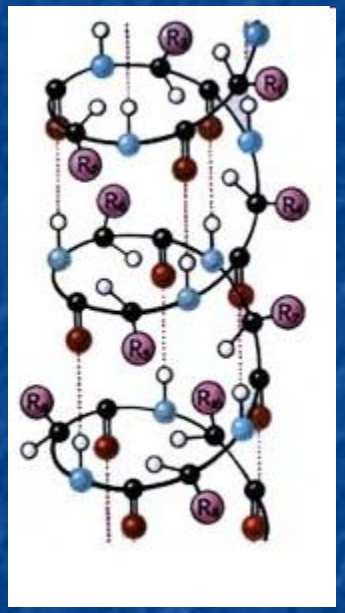
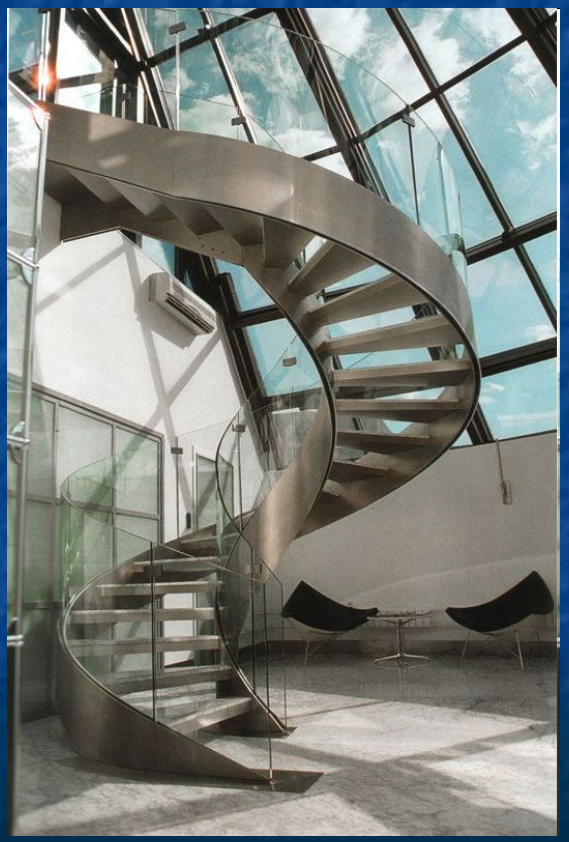
Aminokislota va oqsillar.

Tuzilishi va xossalari.

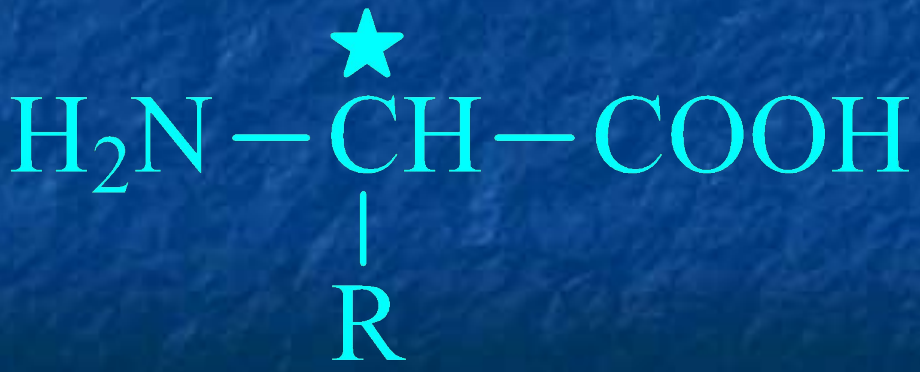


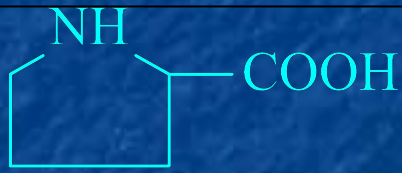


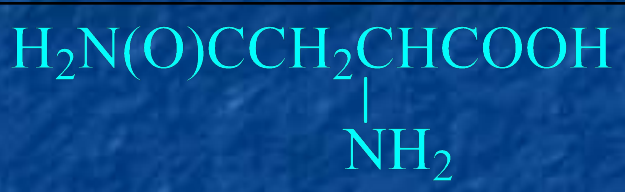
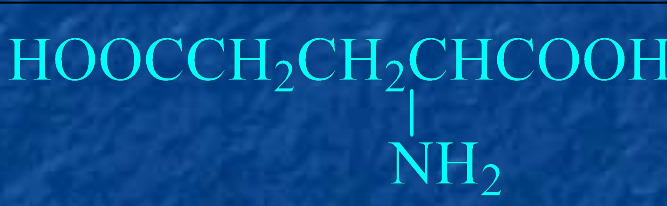
Spiral makromolekulali oqsillar, nuklein kislotalar va ko'plab sohalarda polisaxaridlar topilgan hatto me'morchilikda.

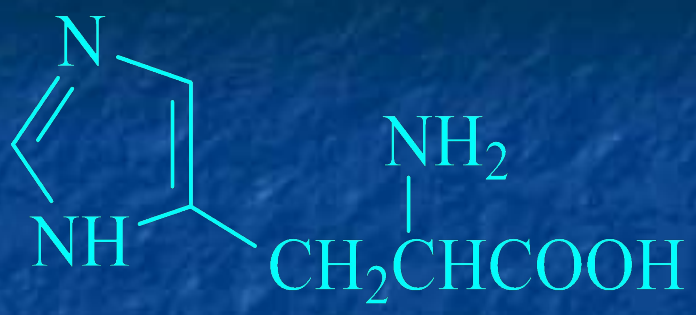
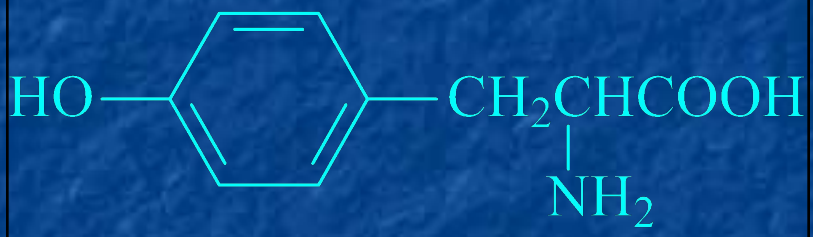
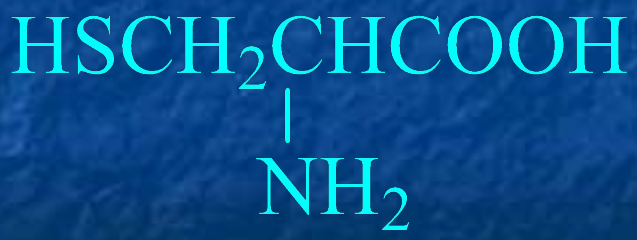
Aminokislotalar

Kislota xossasini ham olmaydigan va aminoguruh xossasini ham ham o'z ichiga olgan bu aralashma, bu amino kislotalar bo'ladi.



