Mavzu: **Nuklein kislotalar biosintezi**

Ma’ruzachi: k. f. d., dots. L.S.Kamolov

Reja:

1.Nuklein kislotalar biosintezining fermentlari.

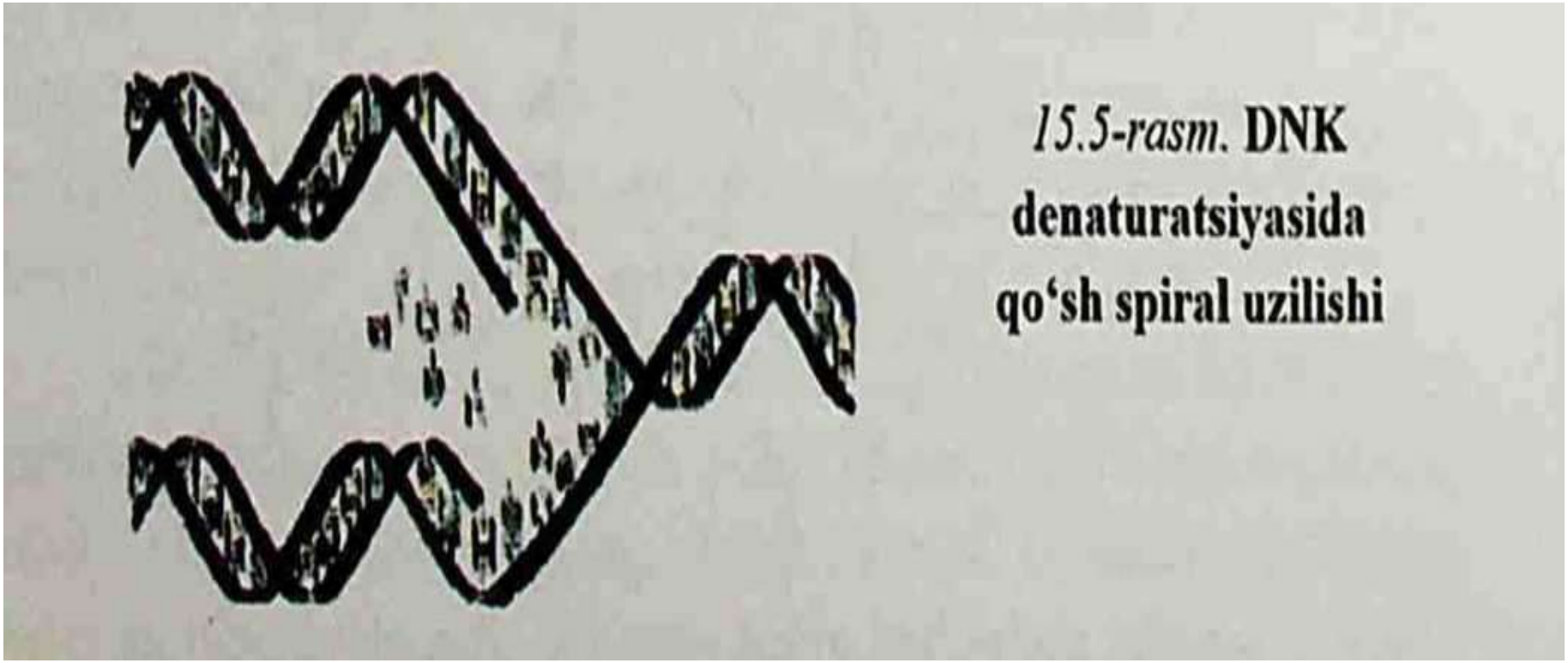
2.DNK – polimeraza, RNK bog‘langan DNK-polimeraza, DNK bog‘langan

3.RNK-polimeraza.

4.DNK fragmentlarining kimèviy-fermentativ sintezi.

