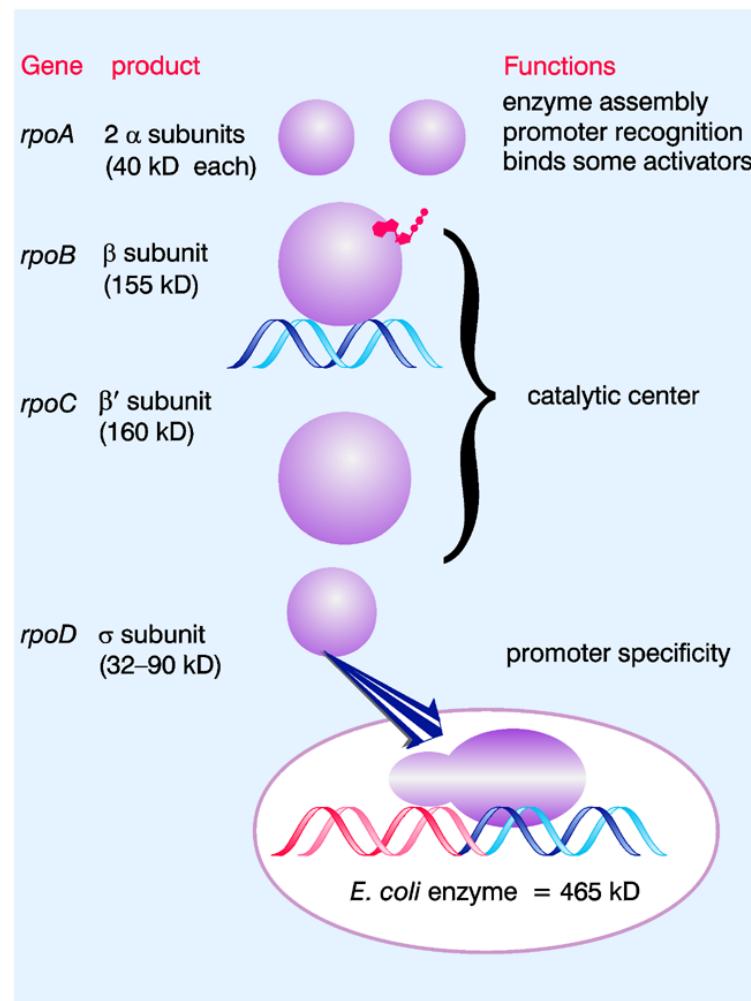


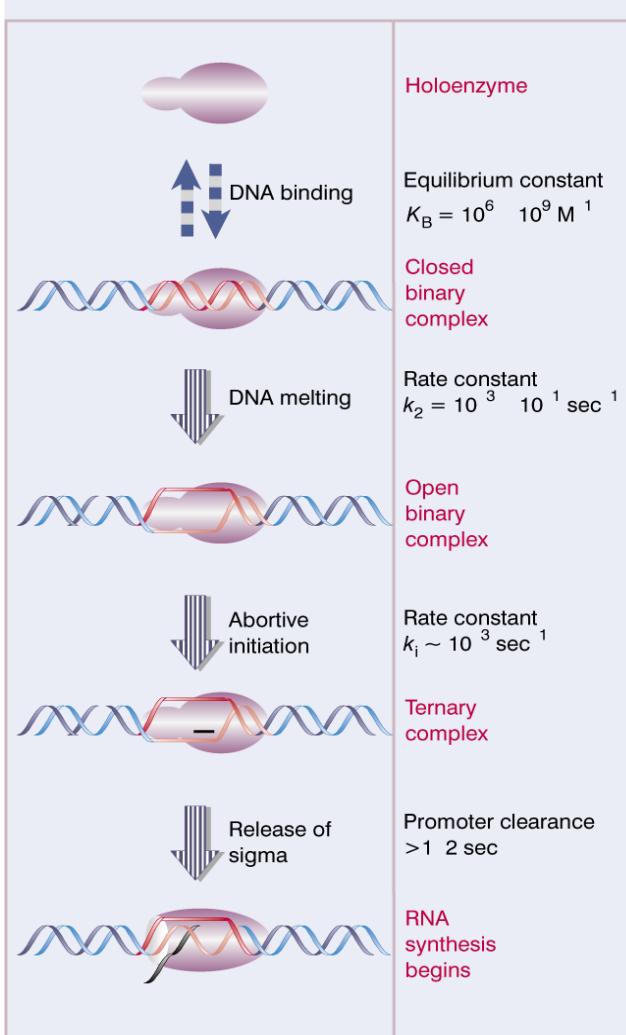
Drevo življenja s skupnim prednikom

Figure 9.9 Eubacterial RNA polymerases have four types of subunit; α , β , and β' have rather constant sizes in different bacterial species, but σ varies more widely.



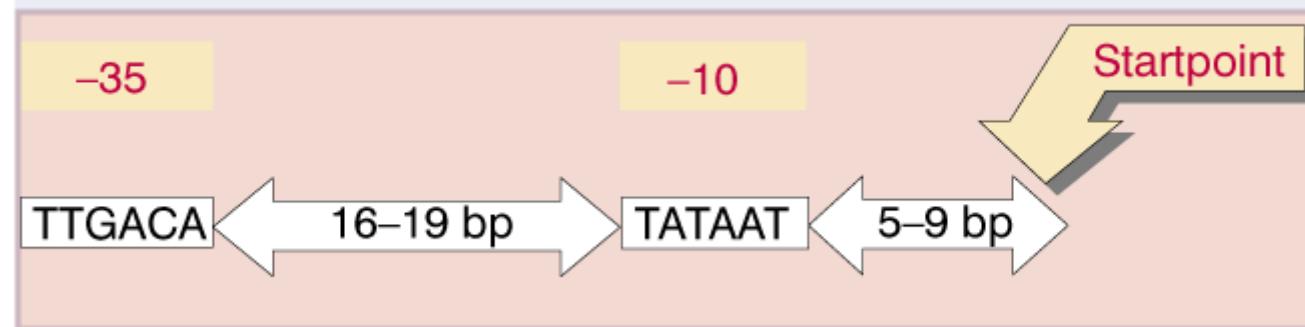
Struktura RNA polimeraze evbakterij

Figure 9.10 RNA polymerase passes through several steps prior to elongation. A closed binary complex is converted to an open form and then into a ternary complex.

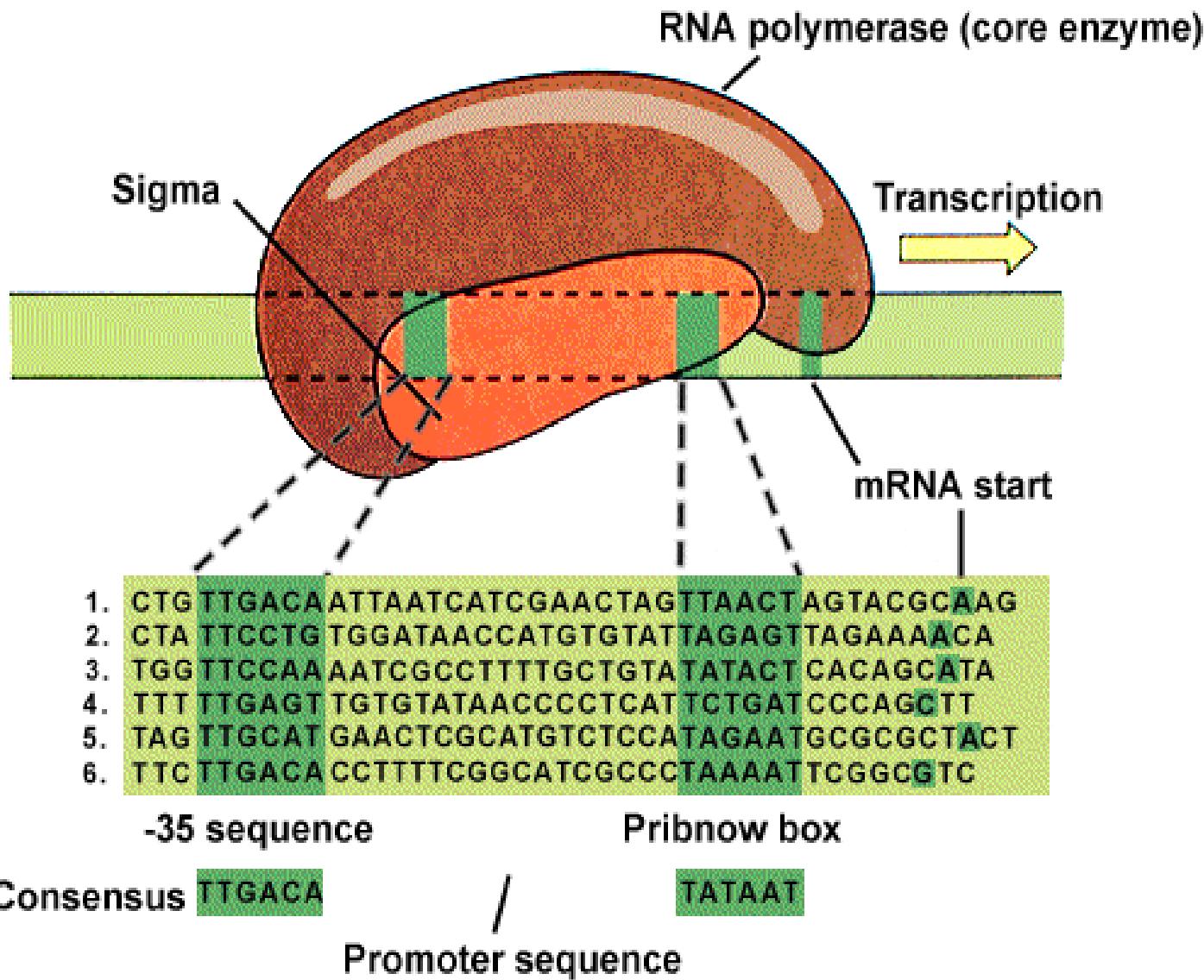


Faze pričetka transkripcije evbakterij

Figure 9.15 A typical promoter has three components, consisting of consensus sequences at –35 and –10, and the startpoint.

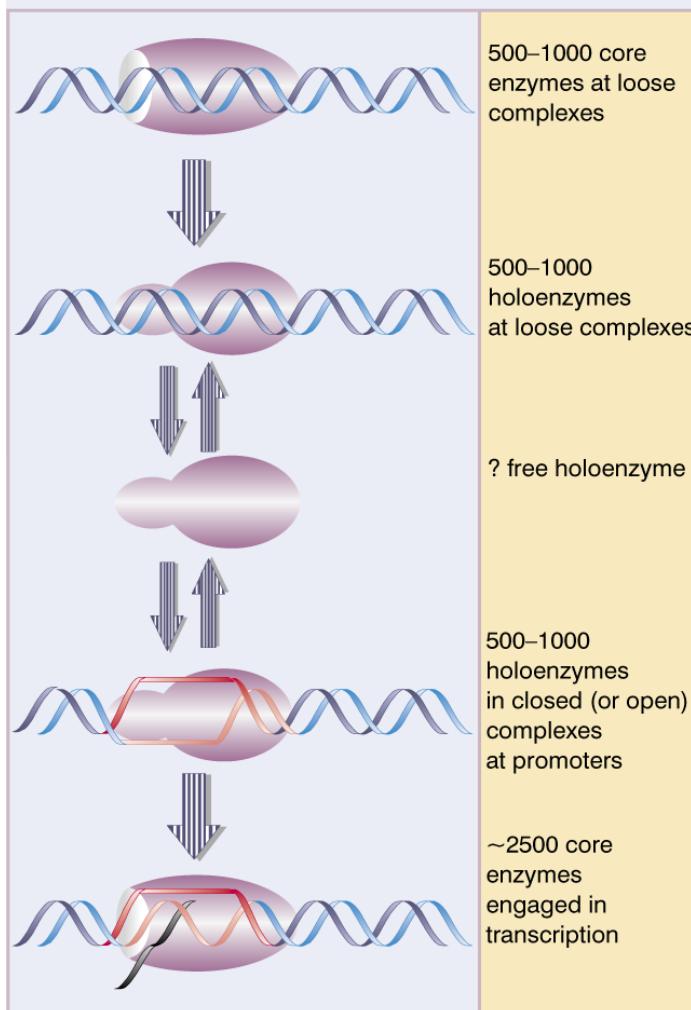


Struktura promotorjev bakterij



Vezava σ faktorja RNA polimeraze na promotor

Figure 9.12 Core enzyme and holoenzyme are distributed on DNA, and very little RNA polymerase is free.



