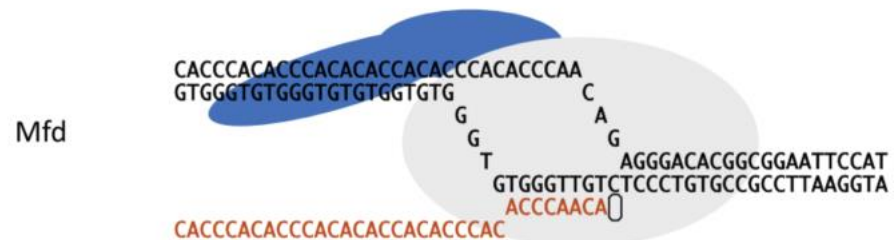
原核生物的转录终止子



Intrinsic terminator

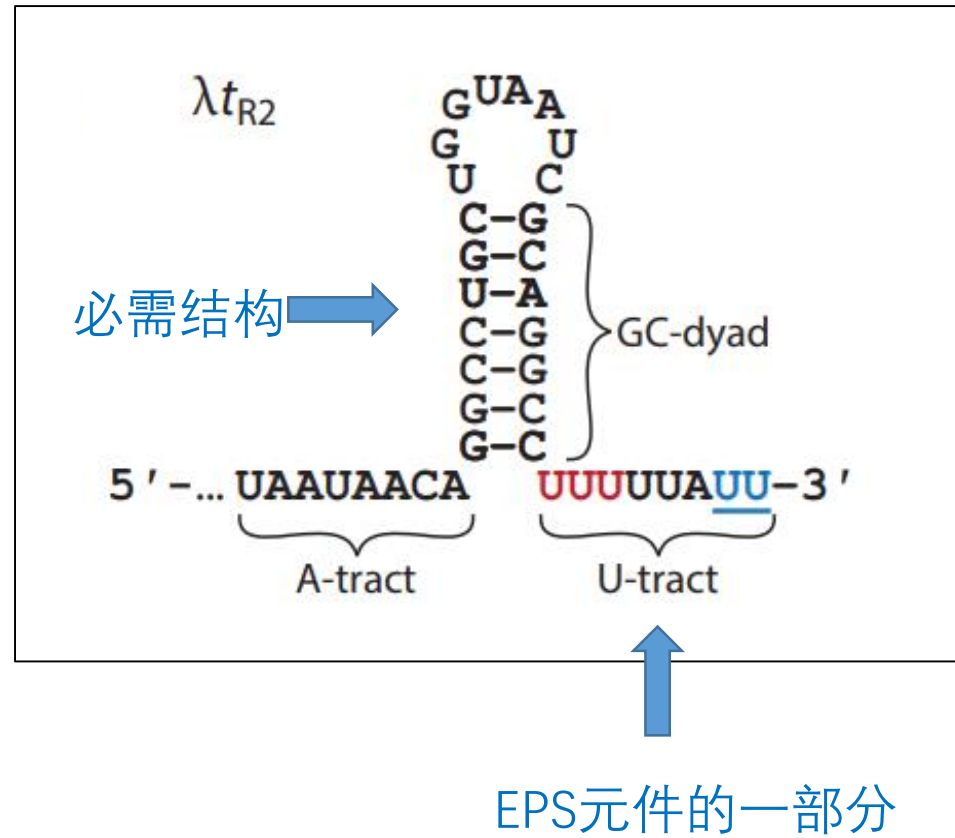


Rho-dependent terminator

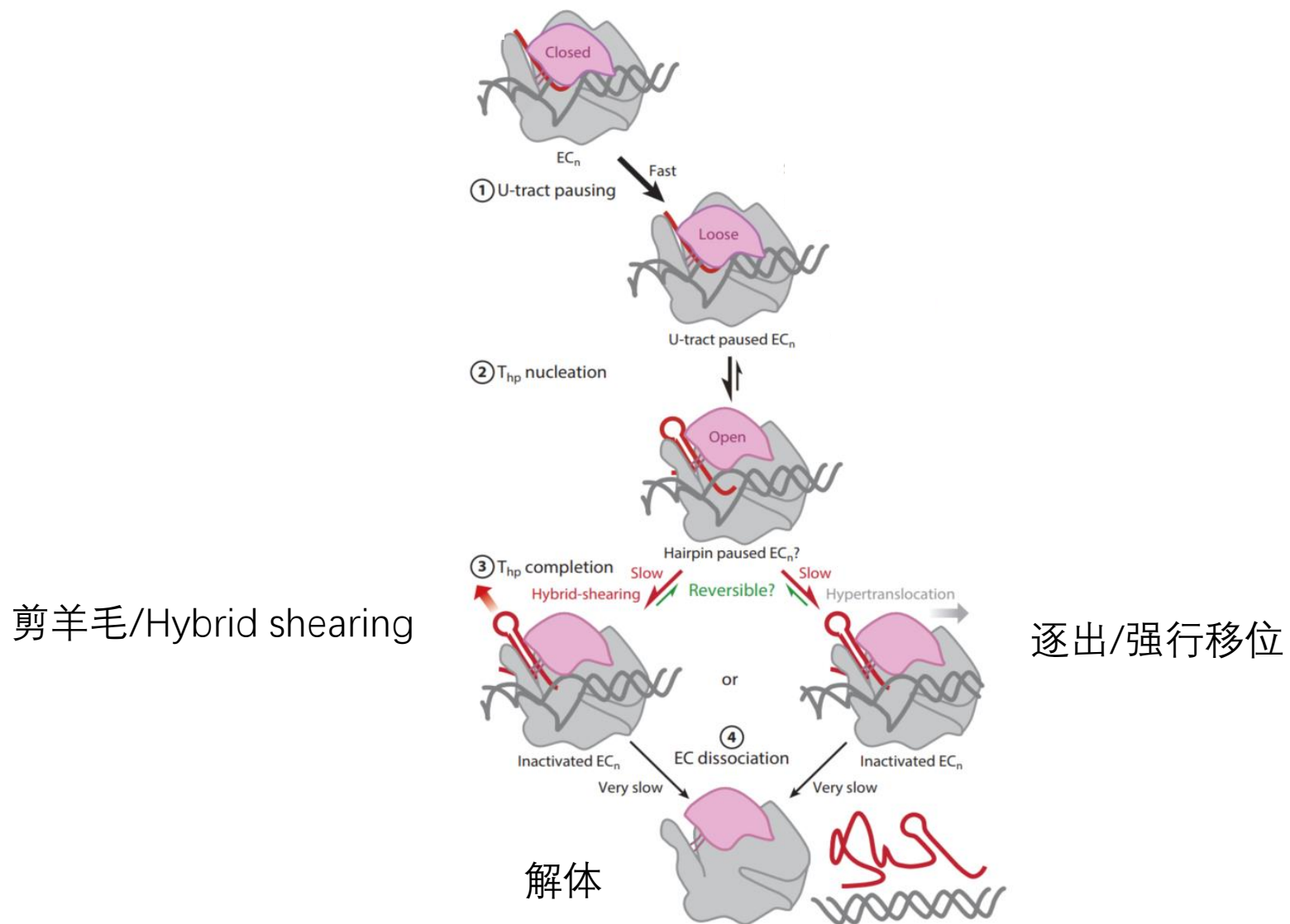


Mfd-dependent terminator