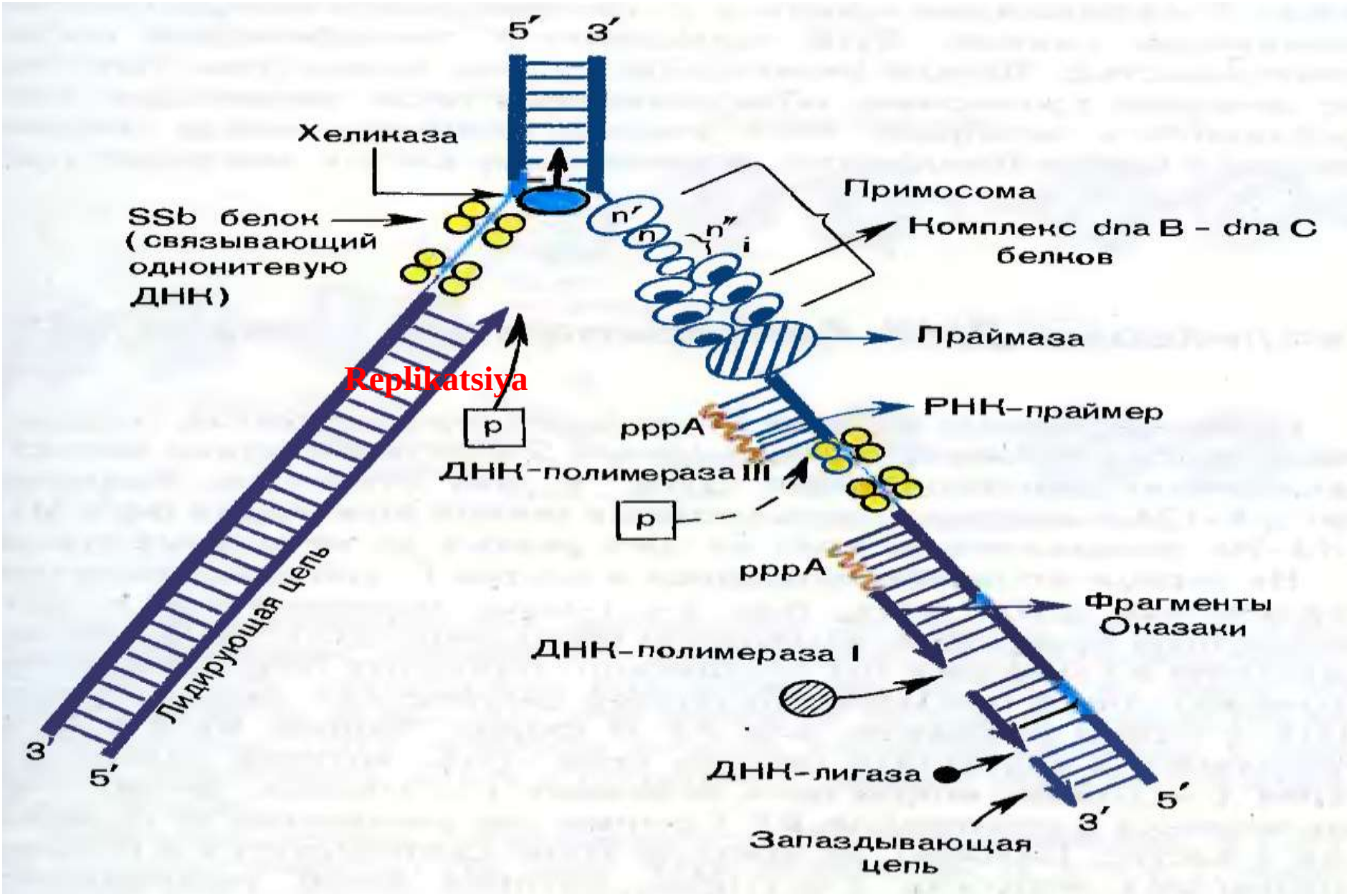
DNK denaturatsiyasi

Nuklein kislotalaming ikkilamchi tuzilishi azot asoslari o‘rta- sida vodorod bog‘lari bilan gidrofob bog‘lar yuzaga kelishi, ya’ni kuchsiz o‘zaro ta’sirlar hisobiga hosil bo‘ladi. Shu munosabat bilan xuddi oqsillarga o‘xshab o‘rtacha darajadagi ta’sirlar natijasida nuklein kislotalar denaturatsiyaga uchrashi mumkin. Nuklein kis- lotalar 70-100°C gacha qizdirilganda, shuningdek, kuchli kislotali yoki ishqorli muhitlarda, mochevina qo[4]shilganida denaturatsiya yuz beradi. Vodorod bog‘lari bilan gidrofob bog‘lar uzilishi natijasida zanjirlar bir-biridan qochib, tartibsiz koptokcha shakliga