Sredica RNA polimeraze in holoencim sta v veliki meri vezana na DNA

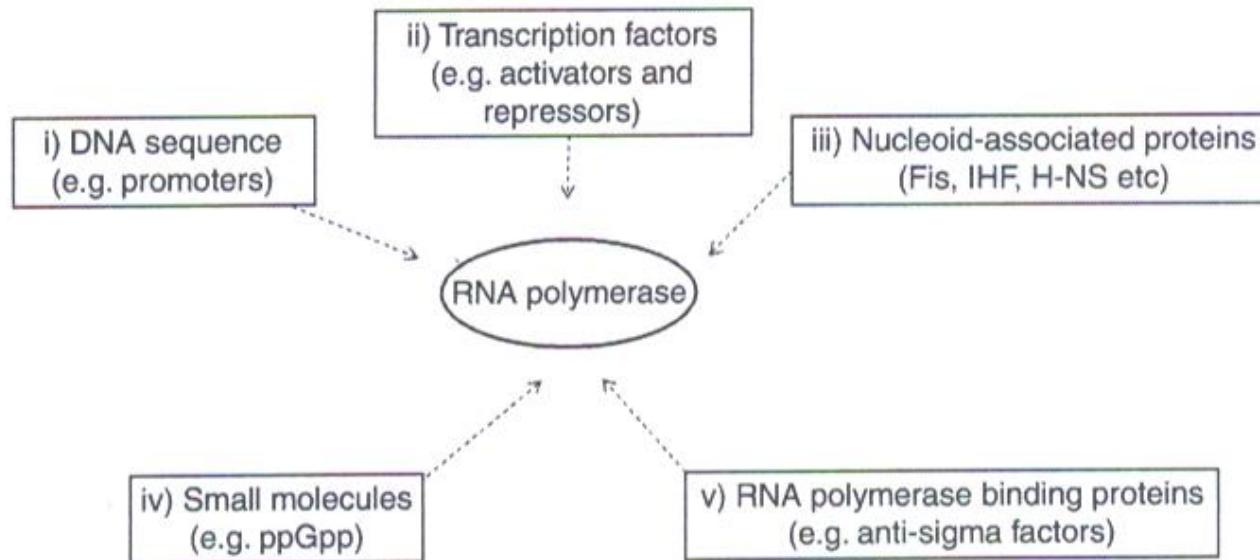
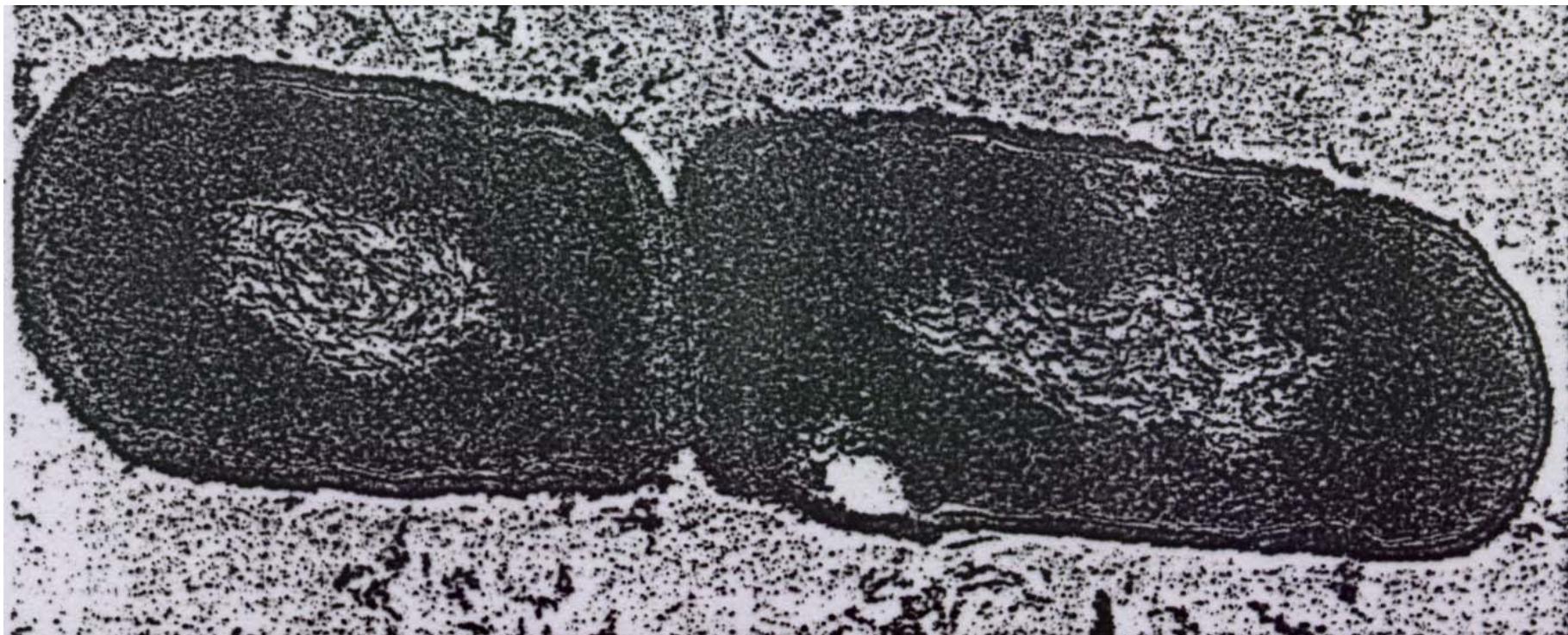
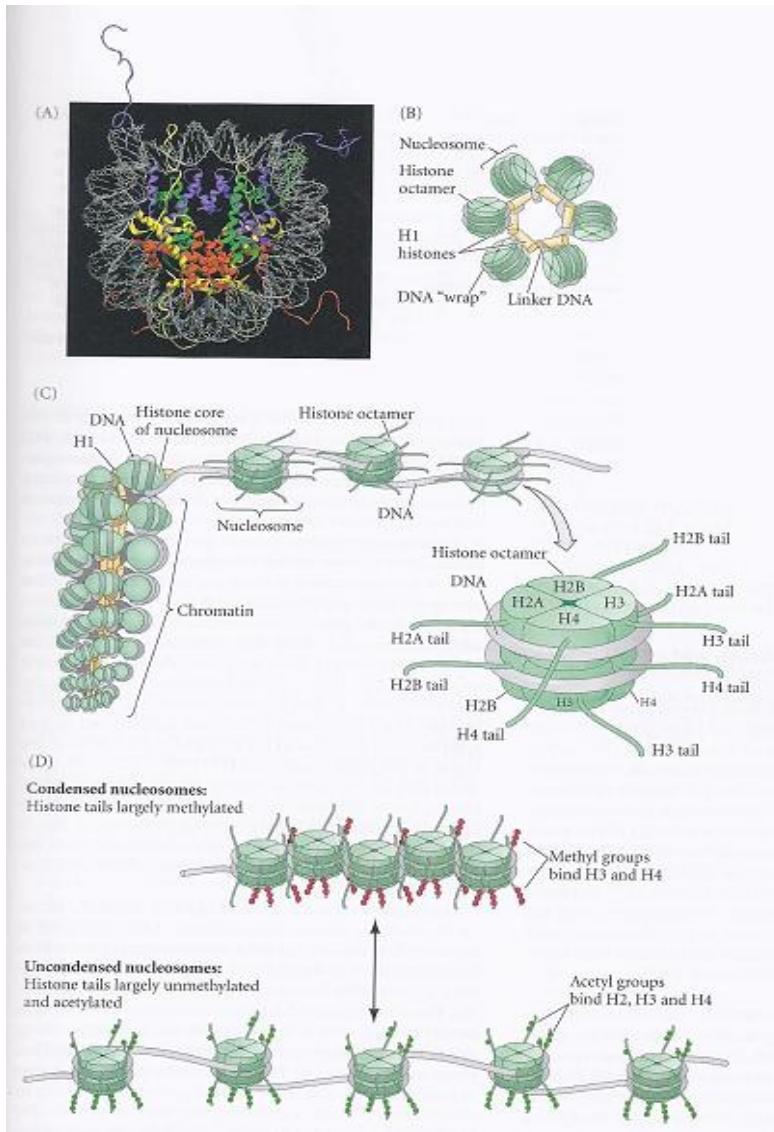


FIGURE 4.1 Factors effecting RNA polymerase activity in *E. coli*.

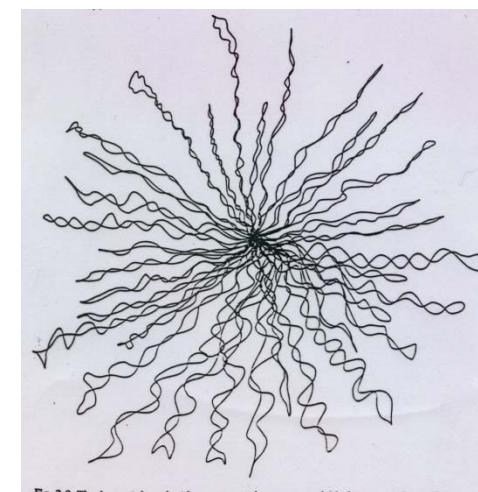
Dejavniki, ki vplivajo na aktivnost RNA polimeraze *Escherichia coli*