Nomi	Qisqartmasi	Struktura formulasi	(pH)
Глицин	gly	H_2NCH_2COOH	5.97
Аланин	ala	$CH_3CH(NH_2)COOH$	6.02
Валин	val	$(CH_3)_2CHCH(NH_2)COOH$	5.97
Лейцин	leu	$(CH_3)_2CHCH_2CH(NH_2)COOH$	5.98
Пролин	pro		6.10
Фенилаланин	phe	$C_6H_5CH_2CH(NH_2)COOH$	5.88
Триптофан	try	$C_6H_5CH_2CH(NH_2)COOH$	5.88

Nomi	Qisqartmasi	Struktura formulasi	(pH)
Аспарагин	asn		5.41
Глутаминовая кислота	glu		3.22
Лизин	lys		9.74
Аргинин	arg		10.76

Nomi	Qisqartmasi	Struktura formulasi	(pH)
Гистидин	his		7.58
Тирозин	tyr		5.65
Цистеин	cySH		5.02

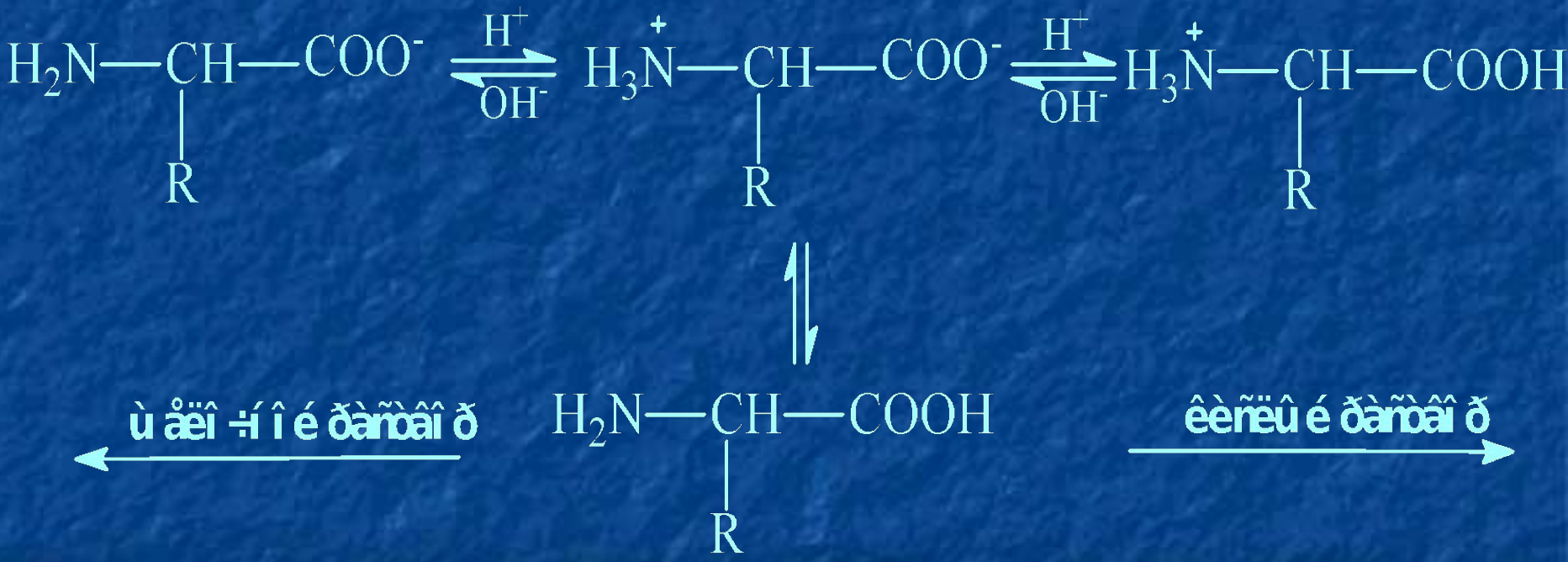
Almashinmaydigan aminokislotalar

Oqsillar tarkibida uchraydigan aminokislotalar esa ularning fermenta-tiv o‘zgarishi natijasida hosil bo‘ladi. Ayrim aminokislotalar hayvon va odam organizmidan sintezlanmaydi. Bu almashinmaydigan aminokislotalardir. Odam organizmi uchun 8 (triptofan, fenilalanin, metio-nin, lizin, valin, treonin, izoleysin va leysin) almashinmaydigan aminokislotalar bor.O‘simliklar o‘zi uchun zarur bo‘lgan barcha azotli birikmalarni sintezlash qobiliyatiga ega. aminokislotalar sintezi jarayonida ammiakli azot organik birikmalarga aylanadi.

Almashinmaydigan aminokislotalar

O‘simliklarda hosil bo‘lgan aminokislotalar uzluksiz almashinib turadi. Ular asosan, oqsillar sintezi uchun sarfla-nadi, shuningdek, dekarboksillanishi, azot asoslari va boshqa birikmalar sintezi uchun ishlatilishi, aminogruppani aj-ratib yuborishi, to‘liq oksidlanishi va organizm uchun energiya manbai bo‘lib xizmat qilishi mumkin.

Kislotali xossalarini namoyon qiladi



Asosiy xossalari.

Ionlashmagan aminokislota holati

Ion holatdagi Svettir ioni(bipolyar ion holat)

Aminokislotalarning klassifikatsiyasi

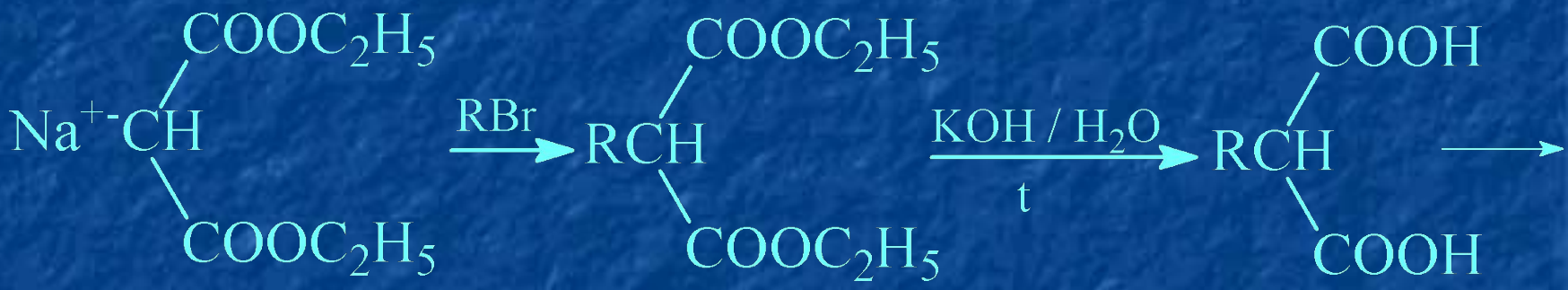
Kimyoviy tuzulishi bo‘yicha aminokislotalar aminkarbon kislotalar bo‘lib, ular tarkibida karboksil — COOH va amino — NH2 guruhlari mavjud. Amino gruppa hamda proteinogen aminokislotalarda a-uglerod atomida joylashganligidan, a-aminokislotalar qatorini tashkil qiladilar. Peptidlar Kimyoviy tuzulishi bo‘yicha aminokislotalar aminkarbon kislotalar bo‘lib, ular tarkibida karboksil — COOH va amino — NH2 guruhlari mavjud. Amino gruppa hamda proteinogen aminokislotalarda a-uglerod atomida joylashganligidan, a-aminokislotalar qatorini tashkil qiladilar. Peptidlar va,

Aminokilotalarning olinish usullari

aminlangan α- galogen birikmalardan

Aminokislotalarning olinish usullari

Malon kislotaning bromlanishi natijasida.