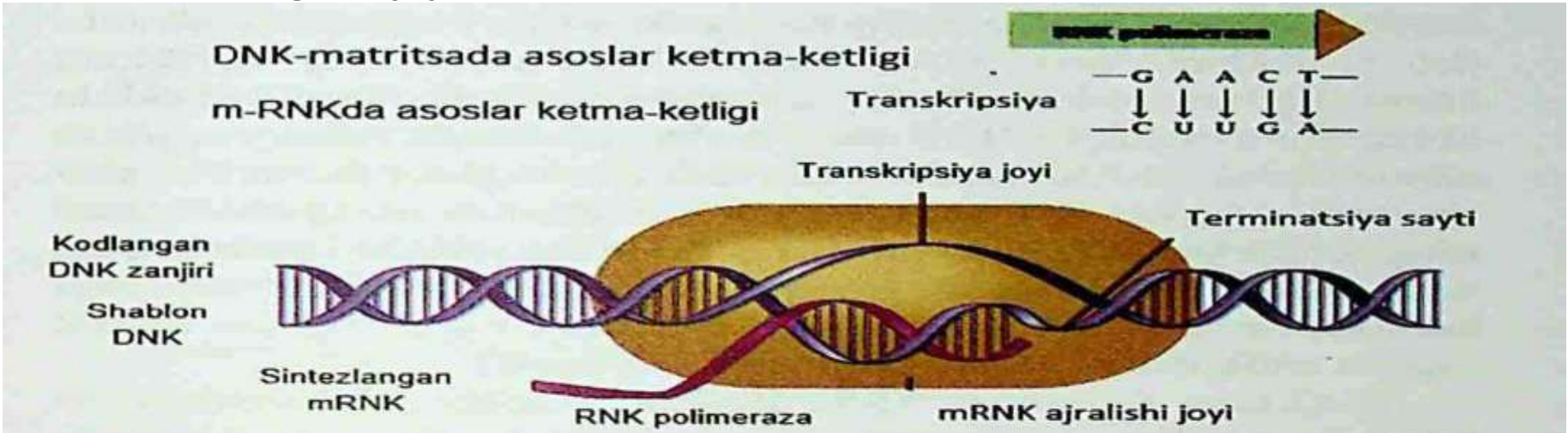
15.5-rasm. **DNK denaturatsiyasida qo‘sh spiral uzilishi**