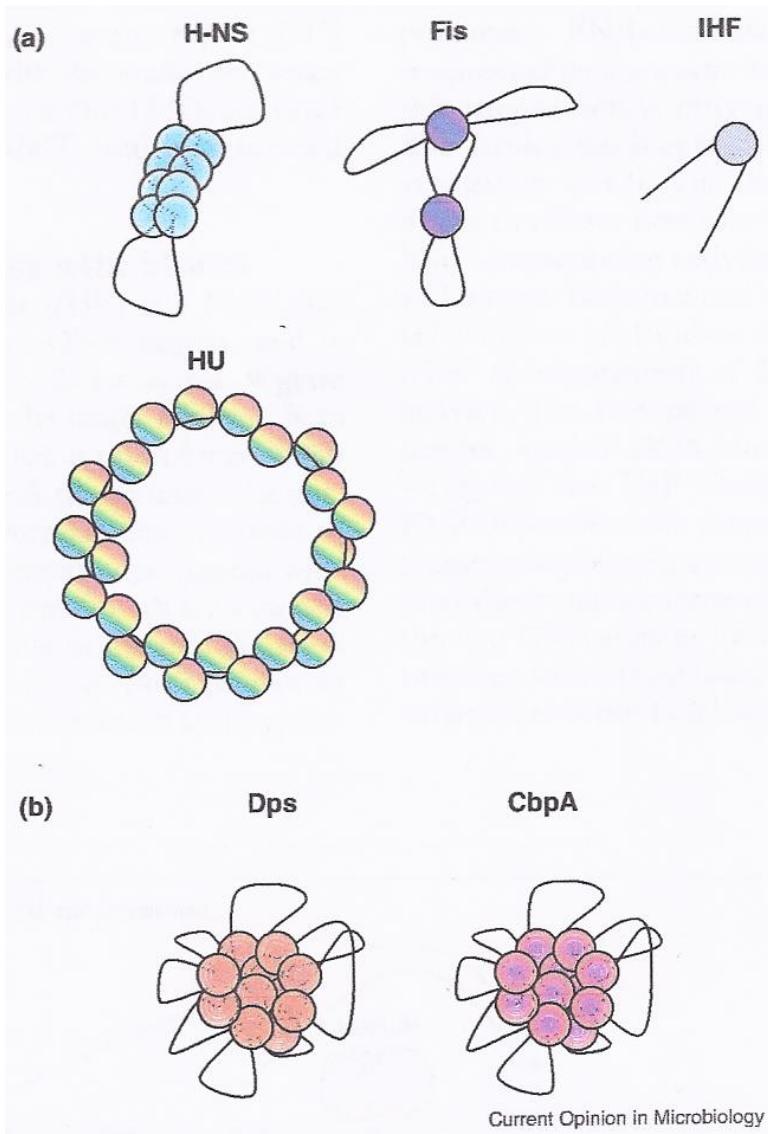
Bakteriji z nukleoidom



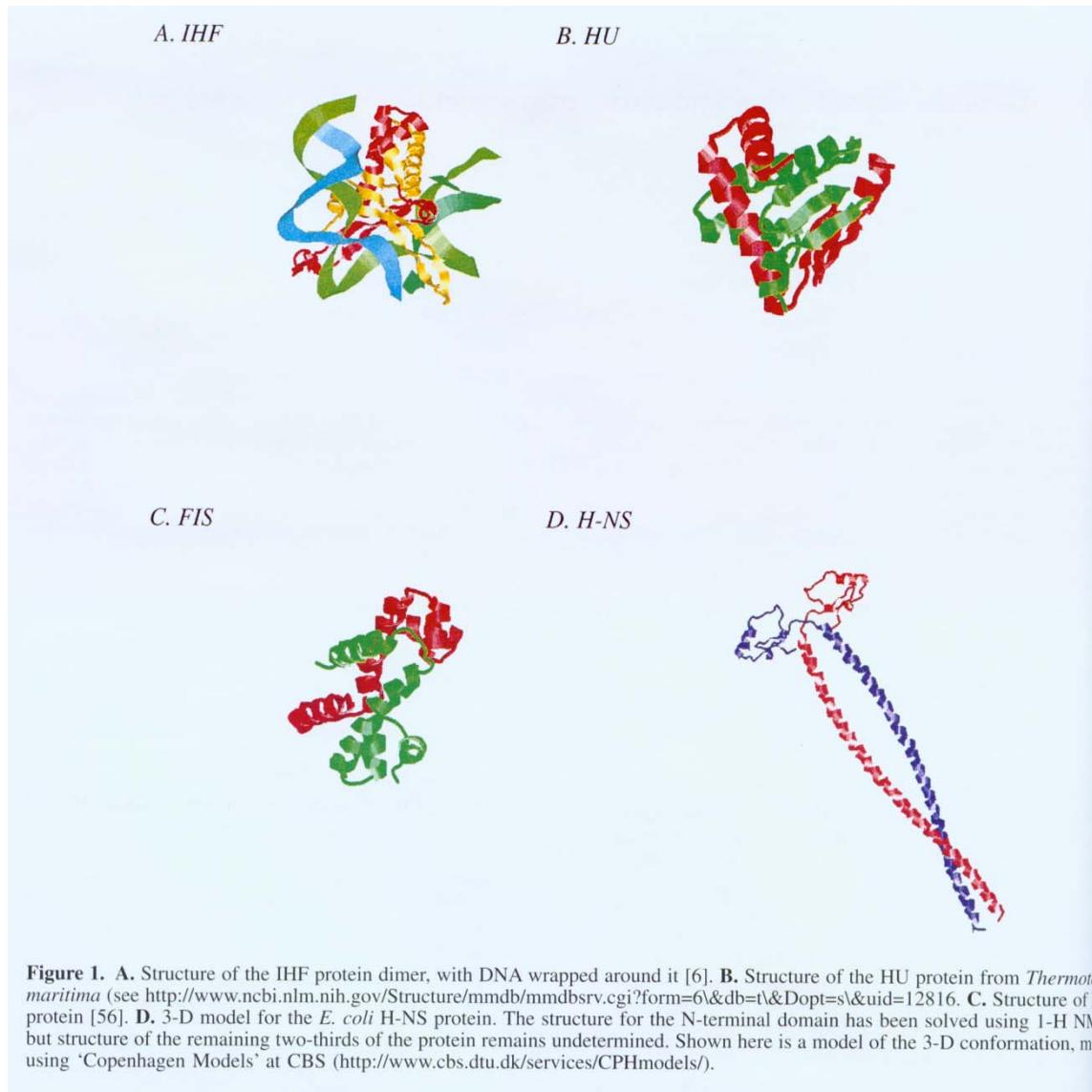
Nukleosomi in struktura kromatina



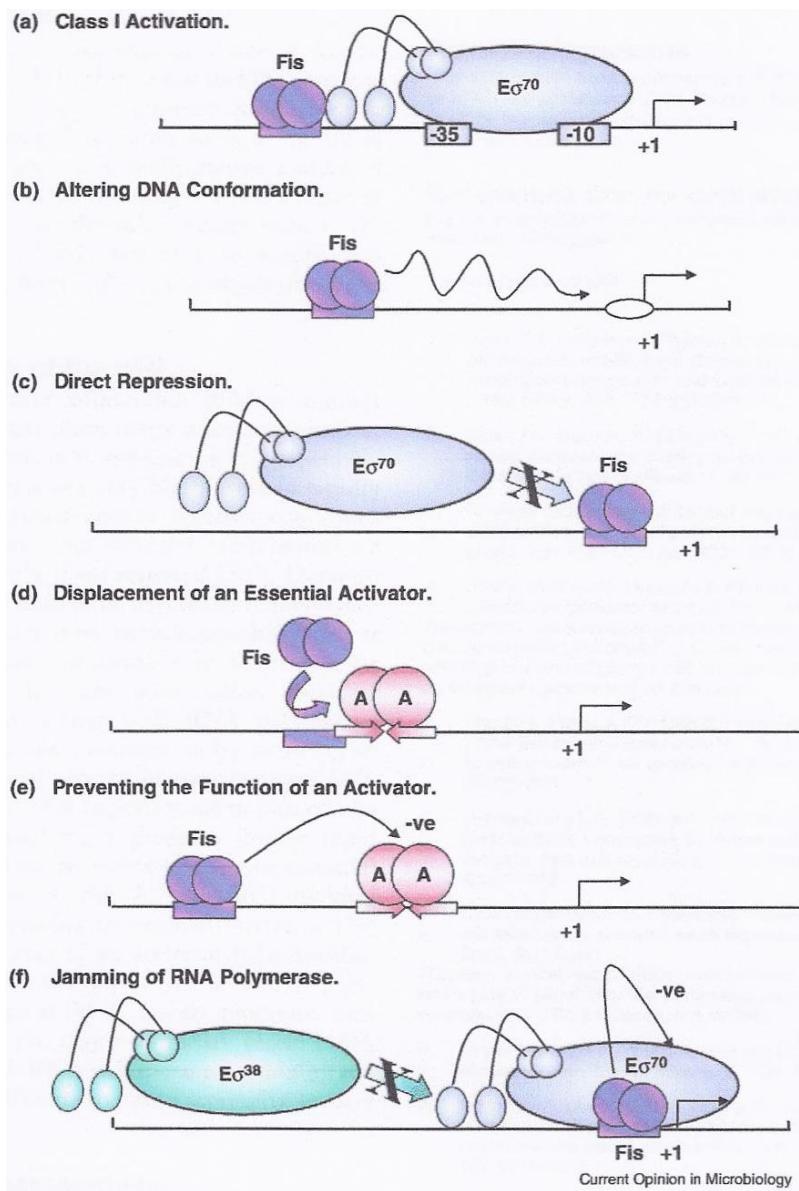
Domene kromosoma bakterij



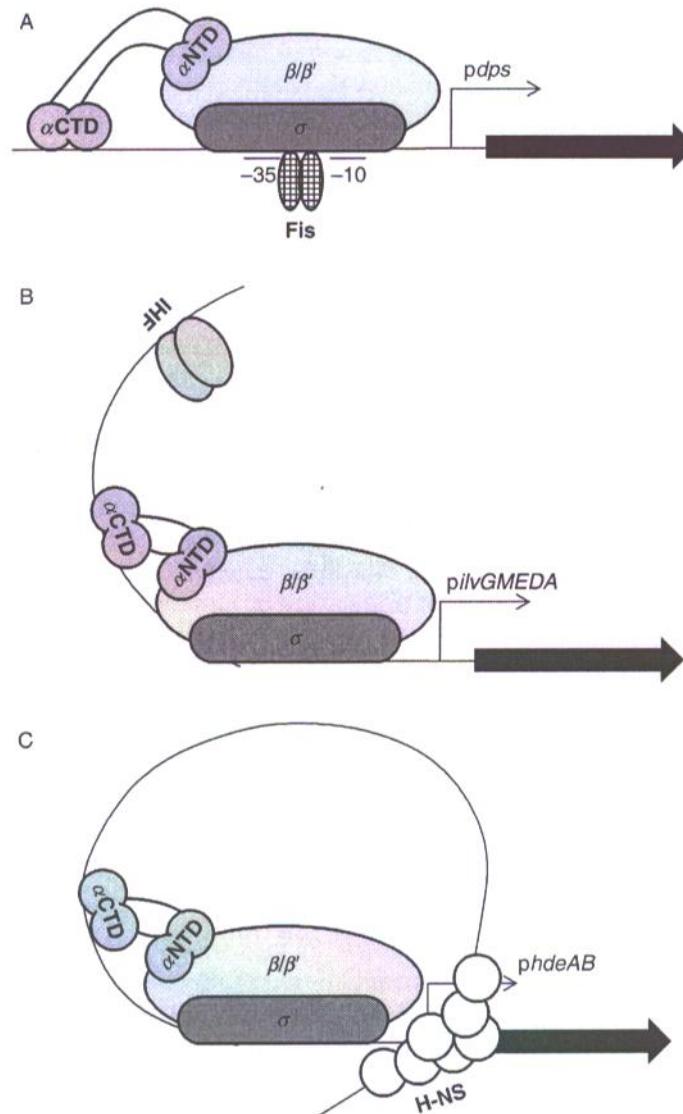
Bakterijski proteini nukleoida



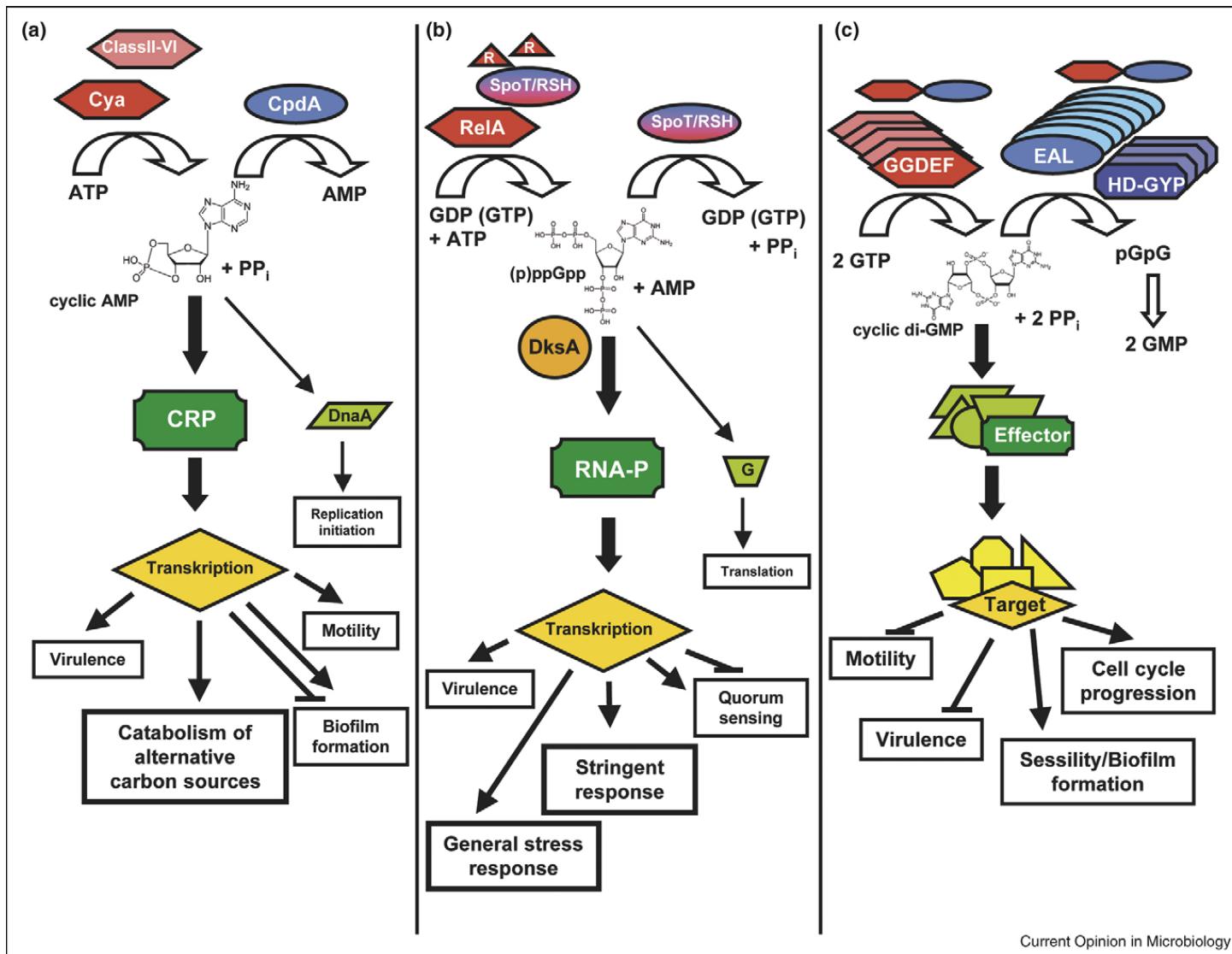
Globalni regulatorji izražanja genov *E. coli*



Uravnavanje iniciacije transkripcije s proteinom Fis

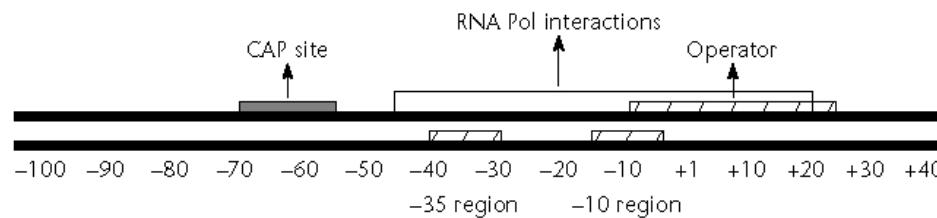


Proteina Fis in H-NS pogosto delujeta antagonistično pri uravnavanju izražanja genov

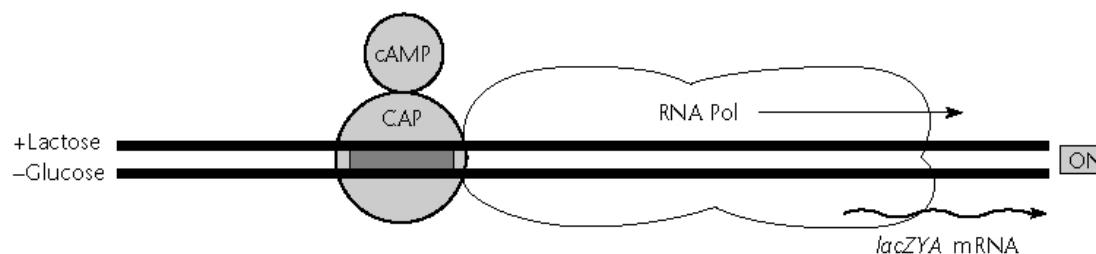


Current Opinion in Microbiology

Sekundarni poročevalci: cAMP; ppGpp; c-di-GMP



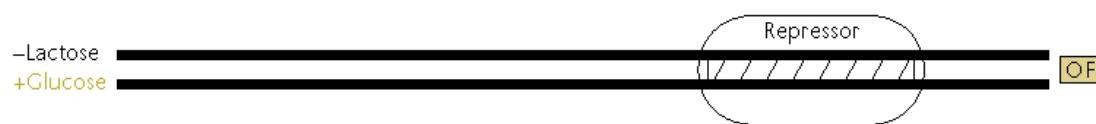
A



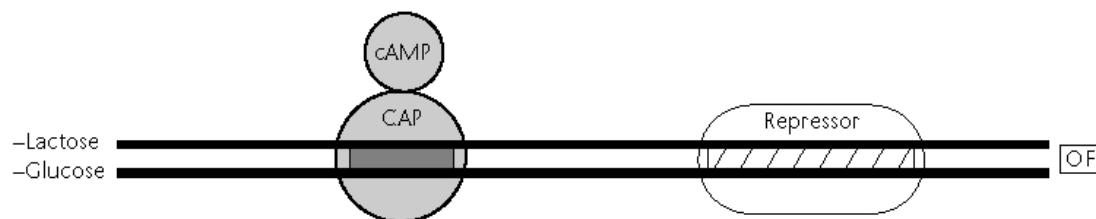
B



C



D



Protein CAP ('catabolite activator protein') uravnava izražanje *lac* operona

Figure 13.5

Figure 10.21 Cyclic AMP has a single phosphate group connected to both the 3' and 5' positions of the sugar ring.

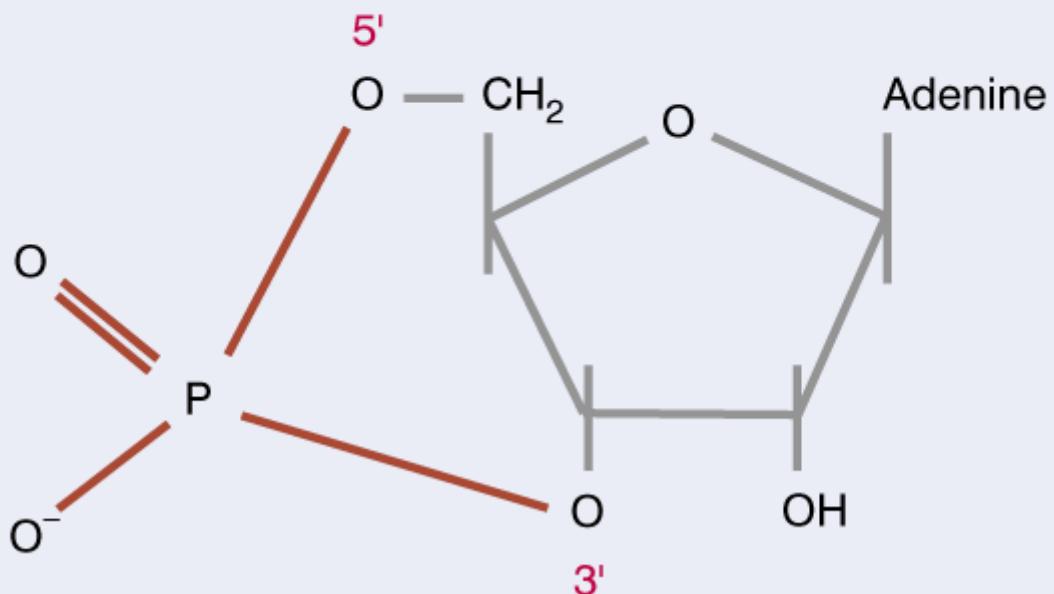
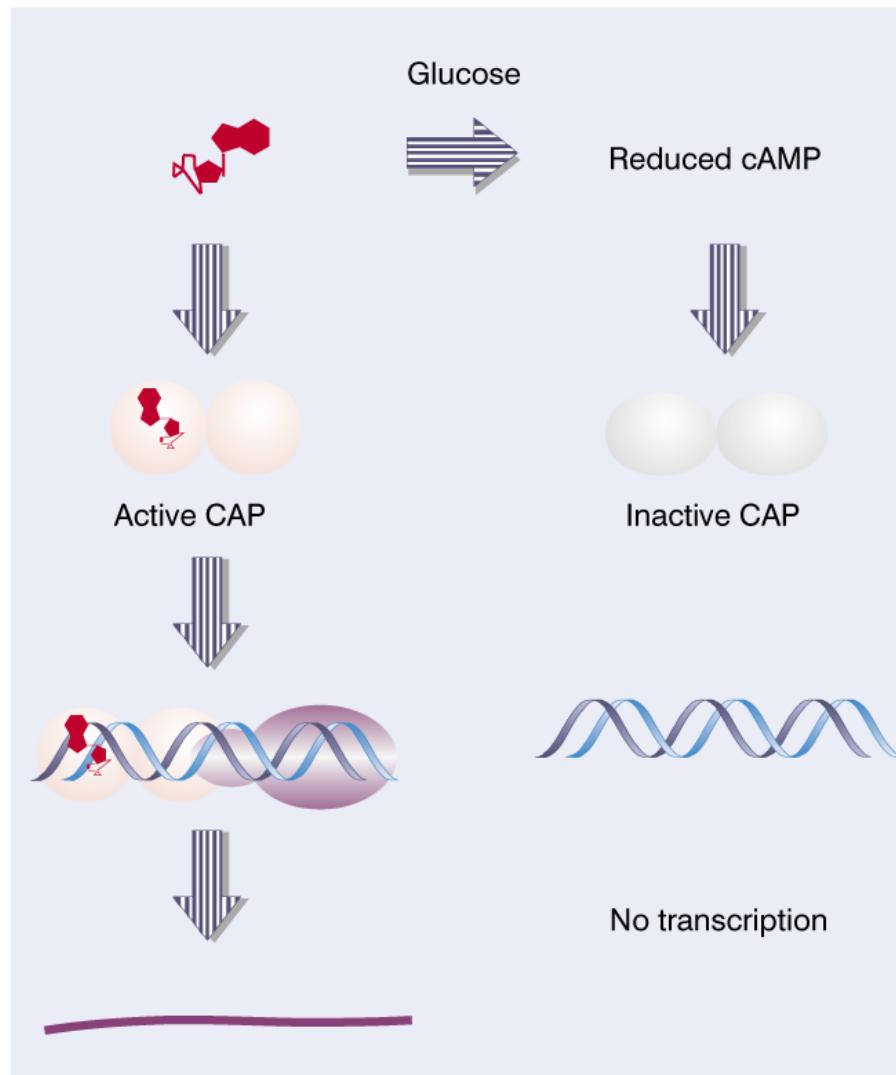
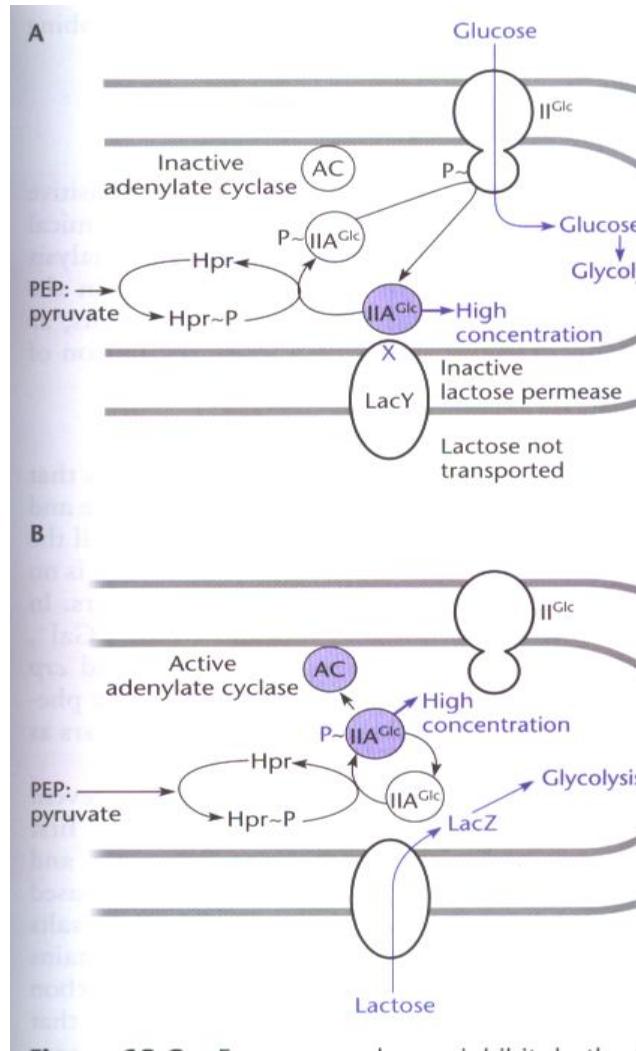


Figure 10.22 Glucose causes catabolite repression by reducing the level of cyclic AMP.