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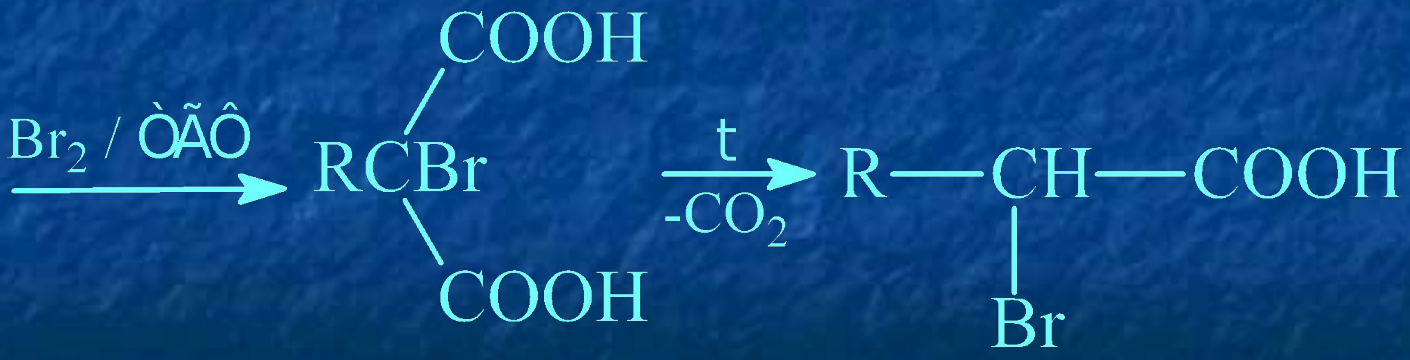
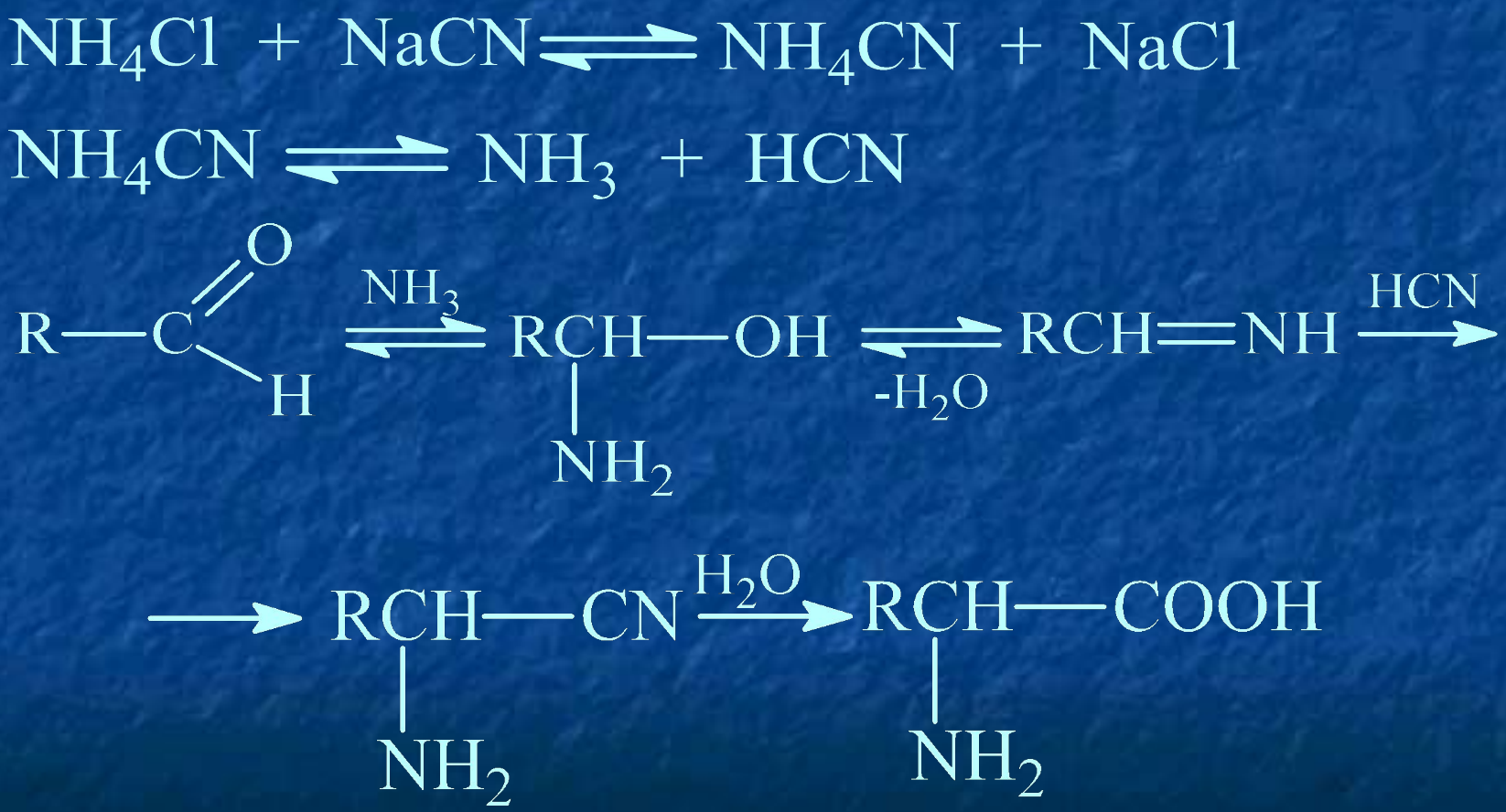


Aminokislotalarning olinish usullari

Shtekker – Zelinskiy sintezi.



Aminokislotalarning olinish usullari

- N tutgan Aminomalon efirlarning alkillanishi
- α - galogen tutgan efirlarning aminlanishikaliy ftalamid yordamida)

Aminokislotalarning olinish usullari

Aminokislotalarning biologik olinish xossalari.

Корм с добавкой рацемической смеси α-аминокислот

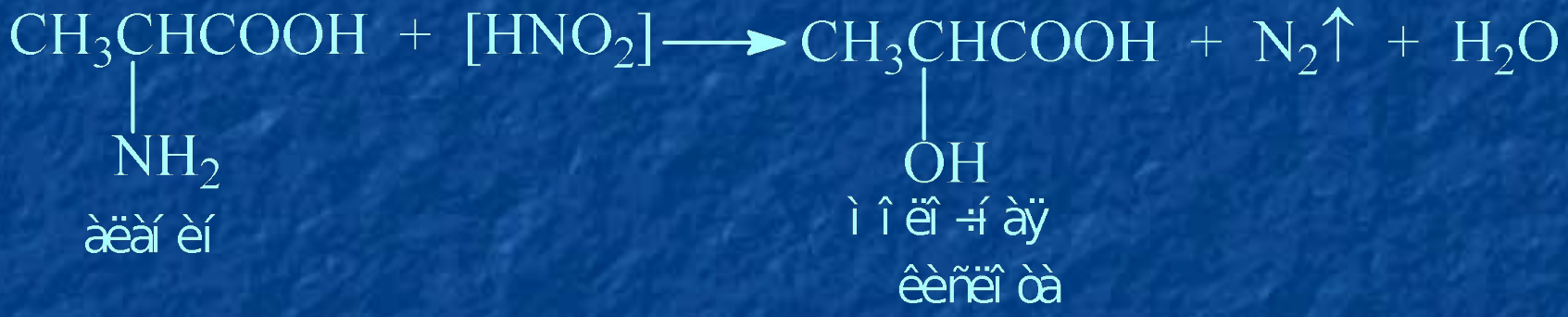
Отходы с оптически активным изомером α-аминокислоты