Replikatsiya



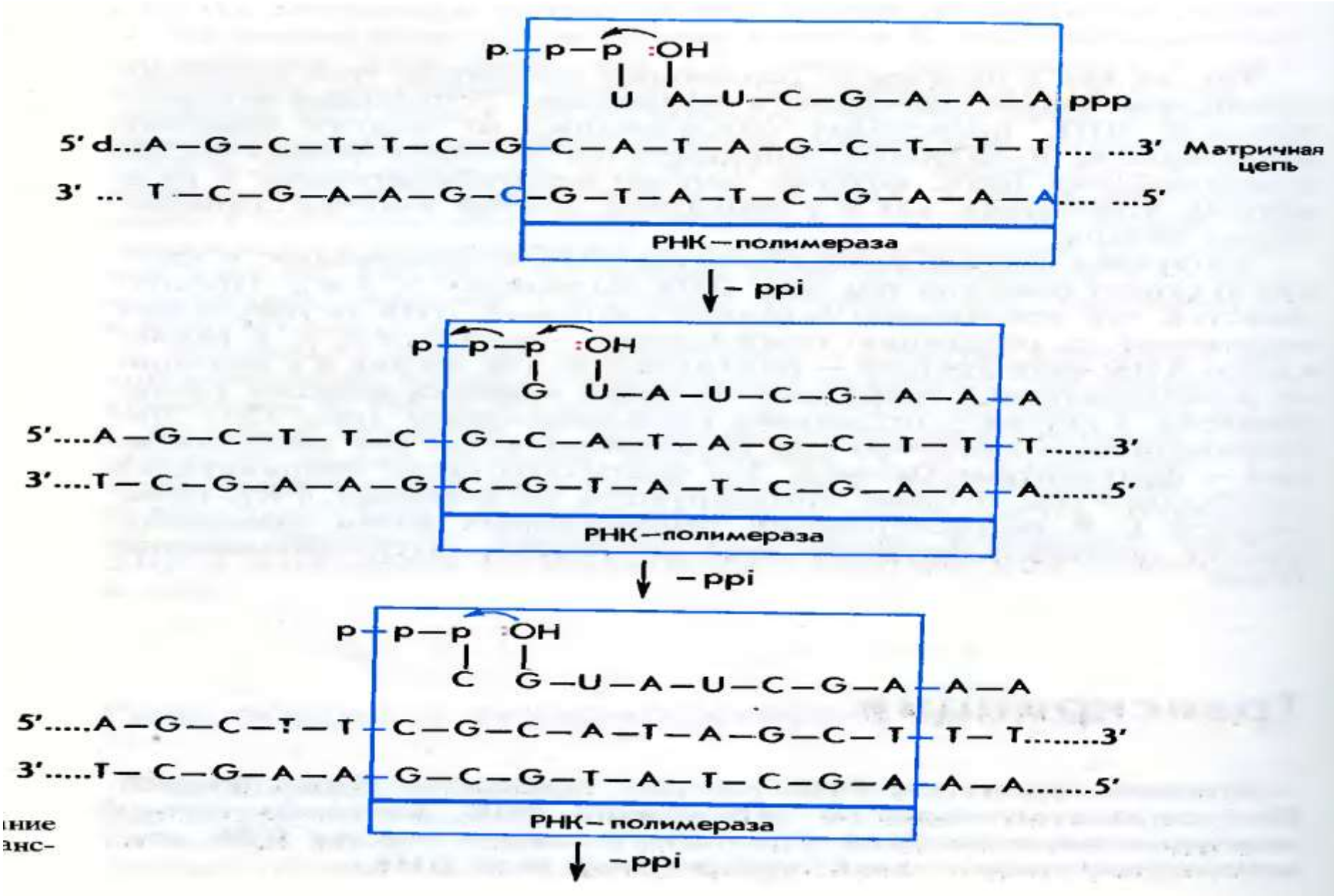
Transkripsiya

Transkripsiya gen saqlovchi DNK molekulasida zanjiming bir qismi yechilib nusxa olishga tayyor bo‘lishidan boshlanadi. DNKning mazkur ajralgan qismi ichida RNK-polimeraza fermenti zanjirdan birini mRNK sinlezi uchun matritsa sifatida qo‘llaydi. Shuningdek, DNK sintezidagi kabi S (sitozin) G(guanin) bilan komplementar ravishda bog‘lanadi, lckin mRNKda U(uratsil) A(adenin) bilan juft hosil qiladi. RNK-polim- erazalar DNK matritsa zanjiri bo‘ylab harakatlanib asoslar o‘rtasi- da bog‘ hosil bolishini ta’minlaydi. RNK-polimeraza terminatsiya joyiga yetganda, transkripsiya yakunlanadi va yangi mRNK ajratilib yuboriladi. DNKning uzilgan qismi o‘zining qo‘sh spiralli tuzilishi- ga qaytadi. *Transport RNK (tRNK)* RNK molekulalarining umumiy hiso- bidan eng kami bo‘lib, mRNKda saqlanuvchi genetik axborotni o‘qib, ma’lum bir aminokislotani ribosomaga oqsil sintezi uchun olib keladi. Faqat tRNKgina oqsillar uchun genetik axborotni oqsil- lar aminokislotalariga tasljiiy oladi.



15.7-rasm. **DNK transkripsiyasida RNK-polimeraza DNKning bitta zanjirini matritsa sifatida, ikkinchisini shablon sifatida ishlatadi**