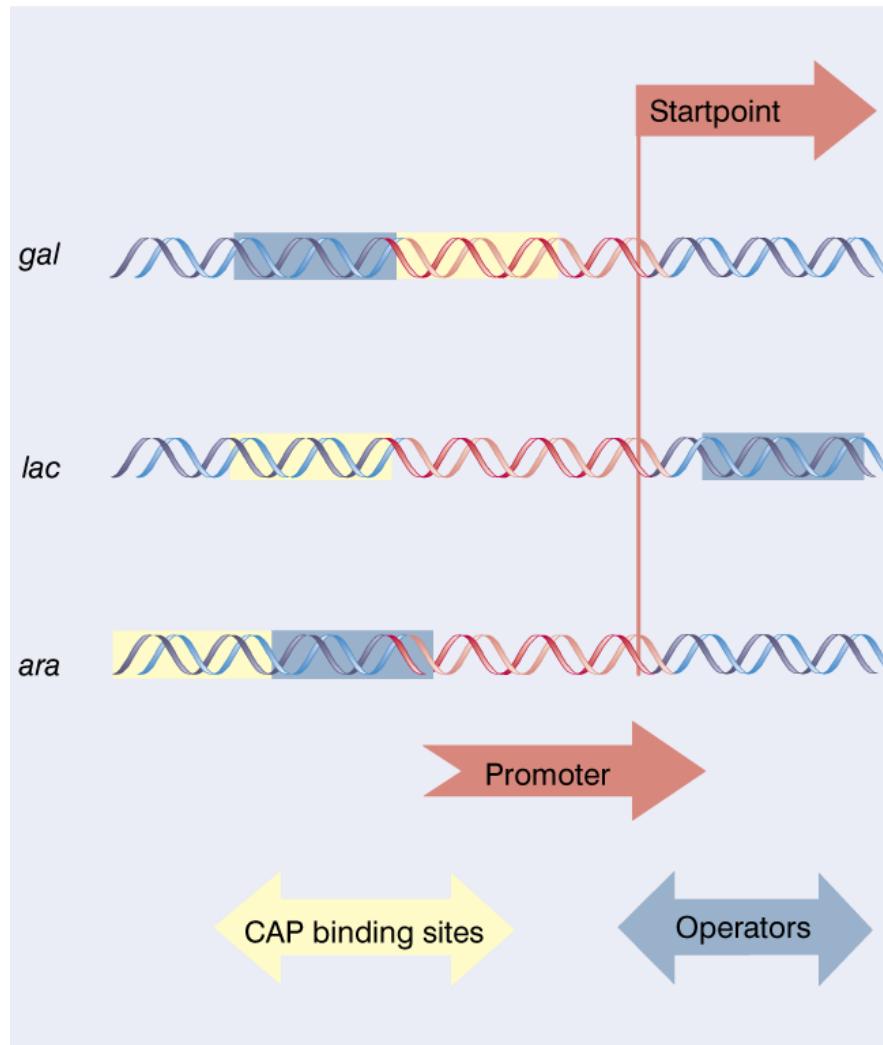


Glukoza povzroči katabolitno represijo zaradi zmanjšanja ravni cAMP

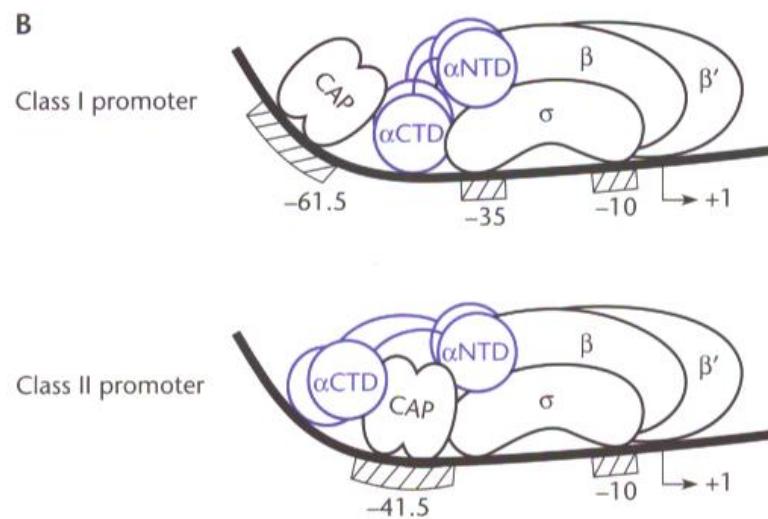


Glukoza inhibira sintezo cAMP in privzem drugih sladkorjev

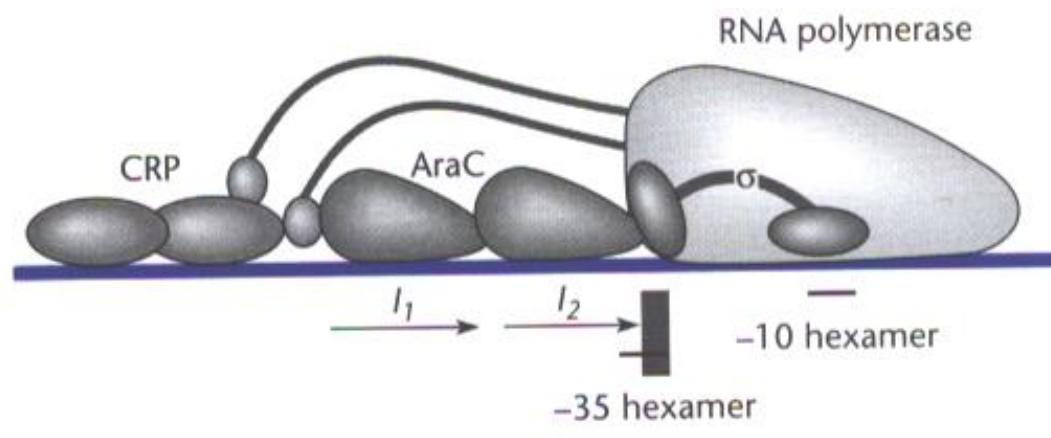
Figure 10.24 The CAP protein can bind at different sites relative to RNA polymerase.



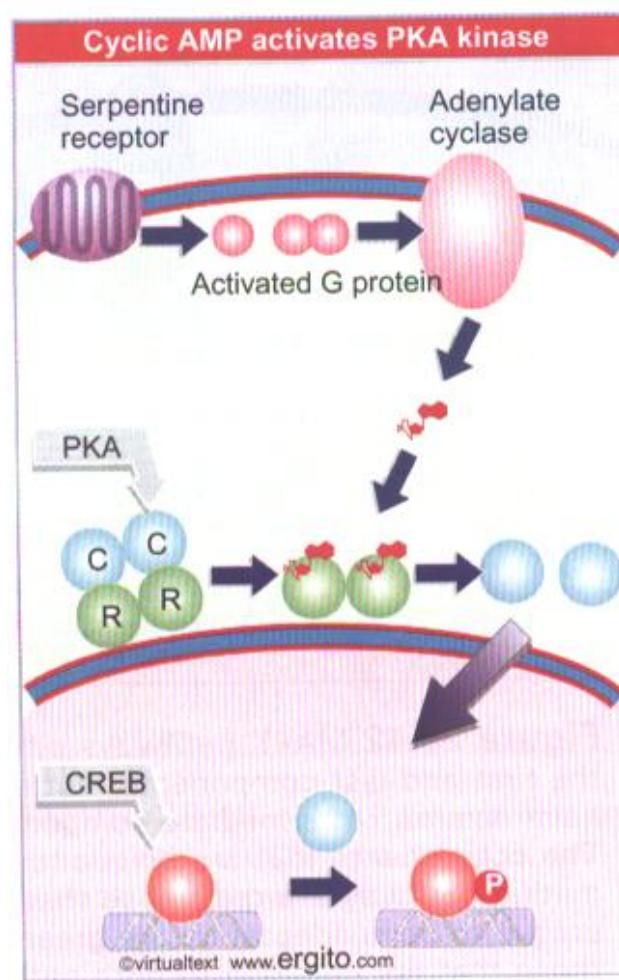
Tri alternativna mesta vezave protein CAP



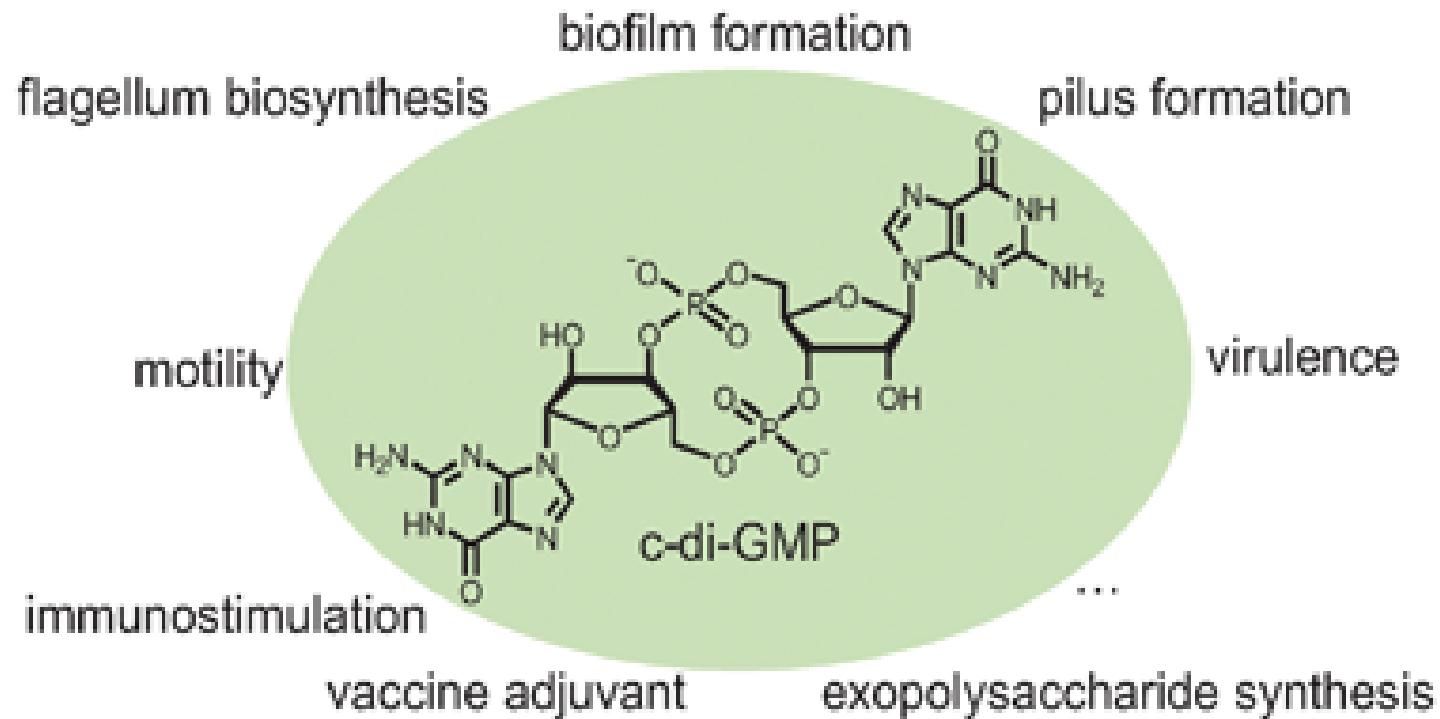
Model vezave in aktivacije promotorja s proteinom CAP



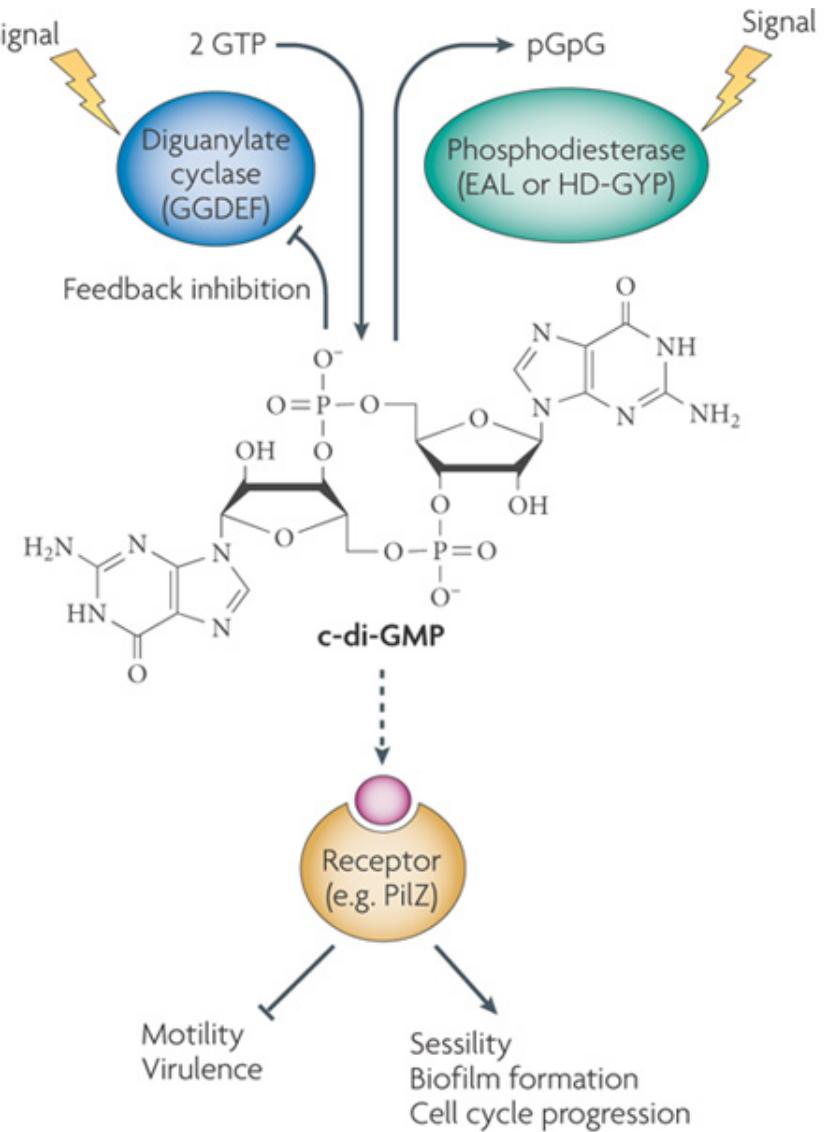
Vezava proteina CAP na promotorej III. razreda