Очистка

Оптически чистый изомер α-аминокислоты

Aminokislotalarning kimyoviy xossasi

Aminoguruh reaksiyasi



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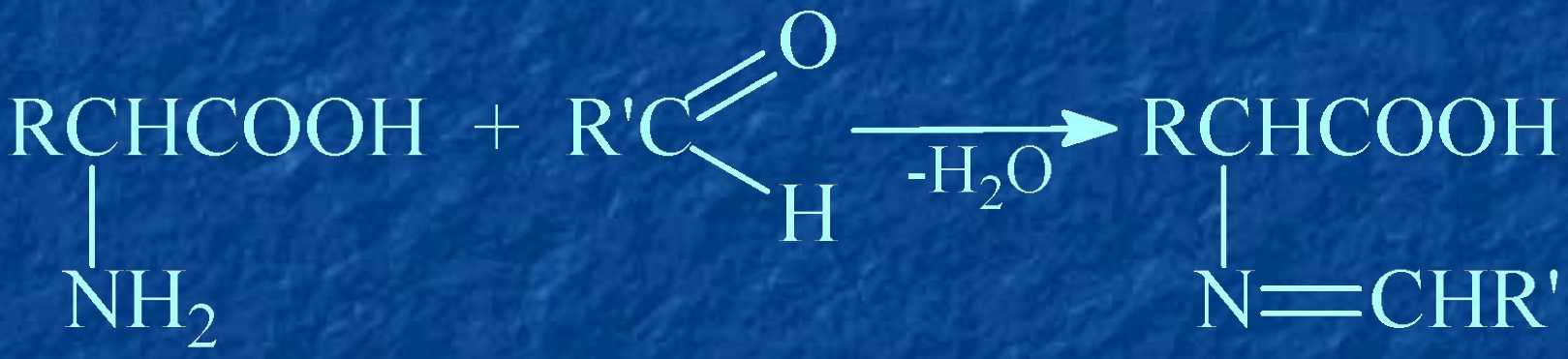
Van – Slayk metodi

Aminokislotalarning kimyoviy xossasi

Aminoguruh reaksiyasi



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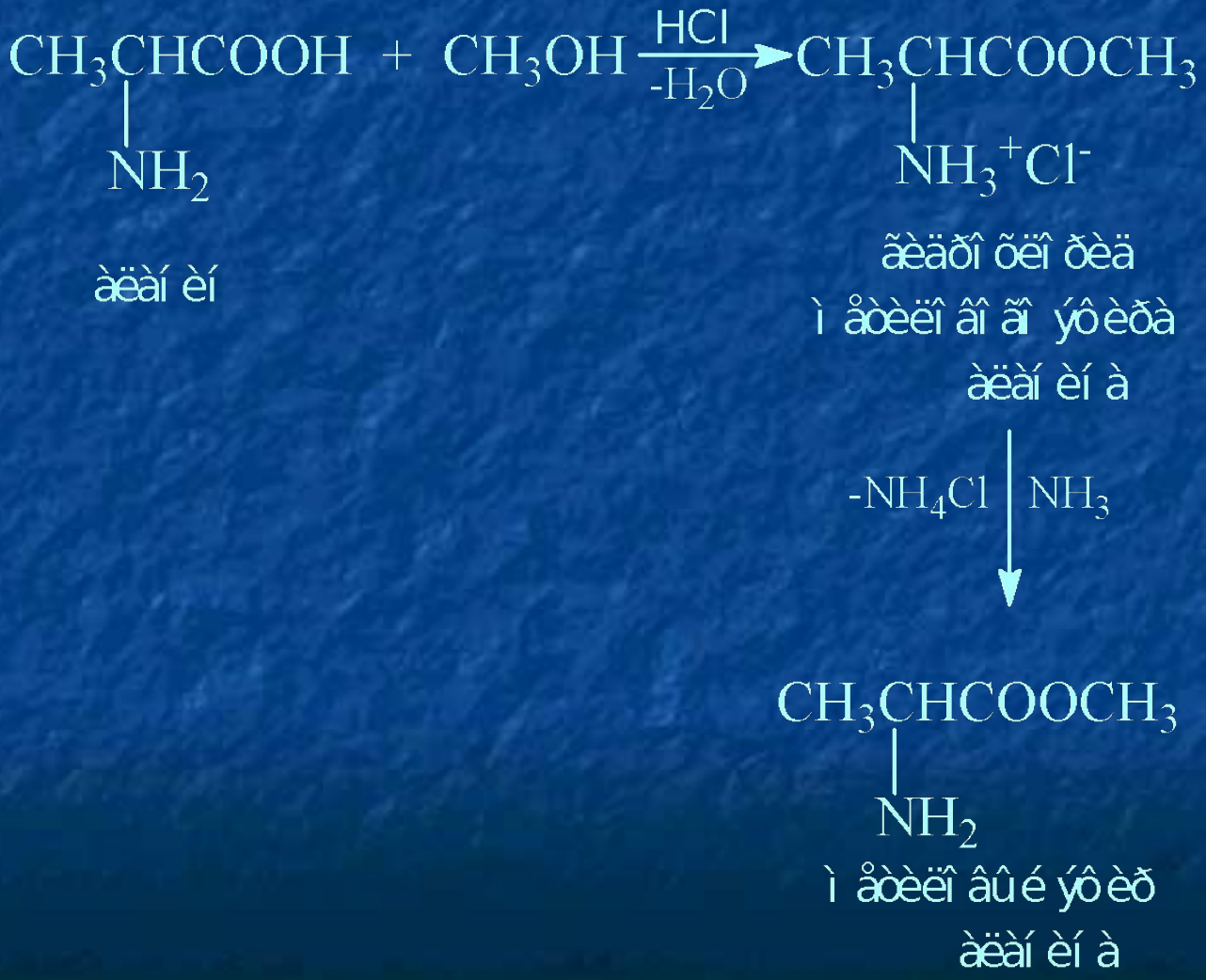
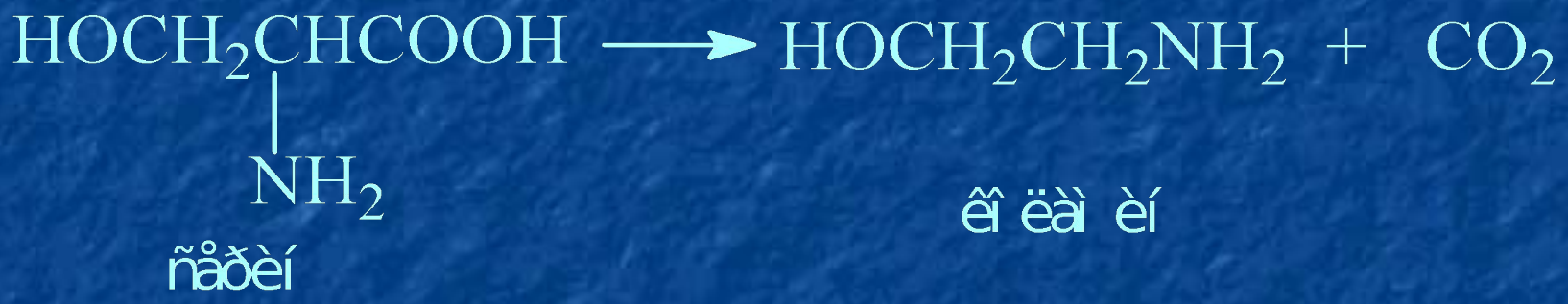
Aminokislotalarning kimyoviy xossasi