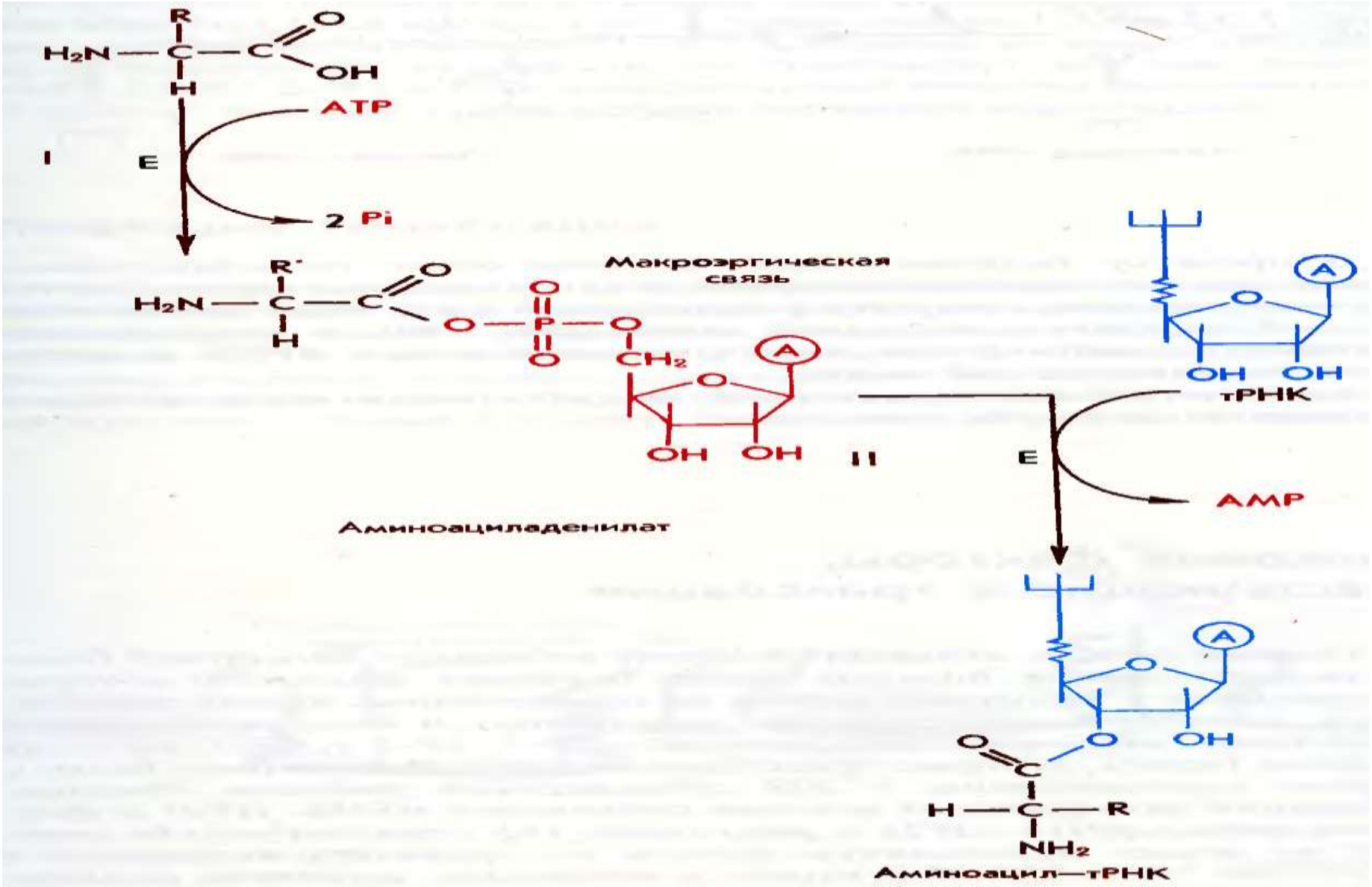
Transkripsiya



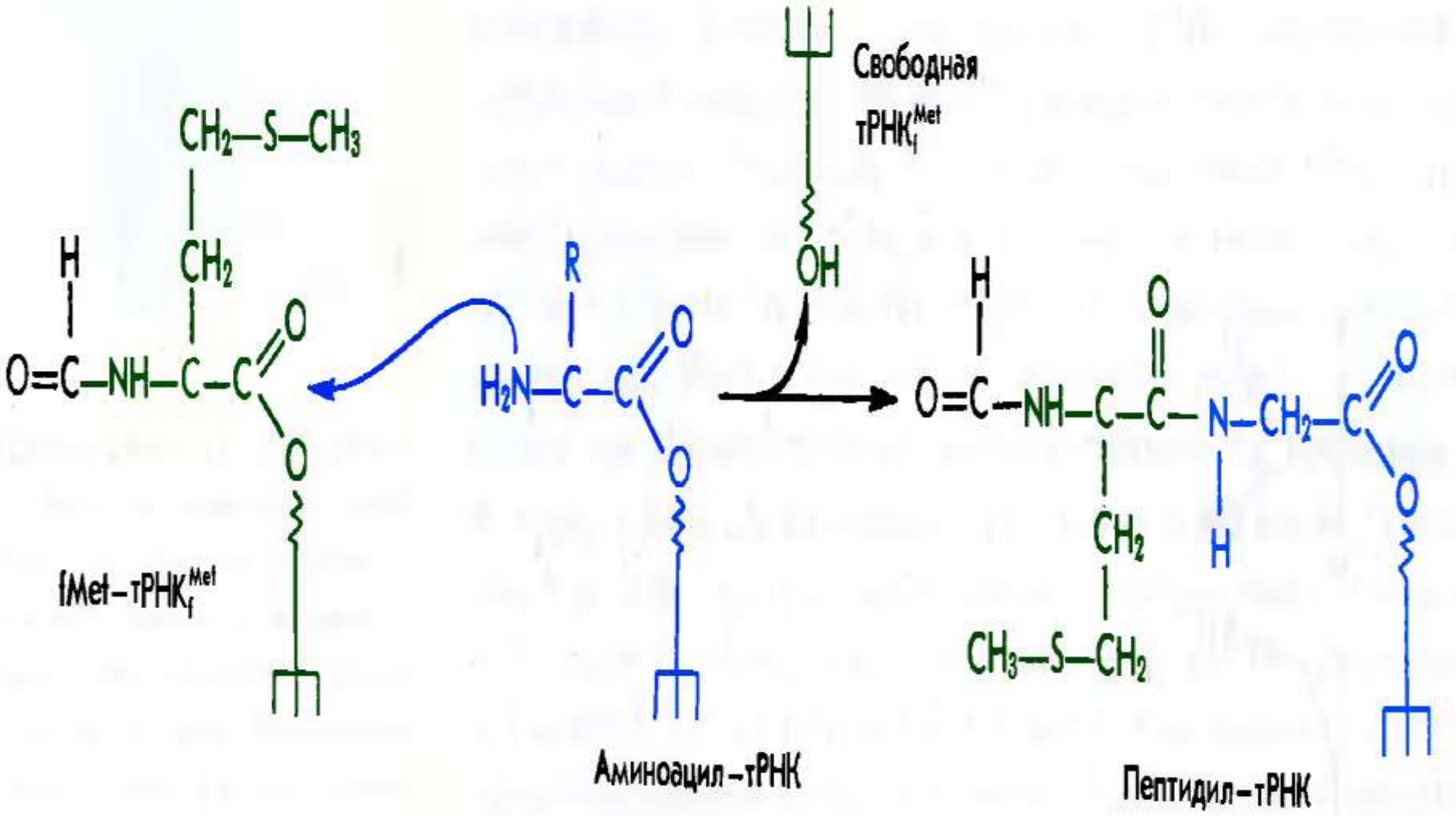
Genetik kod

	U	C	A	G	
U	UUU, UUC: Phe UUA, UUG: Leu	UCU, UCC, UCA, UCG: Ser	UAU, UAC: Tyr UAA, UAG: Stop	UGU, UGC: Cys UGA: Stop UGG: Trp	U C A G