cAMP aktivira kinazo A

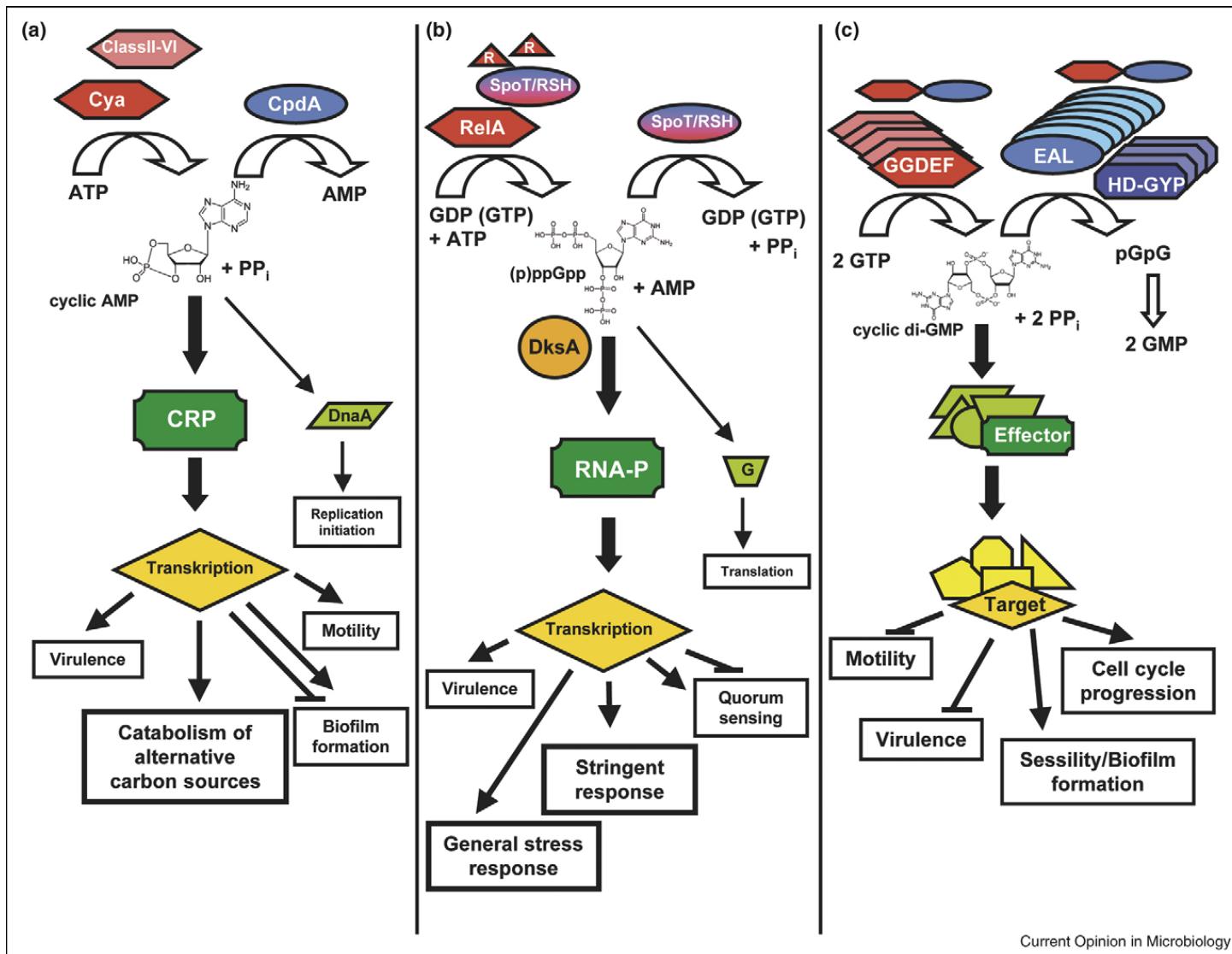


c-di-GMP- ciklični (5-3) digvanozin monofosfat

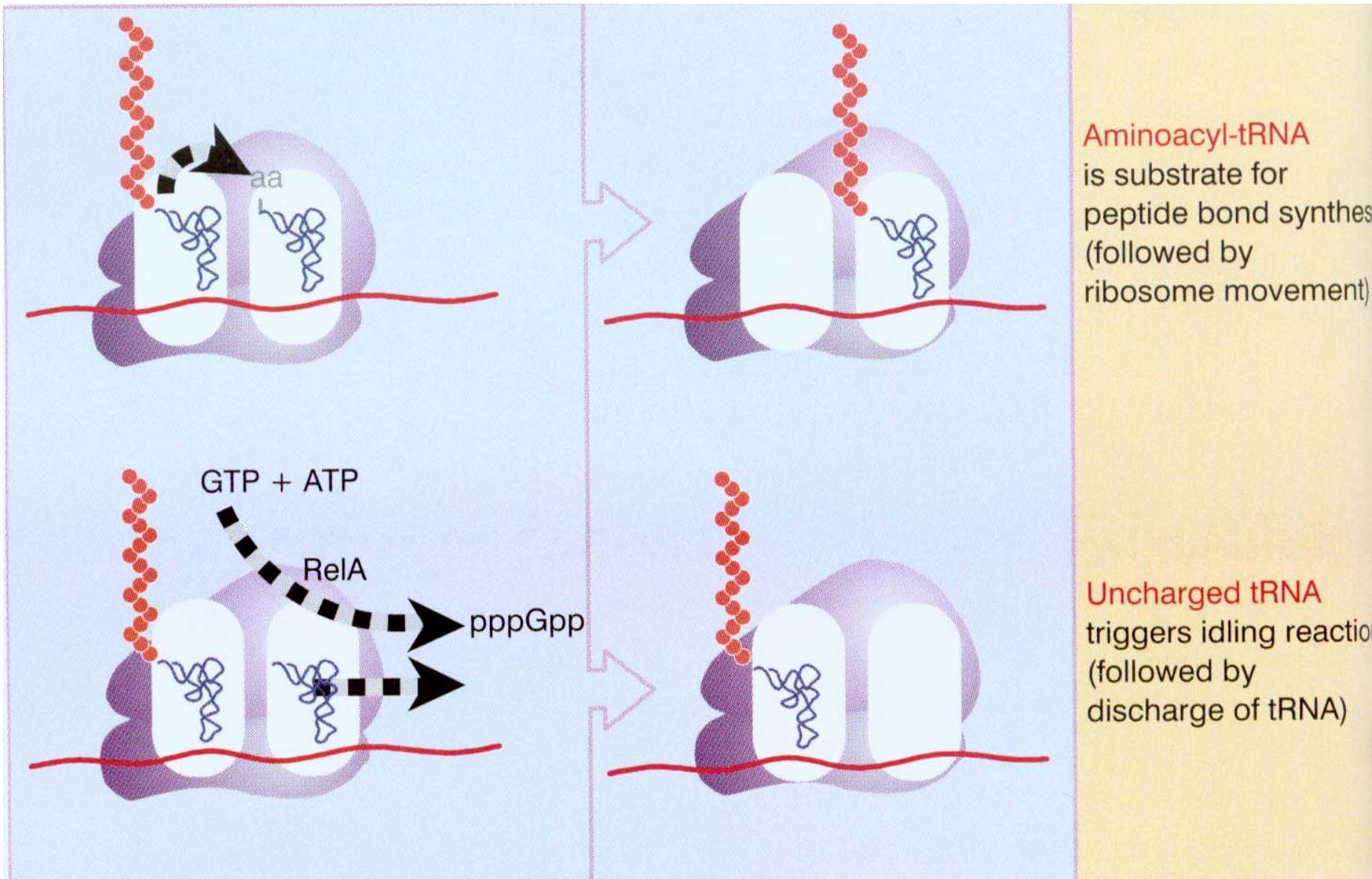


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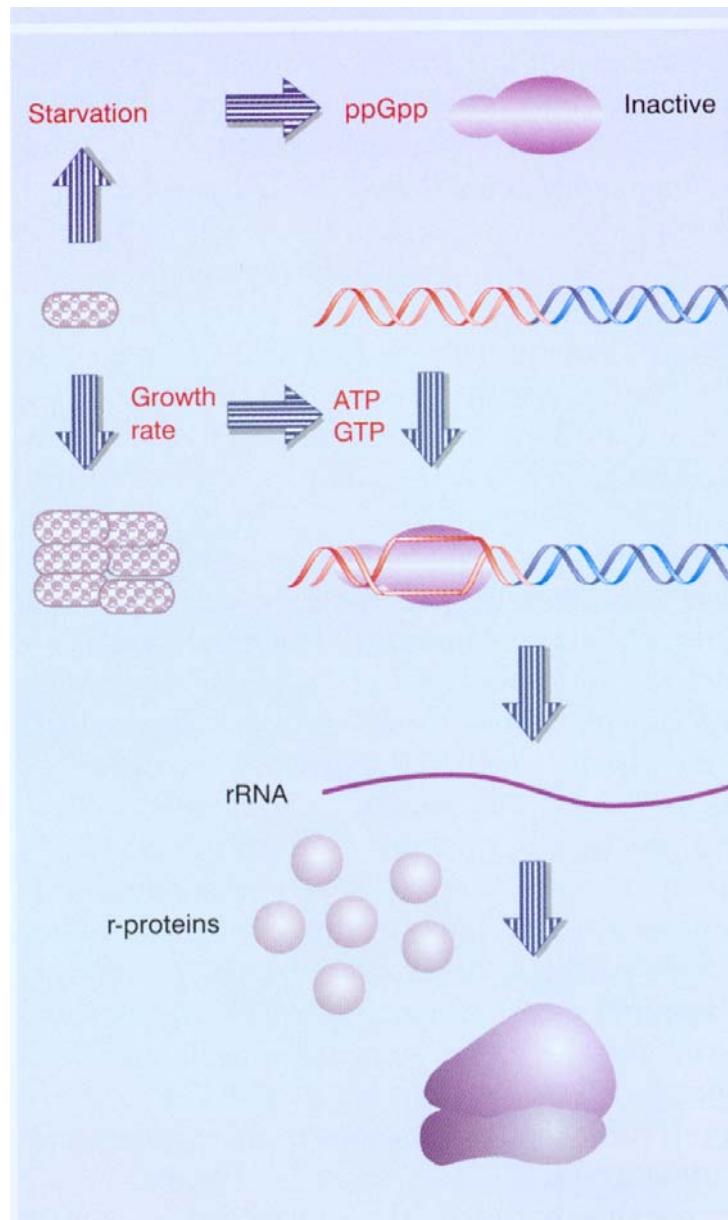
Vloge c-di-GMP



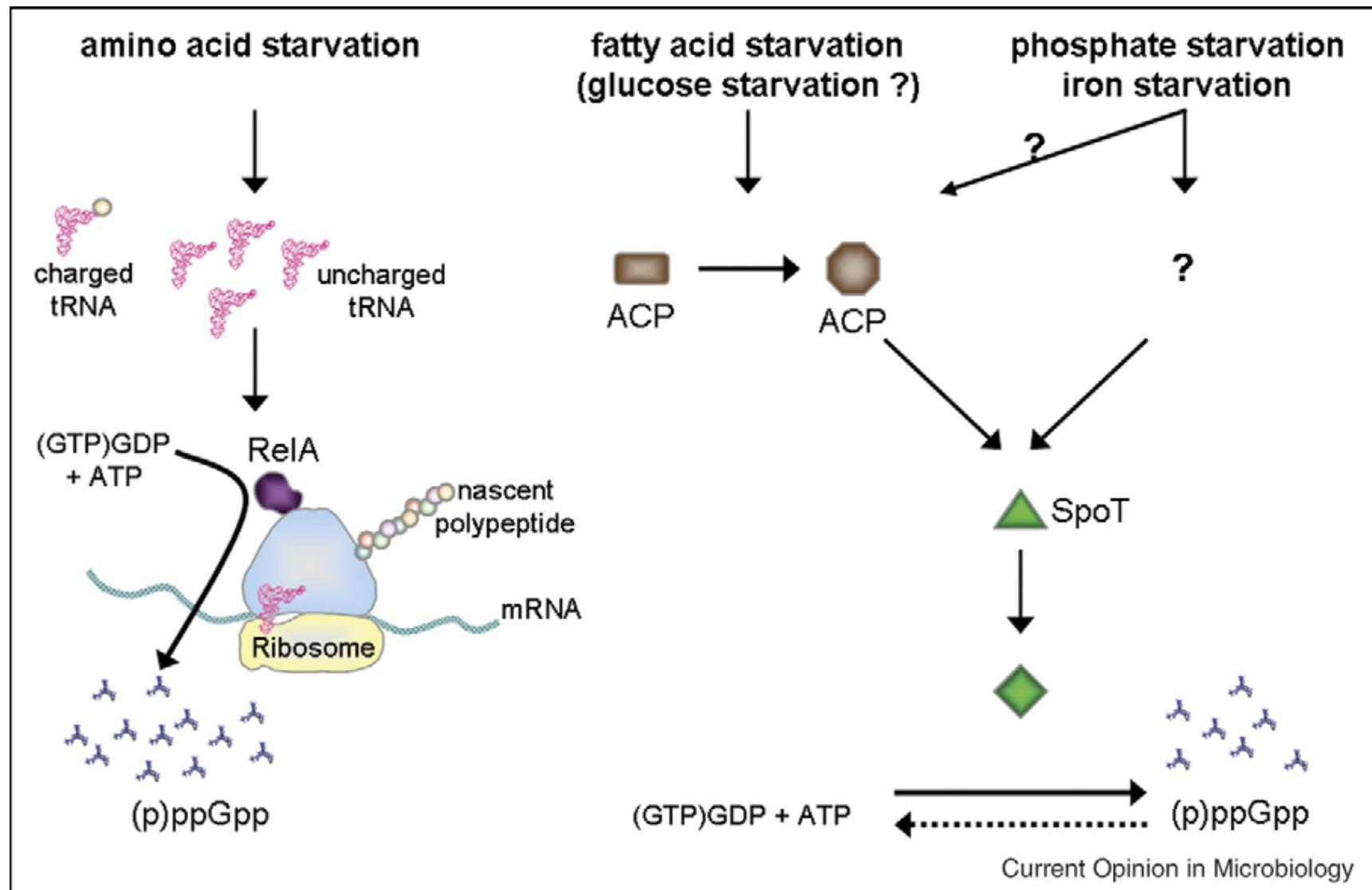
Sekundarni poročevalci: cAMP; ppGpp; c-di-GMP



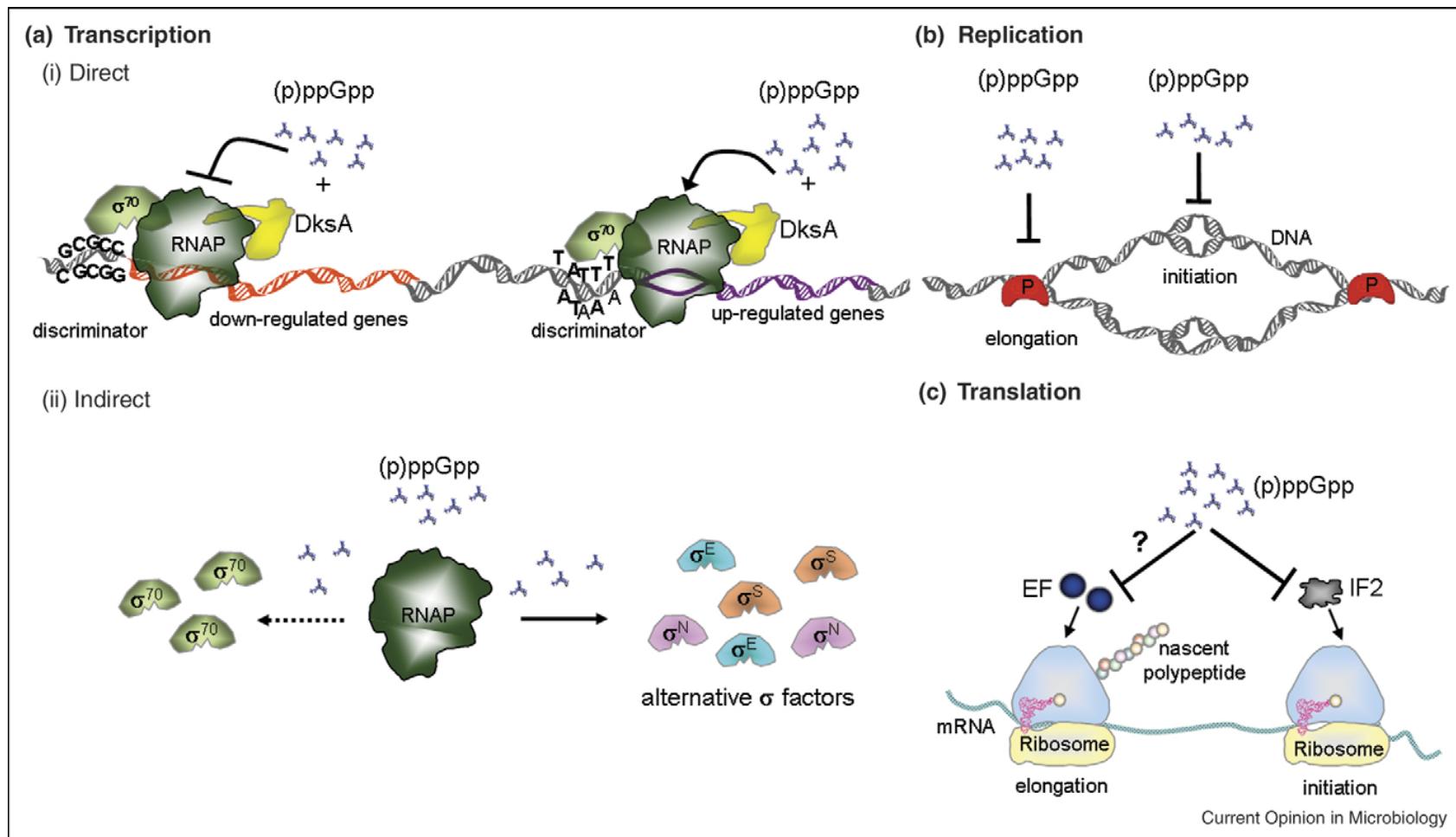
Vstop nenabite tRNA v A mesto ribosoma zazna protein
RelA, sledi sinteza alormona pppGpp oz. ppGpp