Karboksil guruh reaksiyalari



Aminokislotalarning kimyoviy xossasi

Karboksil guruh reaksiyasi



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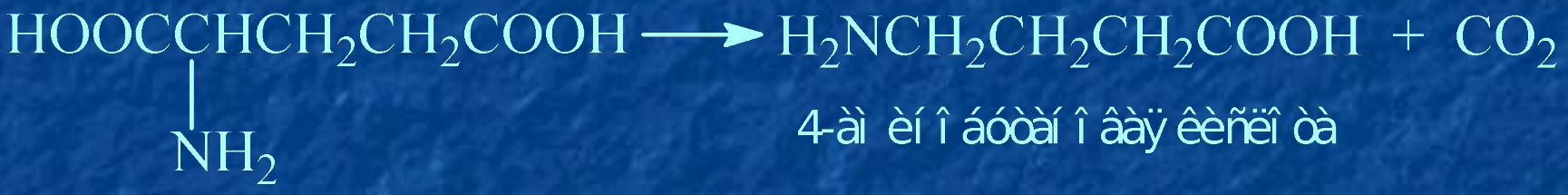

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Aminokislotalarning kimyoviy xossasi

Sifat reaksiyasi

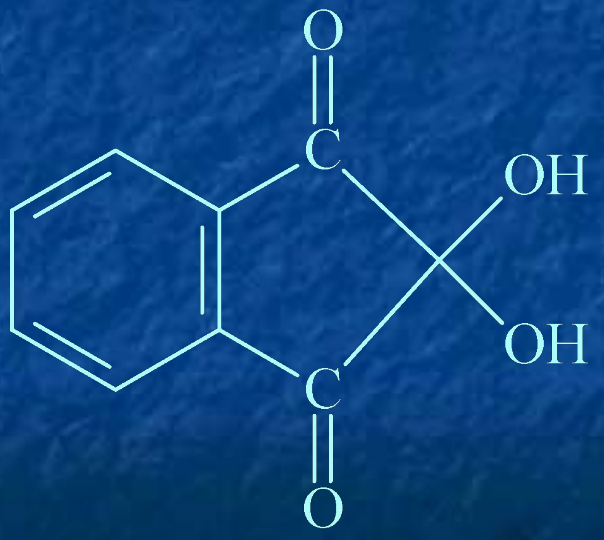
Ksantoprotein reaksiyasi

Aminokislotalarning kimyoviy xossasi

Sifat raksiyasi

- Biuret reaksiyasi

  (Mis (II) gidroksidi bilanCu(OH)$_2$)
- Ningidrin reaksiyasi.



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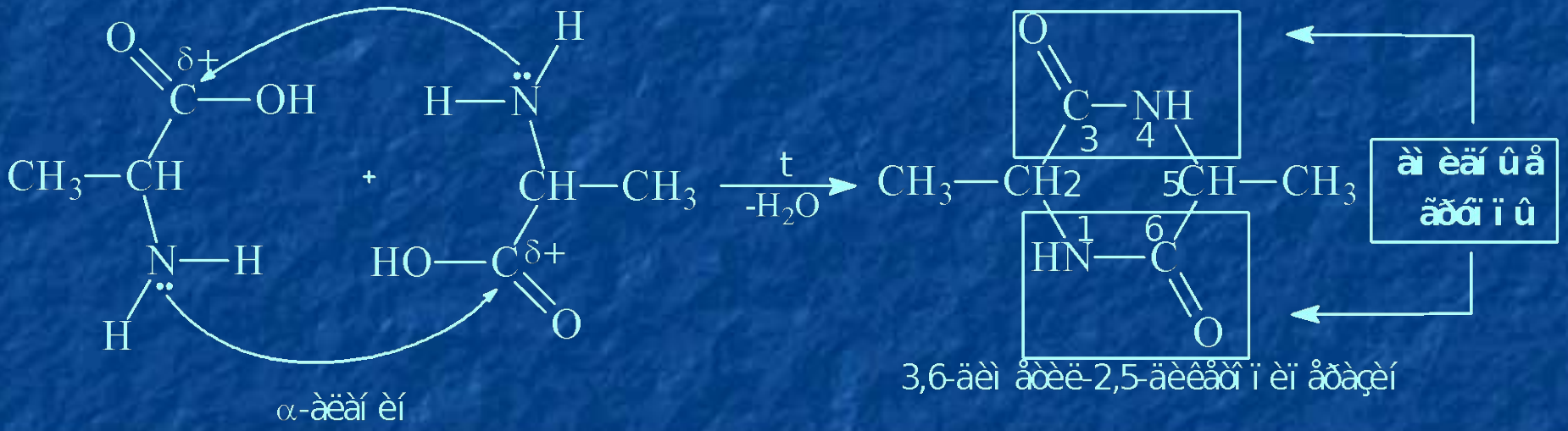
Aminokislotalarning kimyoviy xossasi