C	CUU, CUC, CUA, CUG: Leu	CCU, CCC, CCA, CCG: Pro	CAU, CAC: His CAA, CAG: Gln	CGU, CGC, CGA, CGG: Arg	U C A G
A	AUU, AUC, AUA: Ile AUG: Met	ACU, ACC, ACA, ACG: Thr	AAU, AAC: Asn AAA, AAG: Lys	AGU, AGC: Ser AGA, AGG: Arg	U C A G
G	GUU, GUC, GUA, GUG: Val	GCU, GCC, GCA, GCG: Ala	GAU, GAC: Asp GAA, GAG: Glu	GGU, GGC, GGA, GGG: Gly	U C A G

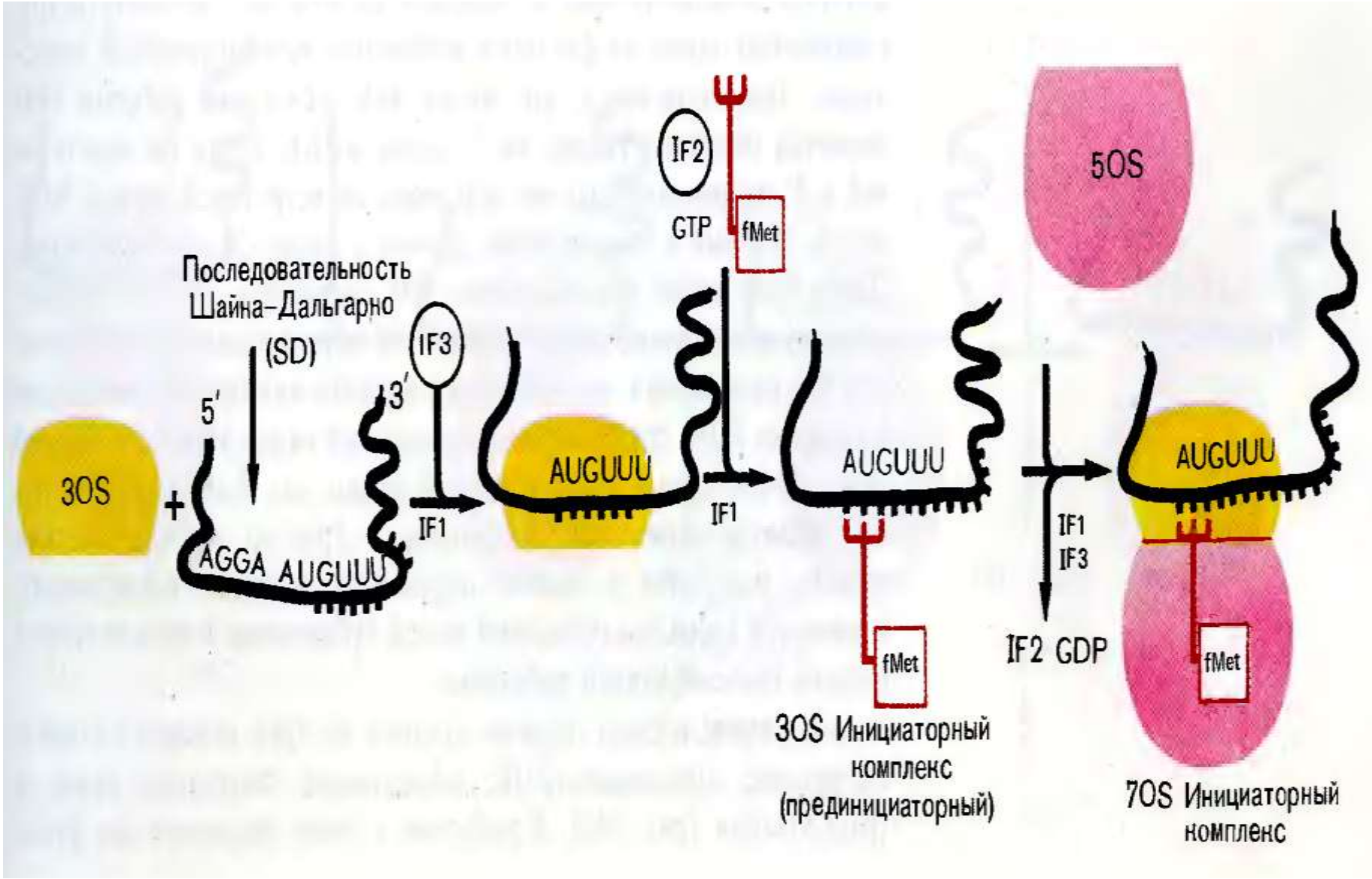
Aminokislotalarning aktivlash: tRNK va aminoatsil-tRNK-sintetazlar