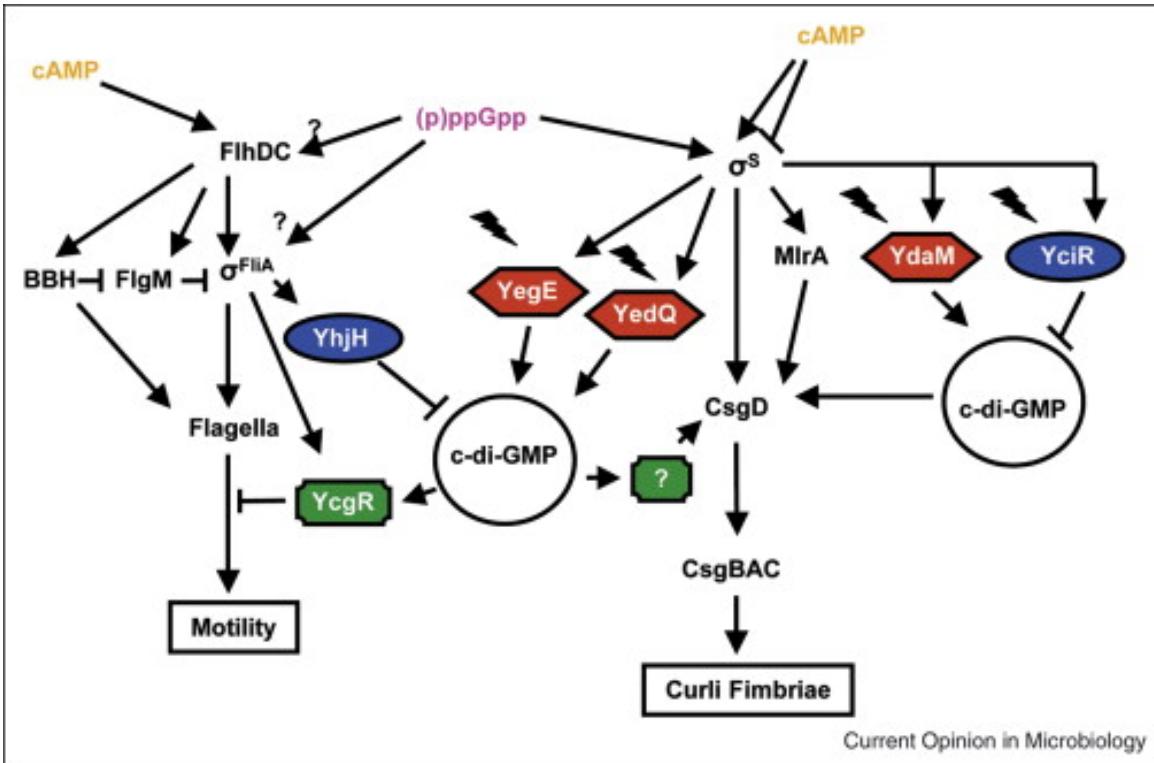
ppGpp vpliva na aktivnost RNA polimeraze



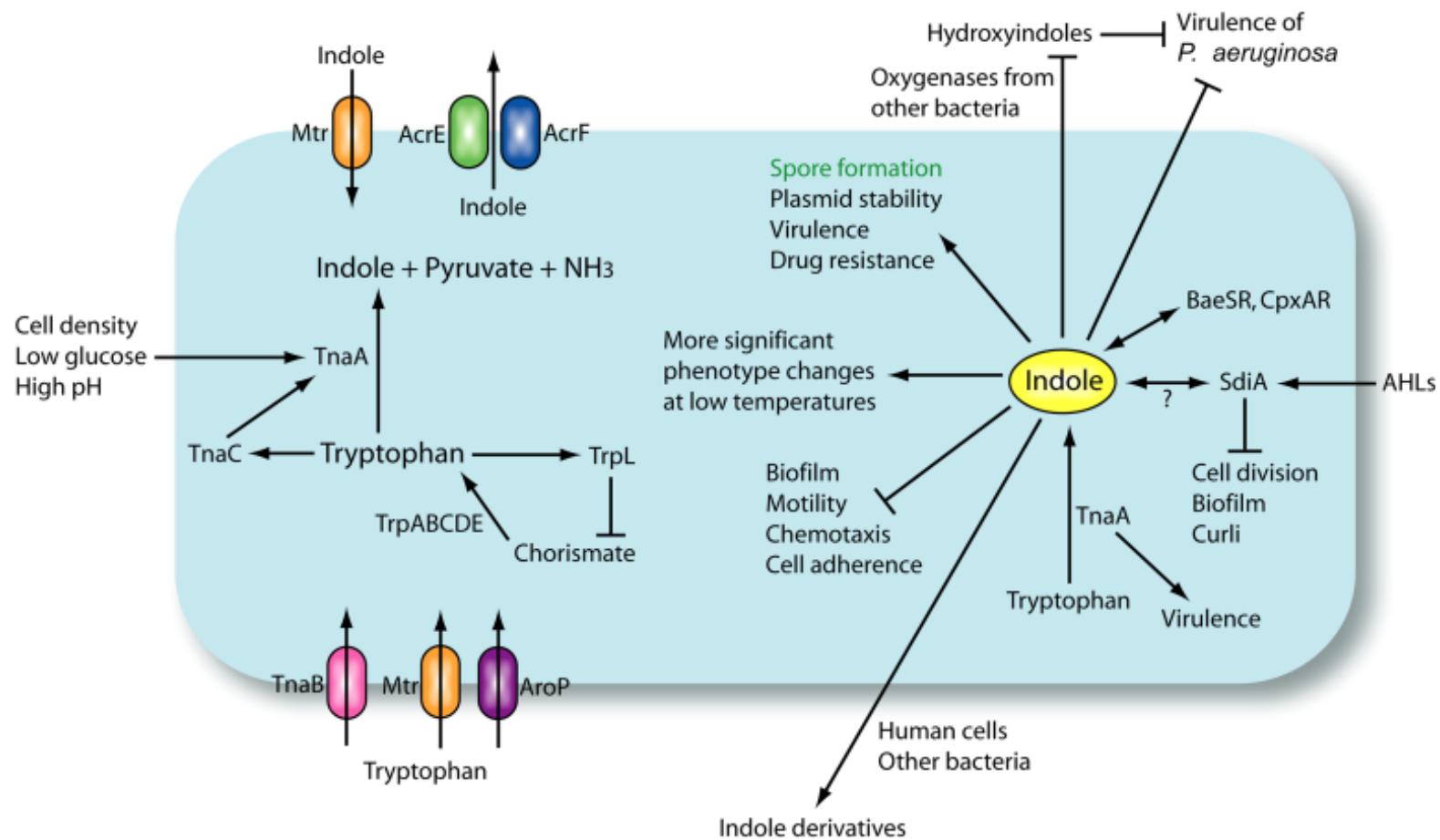
Sinteza ppGpp se poveča ob pomanjkanju amino kislin,
maščobnih kislin (glukoze), fosfata ter železa



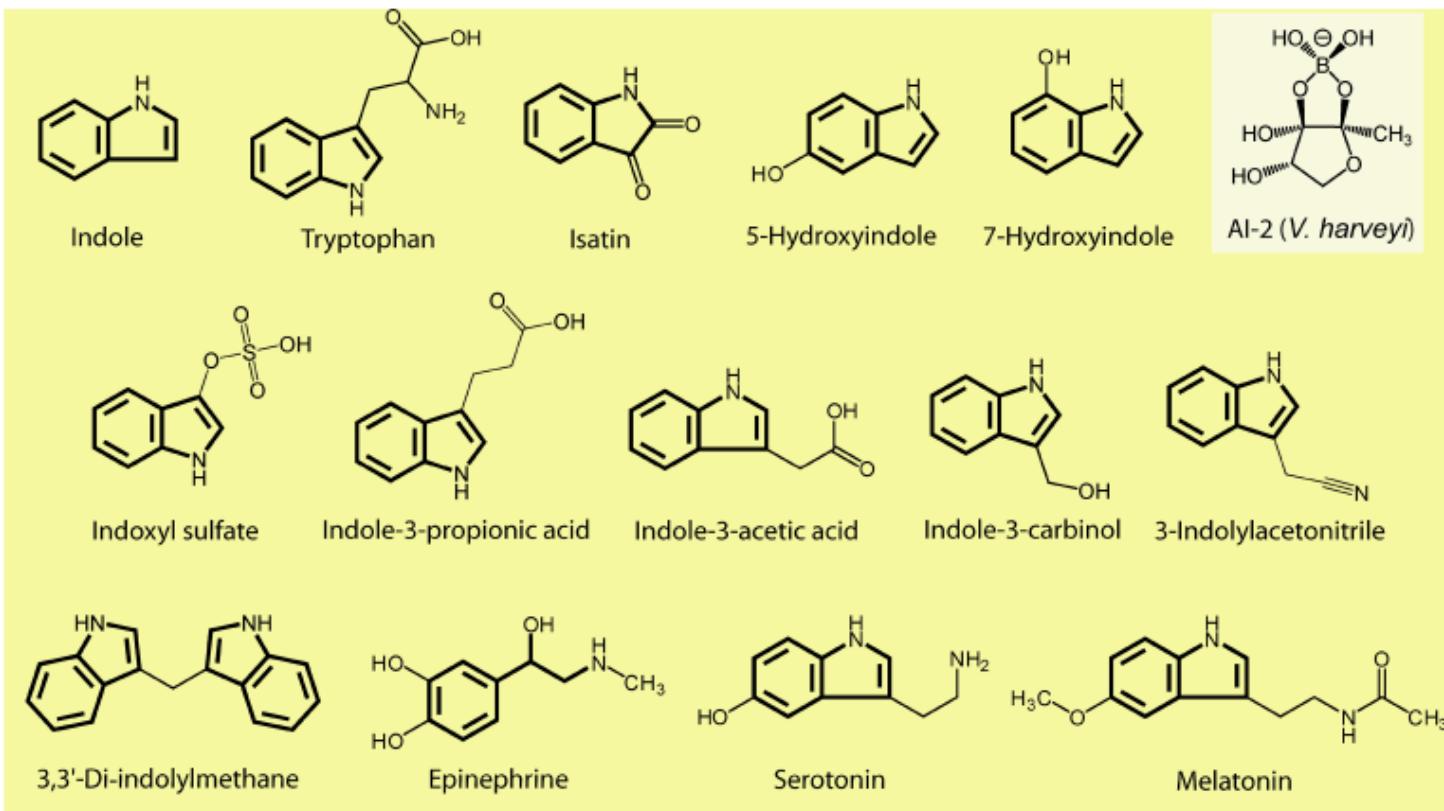
ppGpp uravnava transkripcijo, translacijo in podvajanje



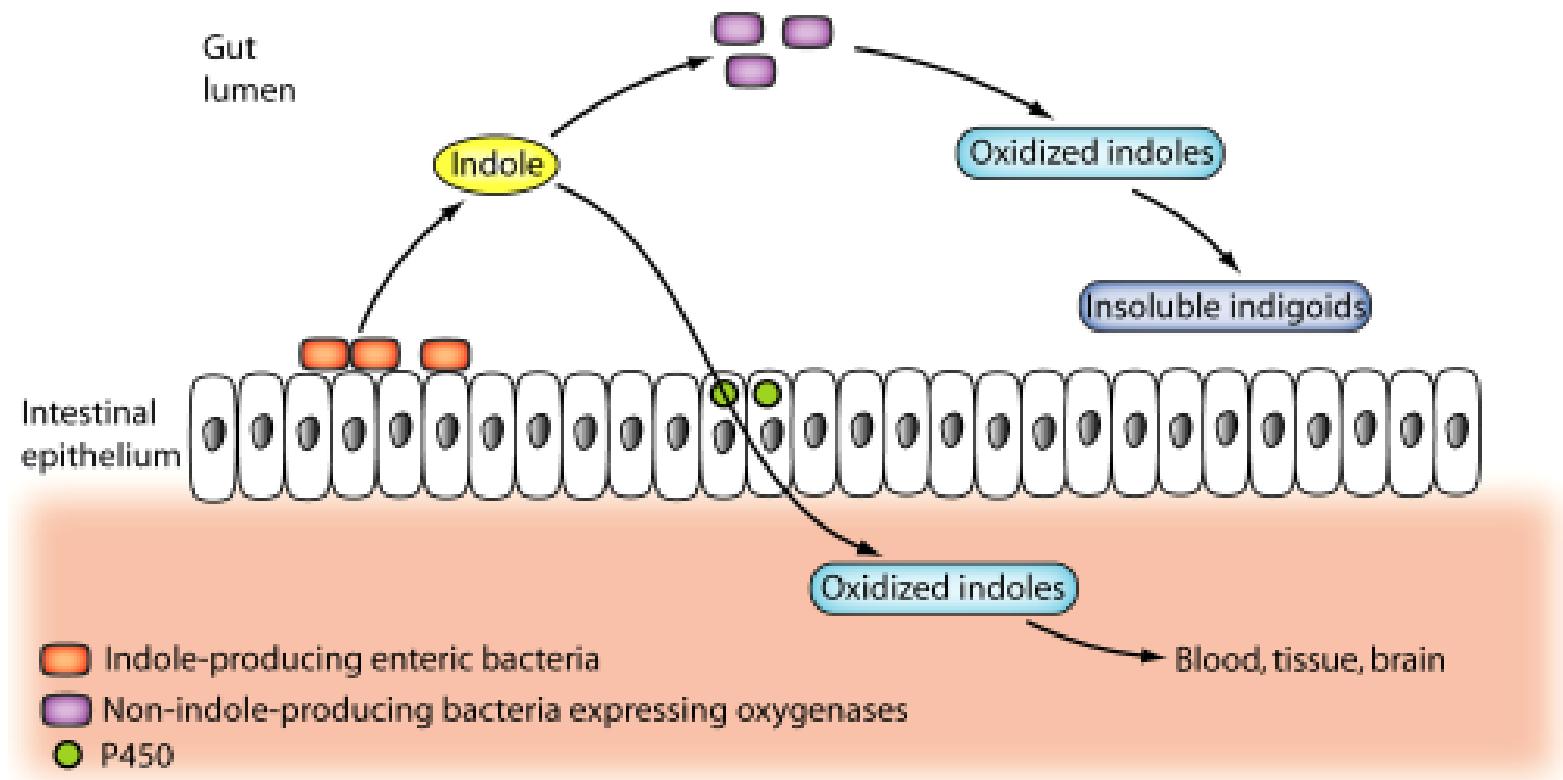
C-di-GMP usklajuje gibljivost in izražanje adhezina pri *E. coli*. Vpletenost tudi cAMP in ppGpp.