α,β,γ aminokislotalarning spetsifik reaksiyalari

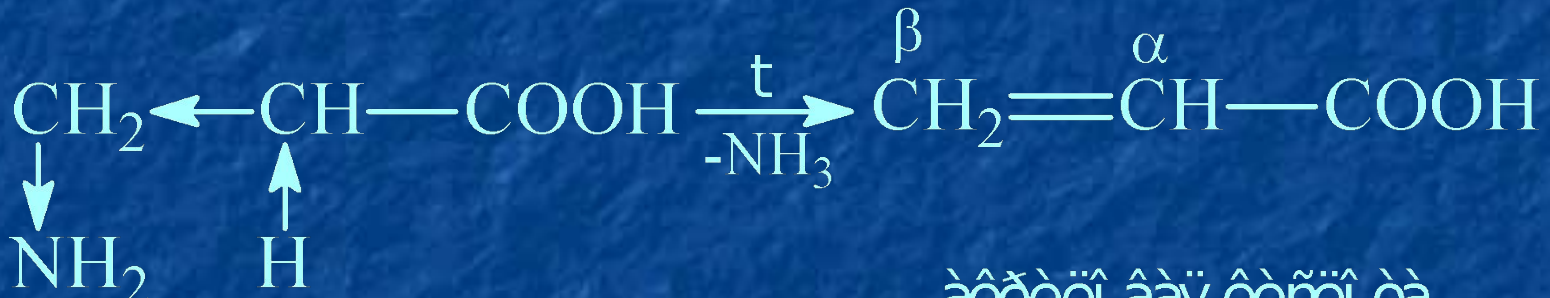
α- aminokislota reaksiyalari



Aminokislotalarning kimyoviy xossasi

α,β,γ aminokislotalarning spetsifik reaksiyalari

β- aminokislota reaksiyalari



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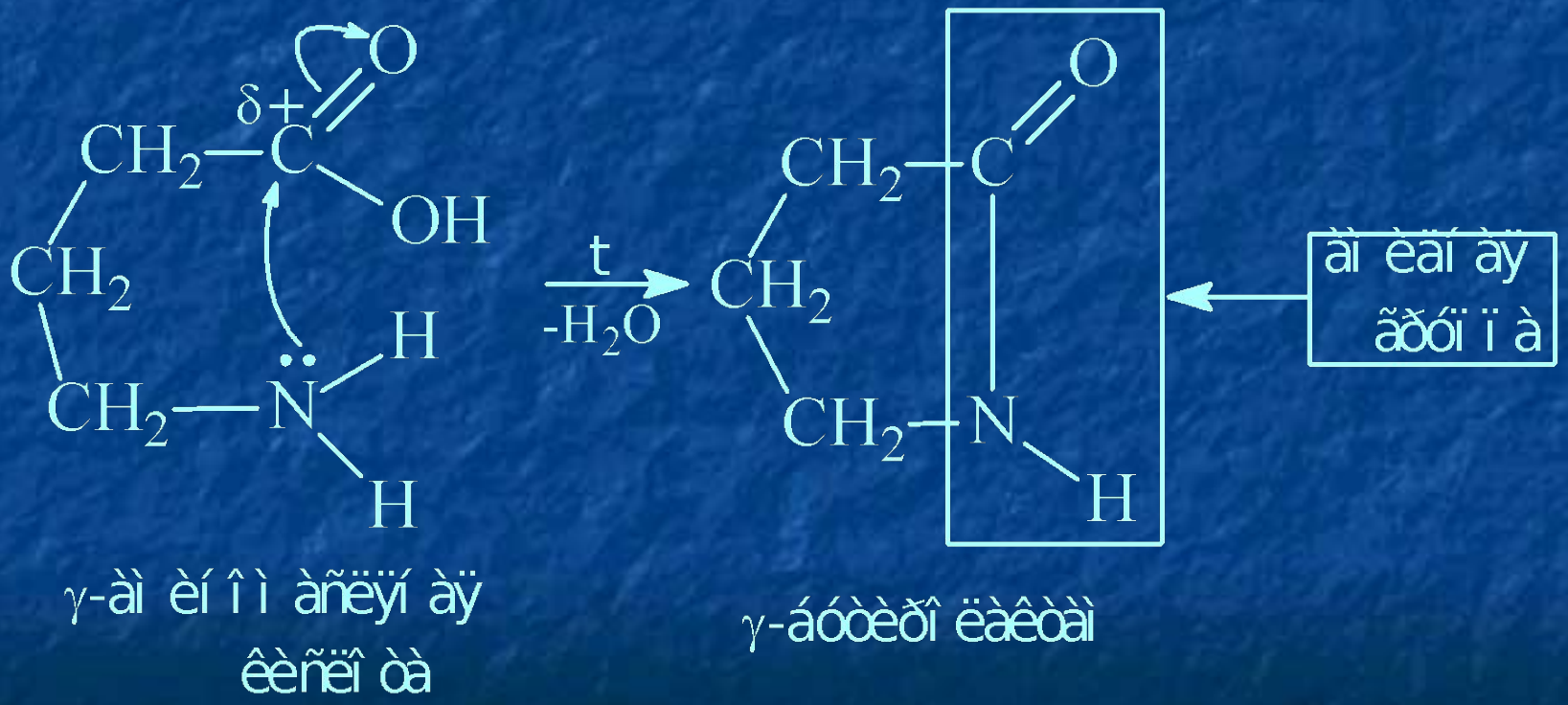
Aminokislotalarning kimyoviy xossasi

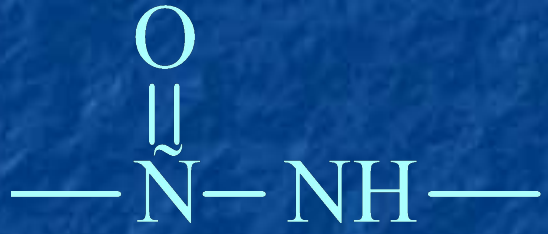
α,β,γ aminokislotalarning spetsifik reaksiyalari