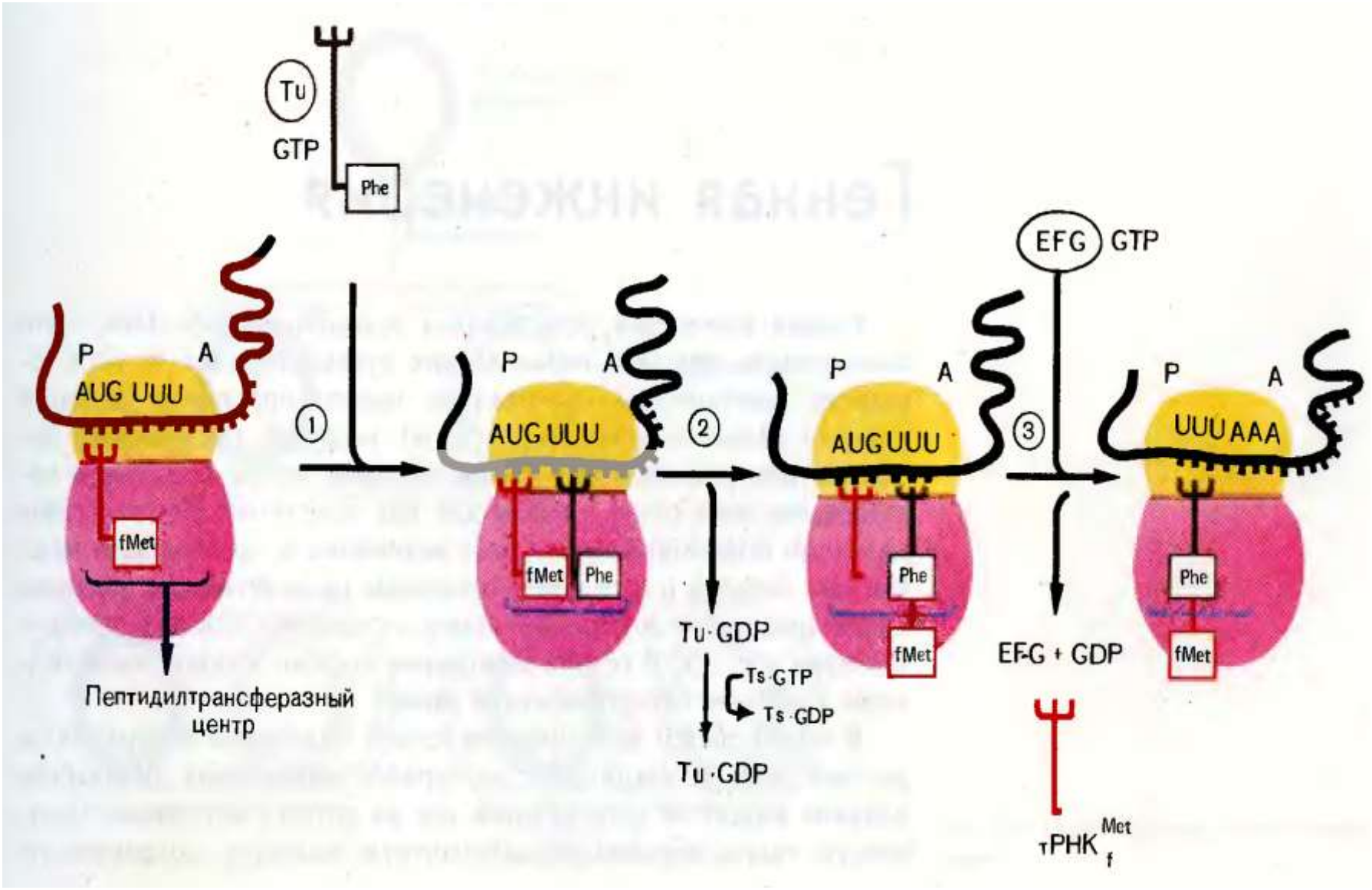
Birlamchi peptid bog‘ini sintezi



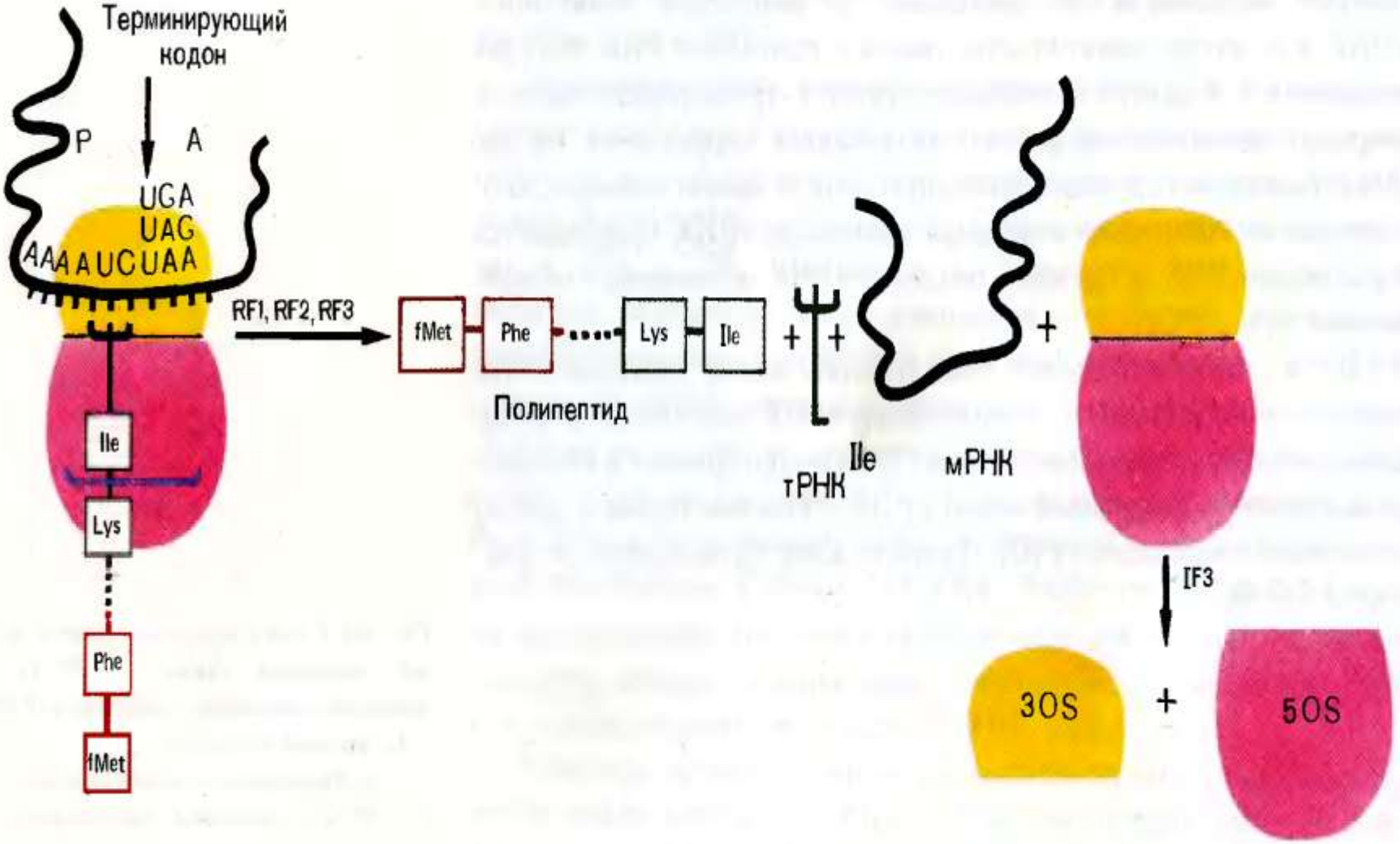
Initsiatsiya translyatsiya



Elongatsiya translyatsiya



Terminatsiya translyatsiya



E’TIBORINGIZ UCHUN RAHMAT!