Sinteza indola in njegova vloga pri *E. coli*

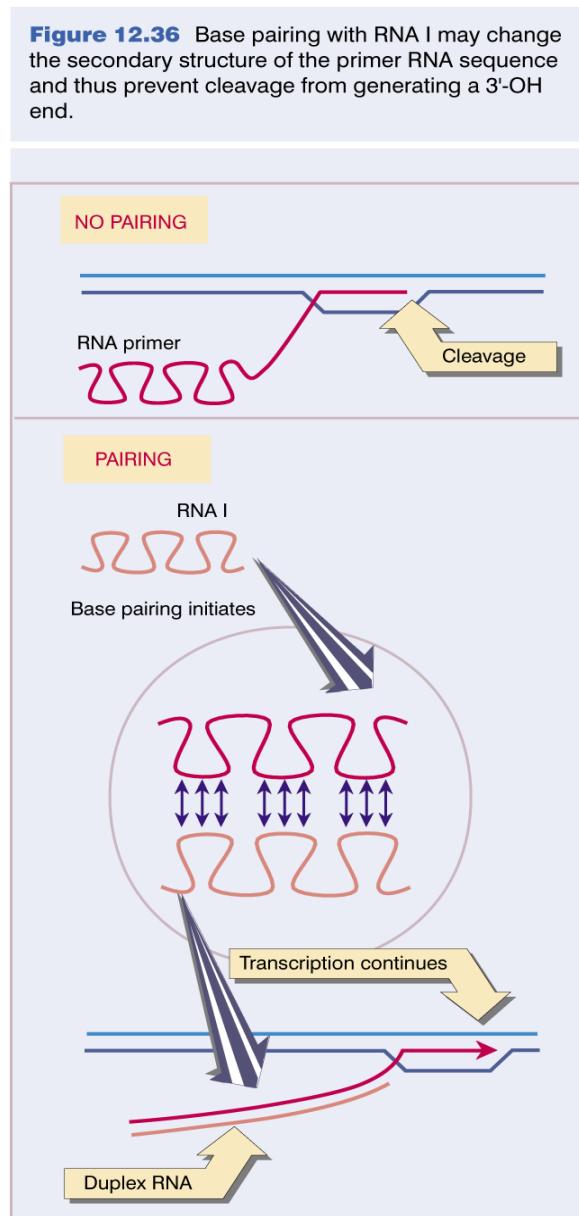


Struktura indolu sorodnih substanc



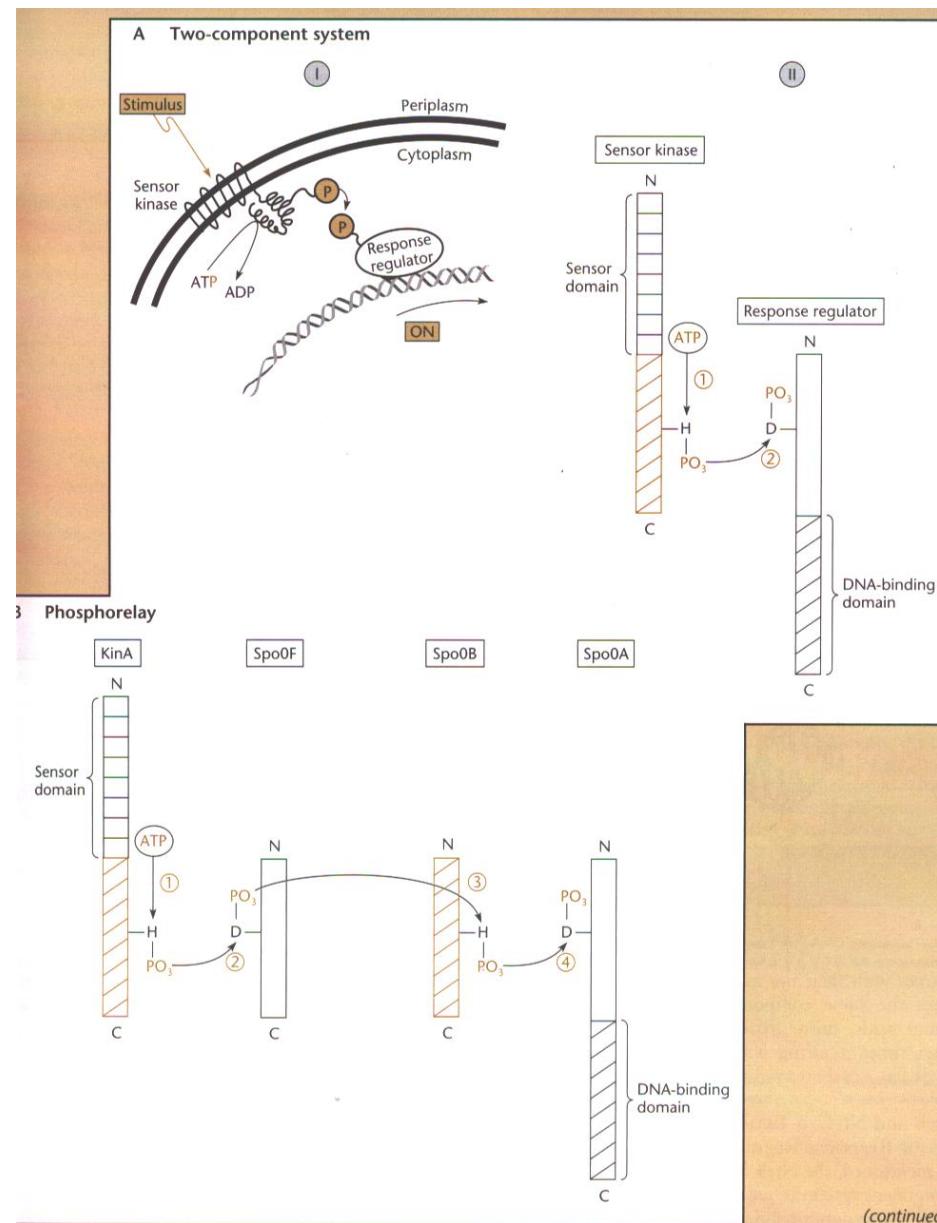
Model interferenčne signalizacije z indolom v prebavnem traktu živali

Figure 12.36 Base pairing with RNA I may change the secondary structure of the primer RNA sequence and thus prevent cleavage from generating a 3'-OH end.

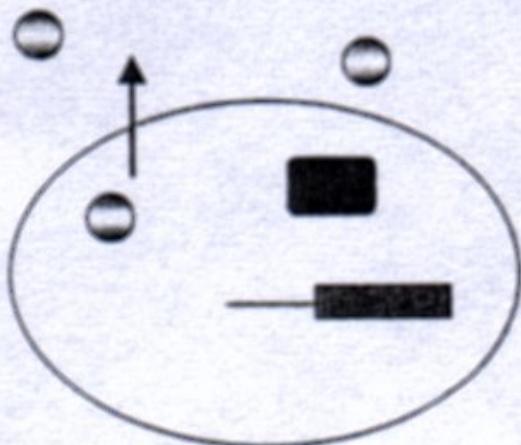


Antisense RNA

Dvokomponentni sistemi bakterij

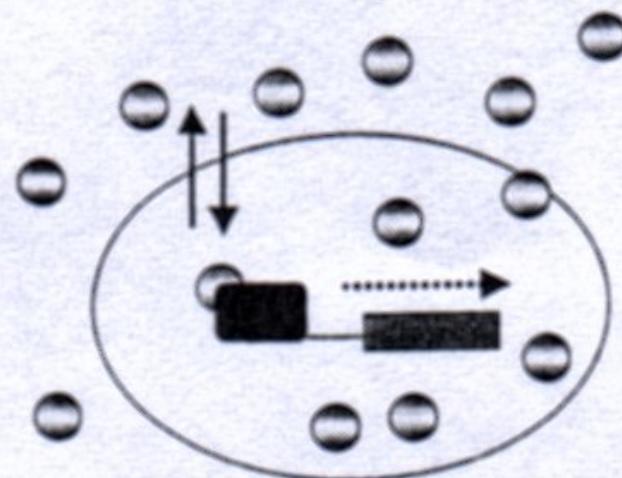


low cell density
low [AHL]



**no transcription
of target gene**

high cell density
high [AHL]



**transcription
of target gene**

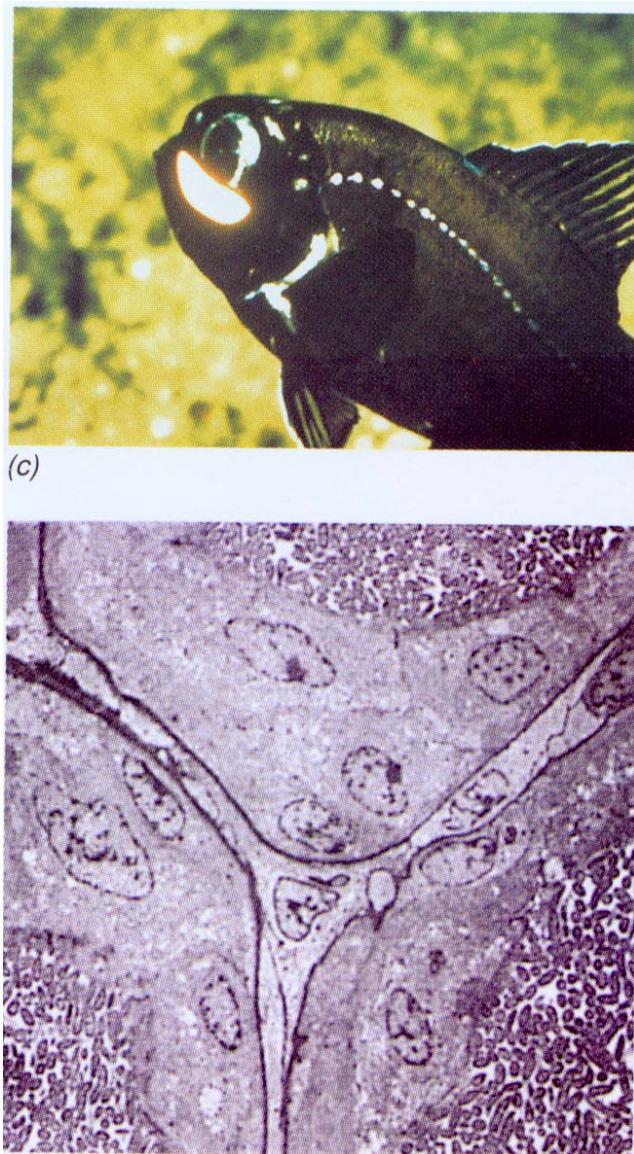
○ = autoinducer (AHL)