γ- aminokislota reaksiyalari

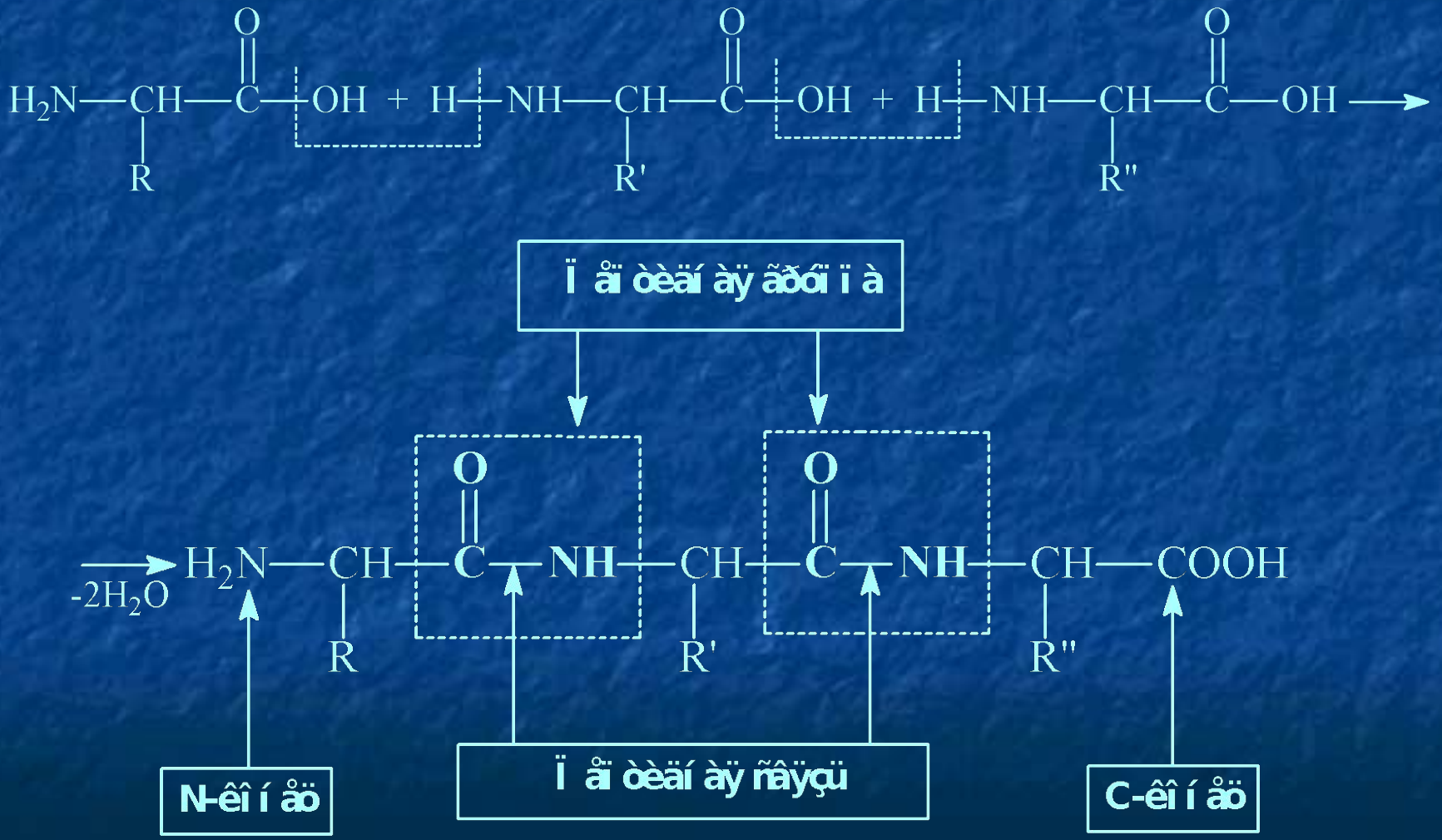


Peptid va oqsillar

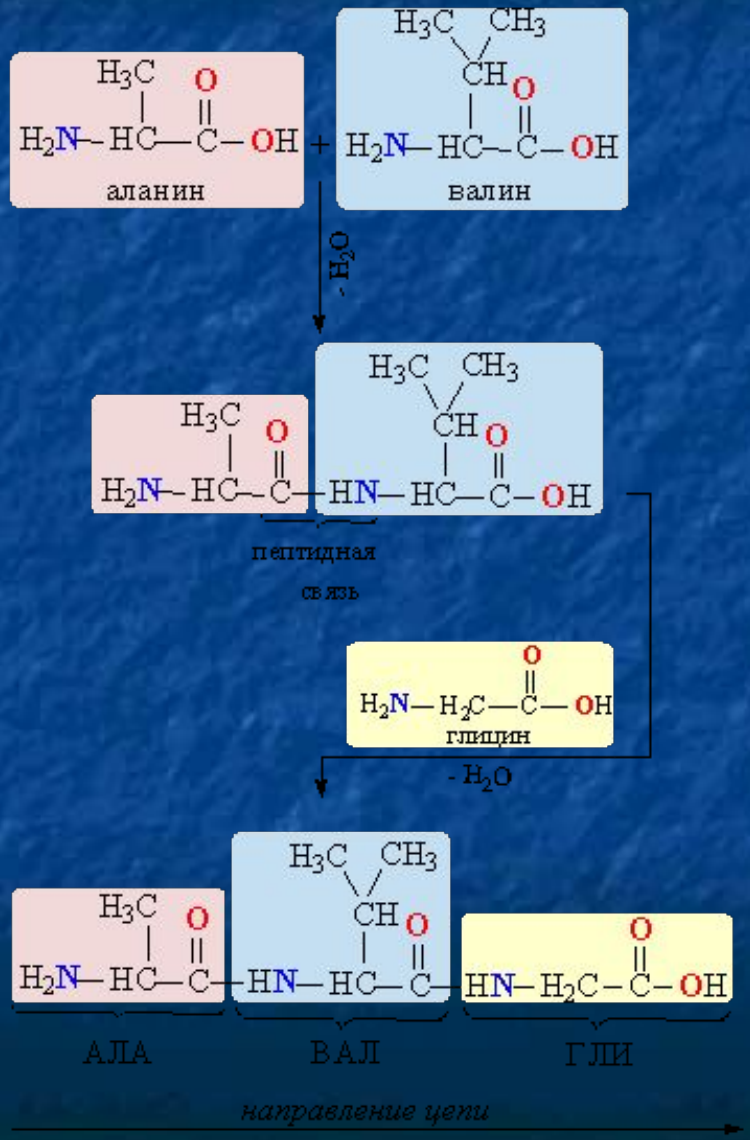
Peptidlar — bir nechta α aminokislotalarning qo‘shilishidan



Peptidlar va oqsillar.