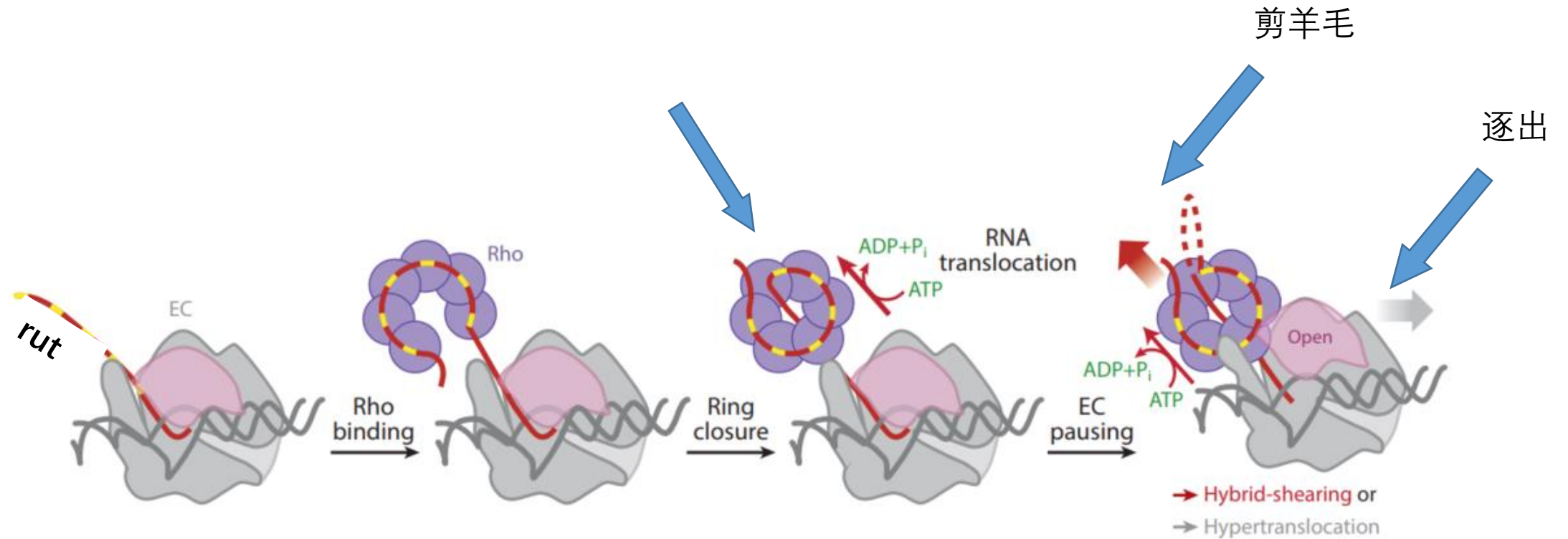
Intrinsic terminator, 内源性/固有终止子



Rho-independent termination, 不依赖 ρ 因子的终止



Rho-dependent termination, 依赖 ρ 因子的终止



绳系追踪模型 (Tethered-tracking model)