■ = R protein

Signalne molekule in medcelična komunikacija pri bakterijah

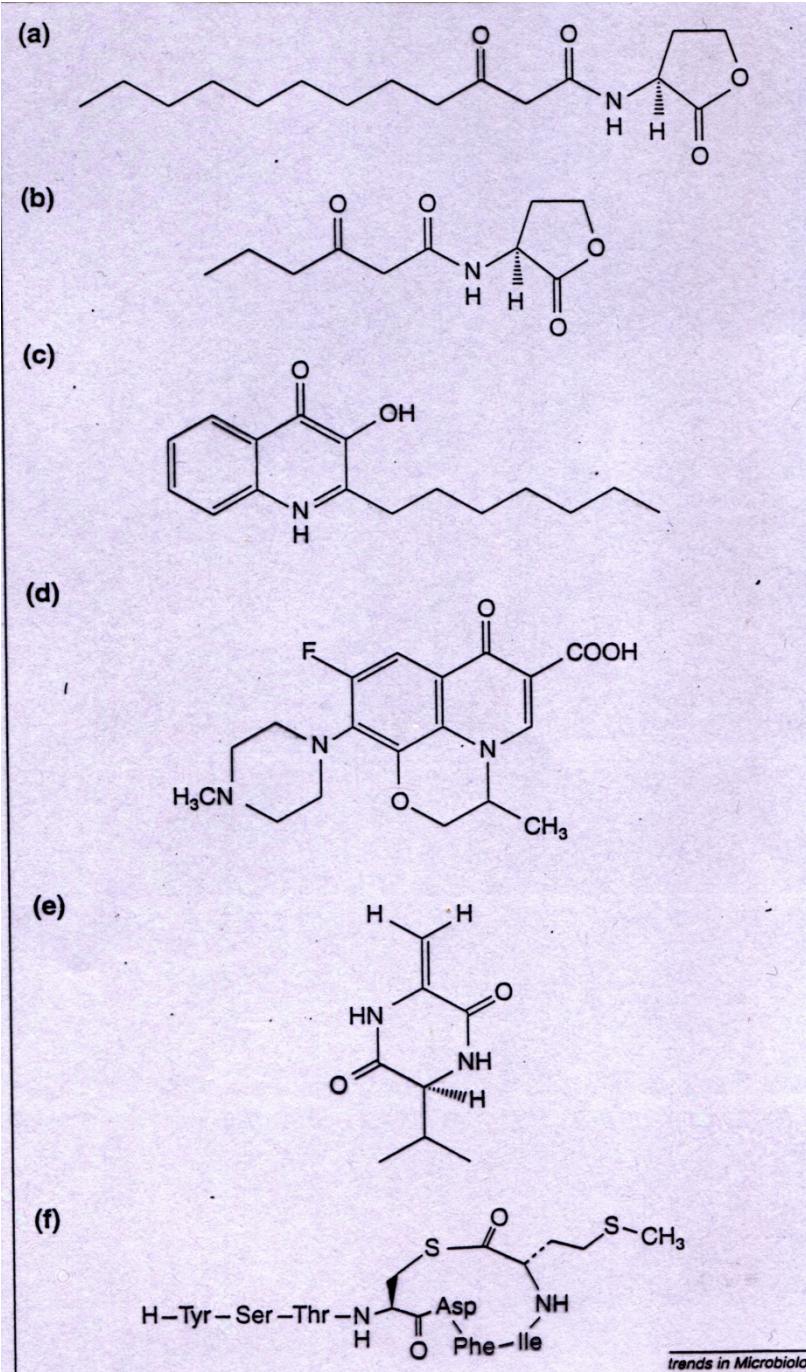


Euprymna scolopes

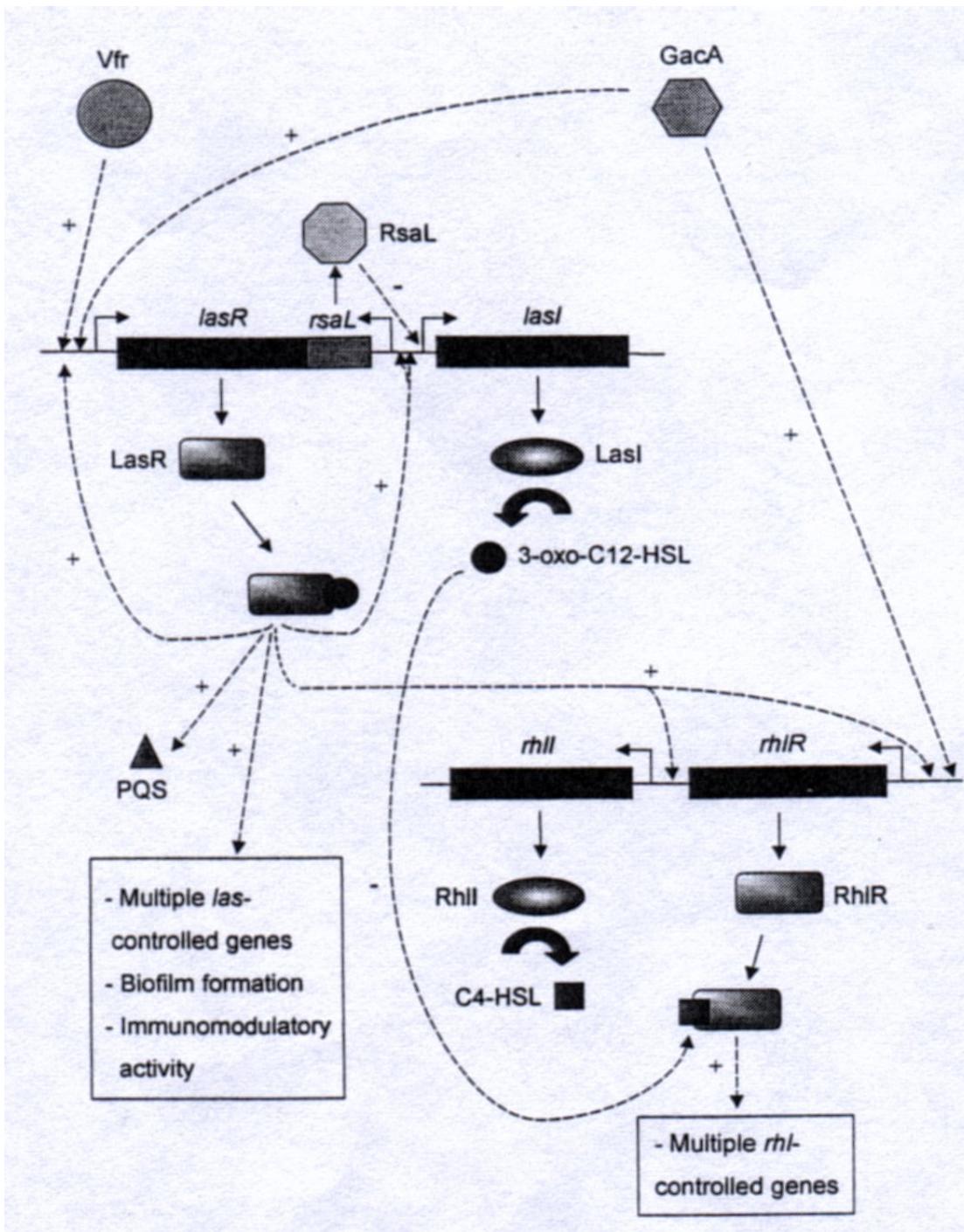


Bakterije v svetlobnem organu rib oddajajo svetlobo

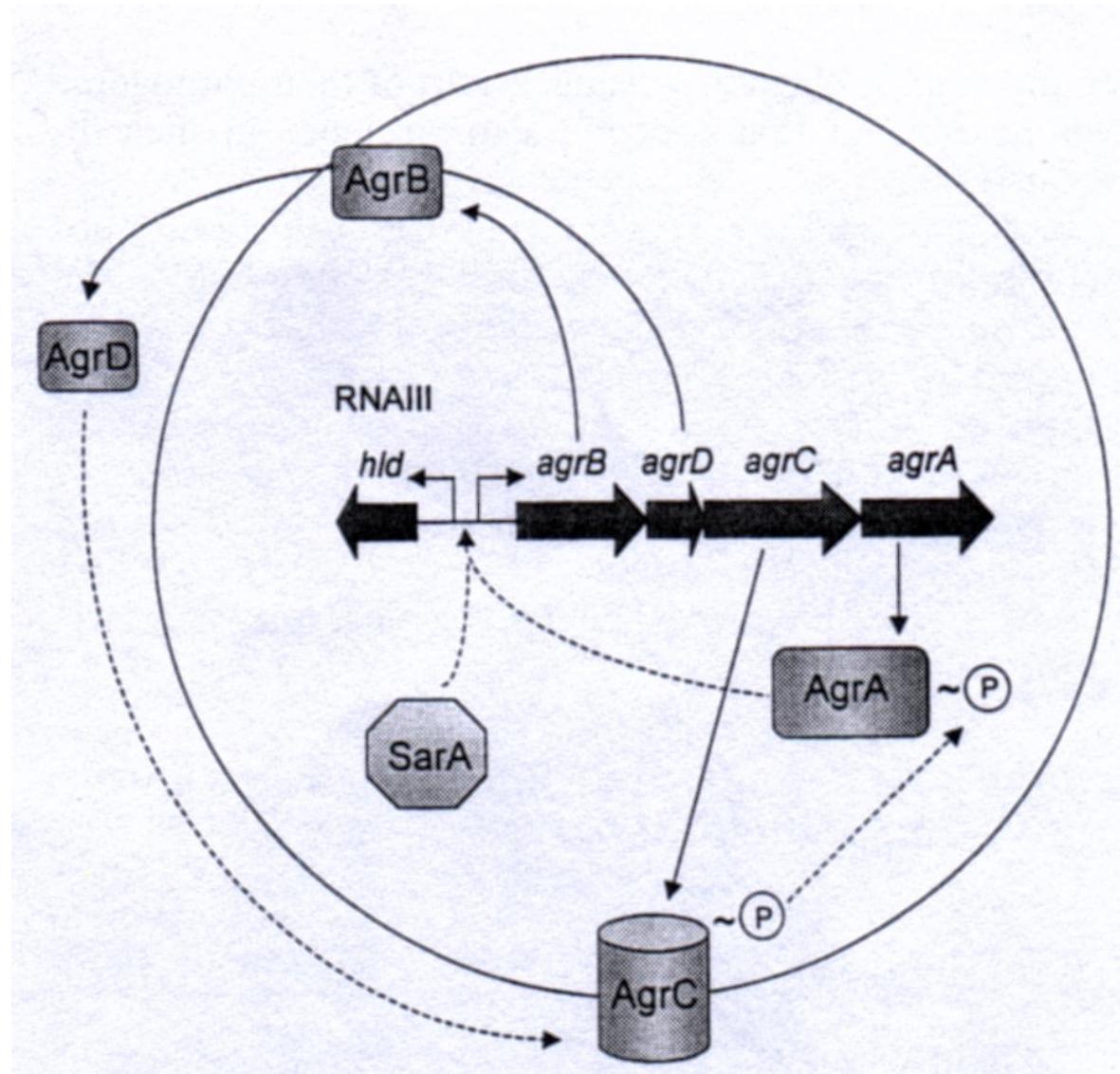
Signalne molekule bakterij



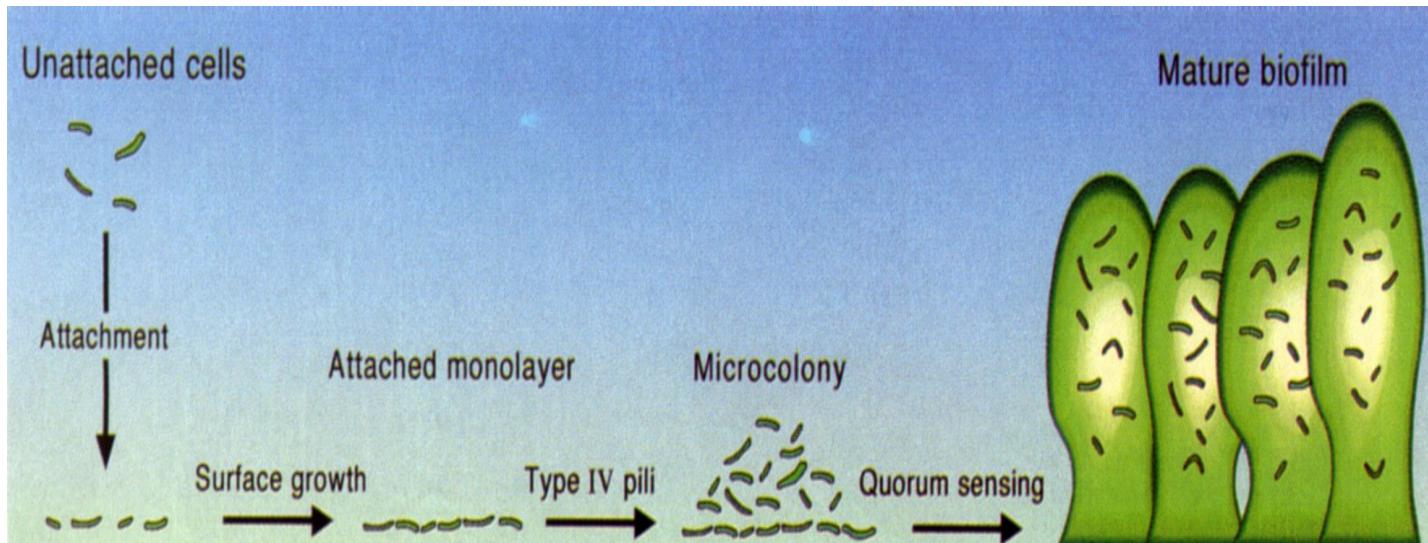
Trends in Microbiology



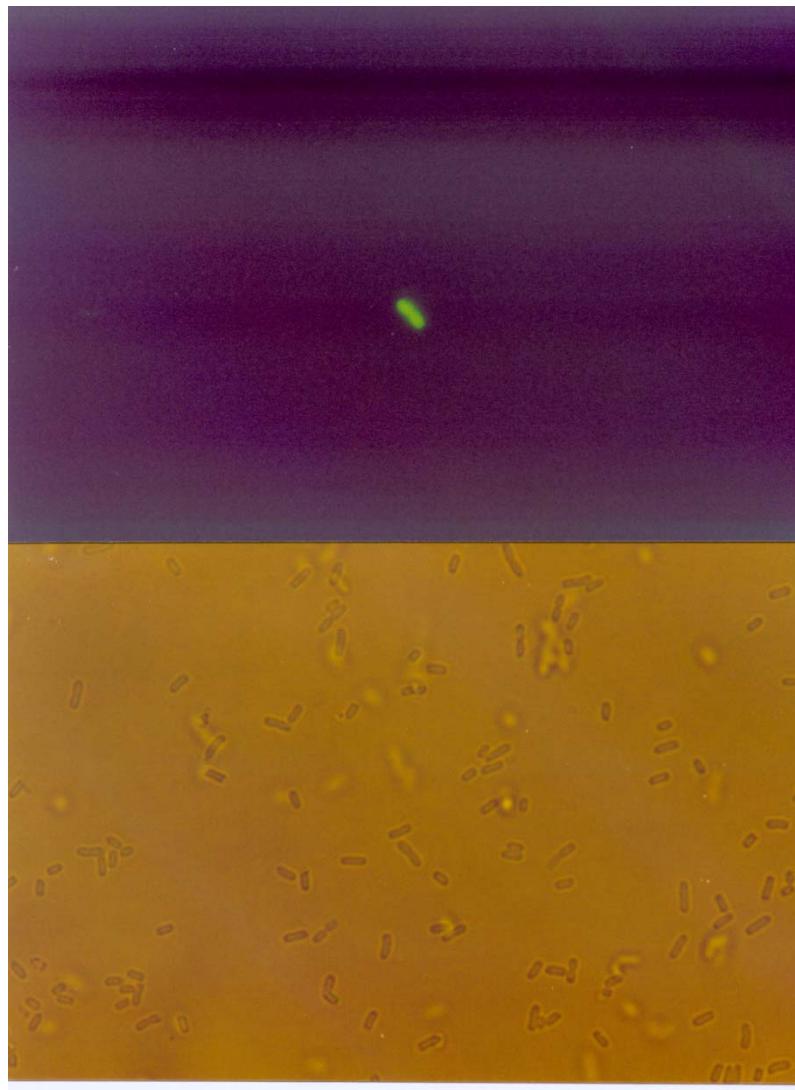
*Quorum sensing
(zaznavanje
gostote
populacije)
bakterije
*Pseudomonas
aeruginosa**



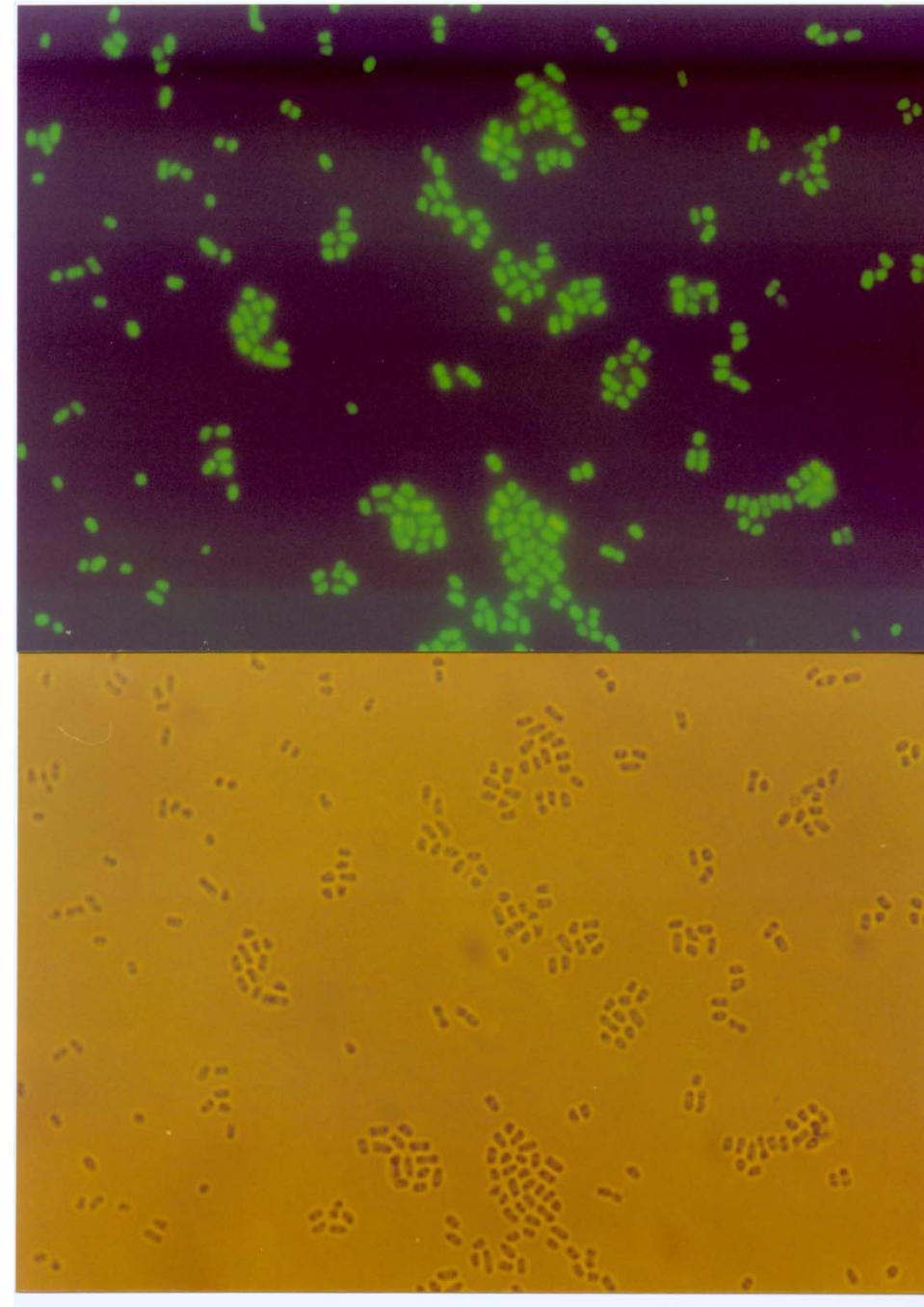
Quorum sensing pri *Staphylococcus aureus*

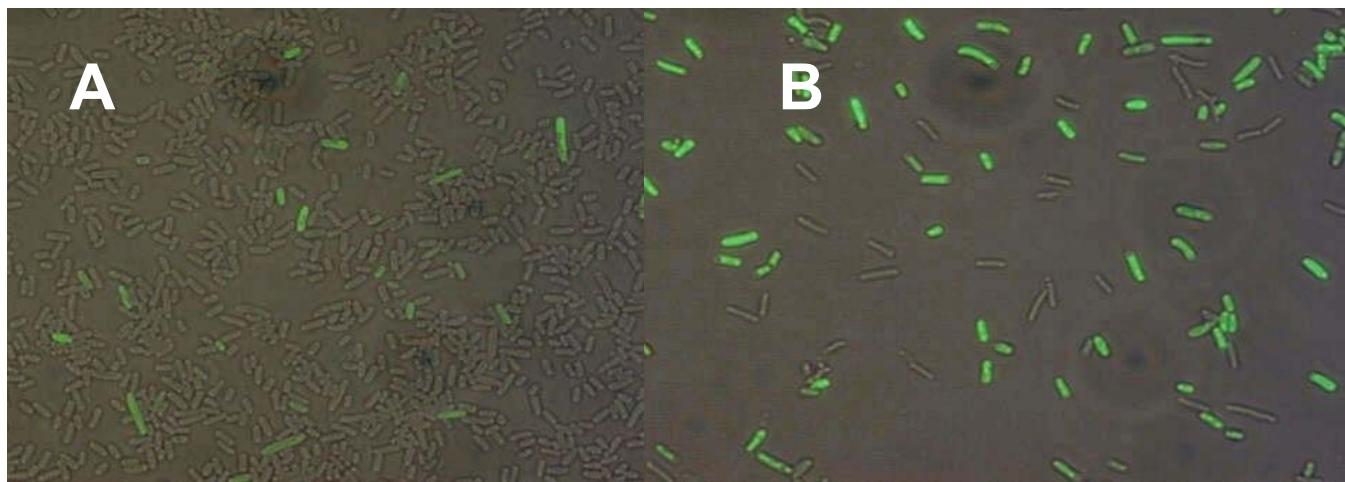


Biofilmi nastajajo s “quorum sensing” pri *P. aeruginosa*



Heterogeno izražanje genov v populaciji genetsko identičnih organizmov - *E. coli*





Titracija regulatorja LexA



Rainbow



Cc

Heterogeno izražanje genov v genetsko identičnih organizmih