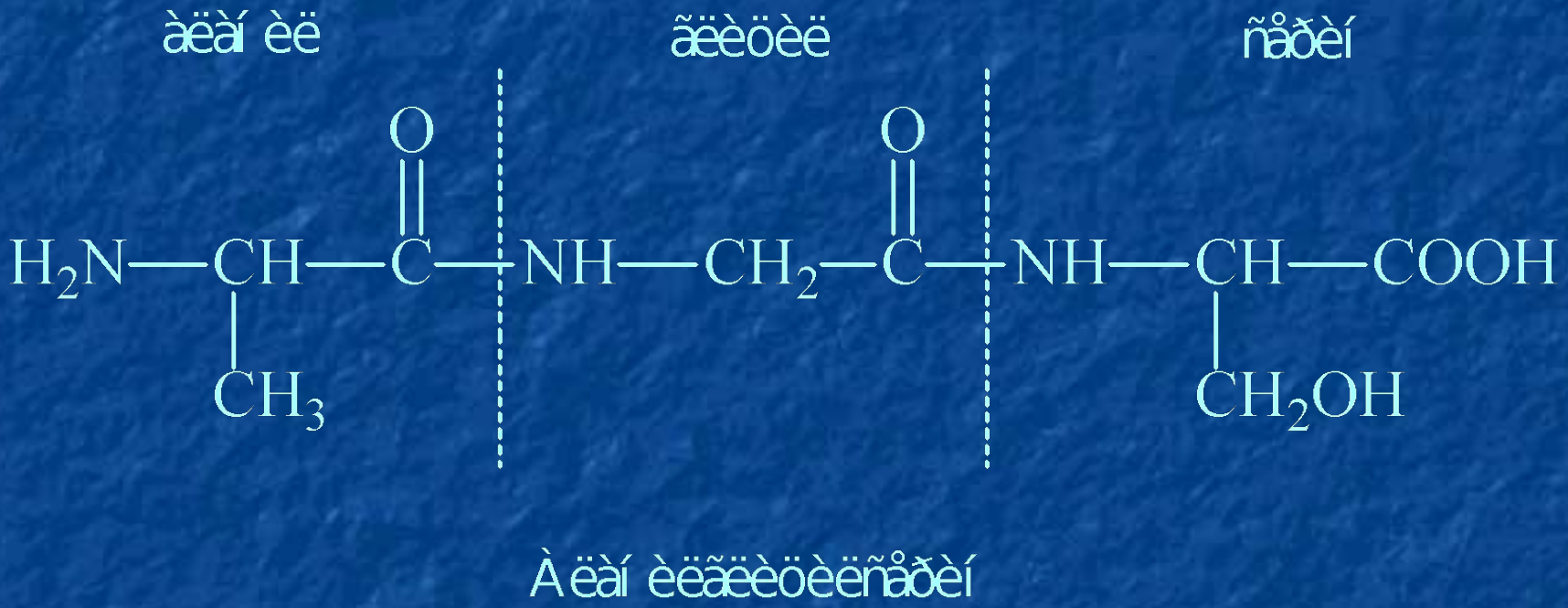


Peptidlar va oqsillar

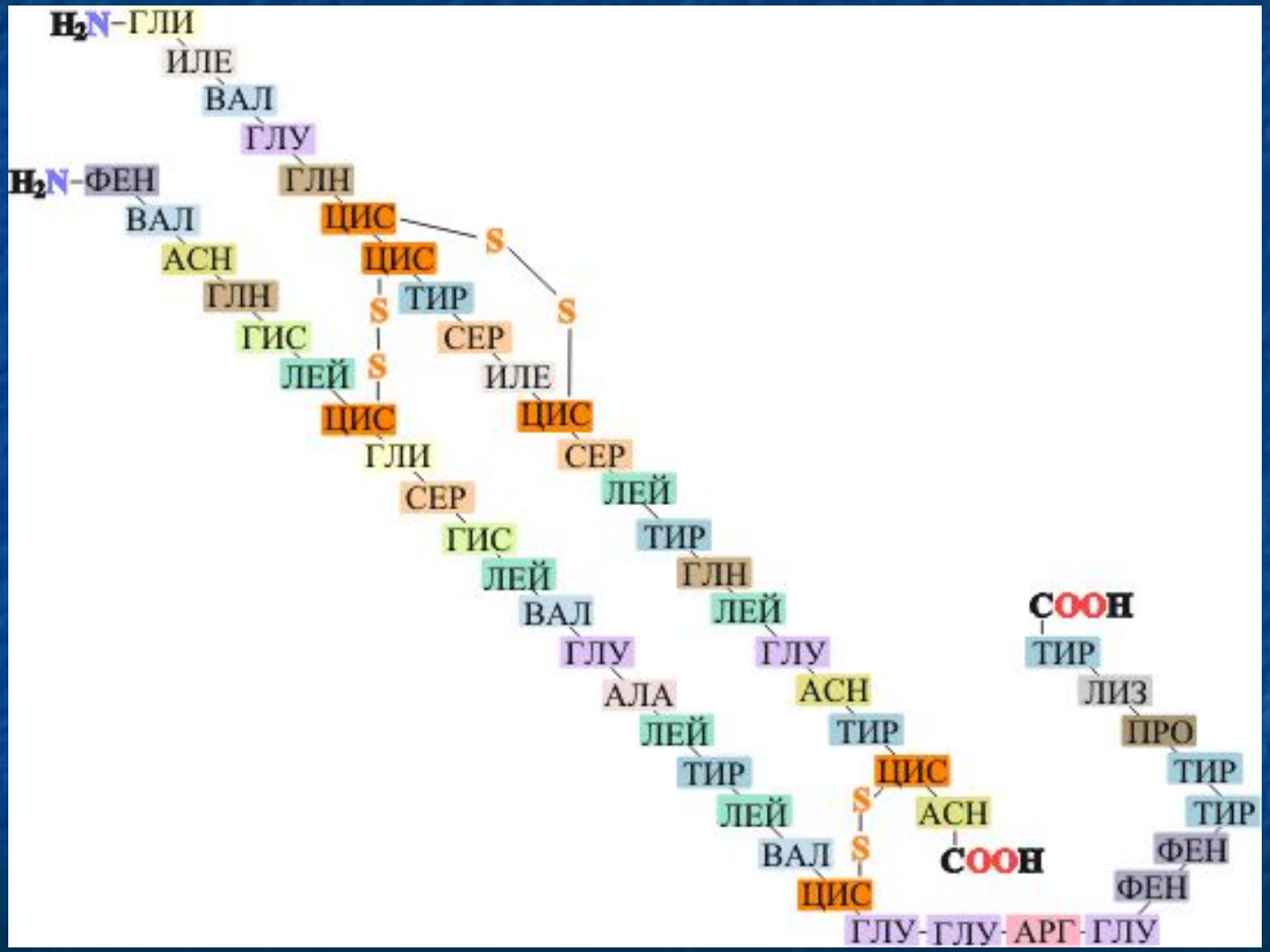


Aminokislotalarning ketma – ket aloqasi

Peptidlar va oqsillar



Peptidlar va oqsillar



Insulin oqsilining birlamchi strukturasi

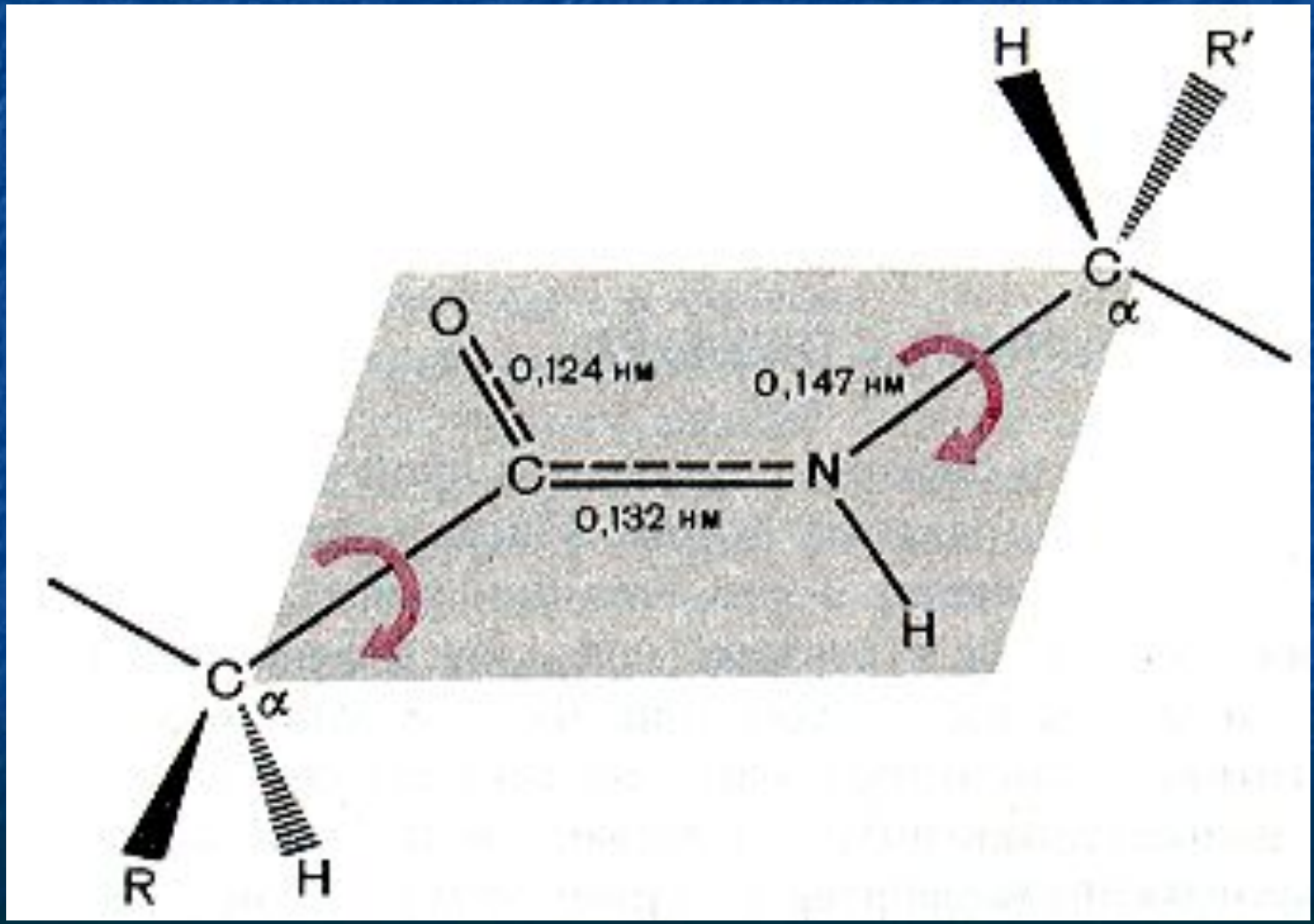
Peptid va oqsilar

Oqsillar tuzilishi

Первичная структура пептидов и белков — это последовательность аминокислотных остатков в полипептидной цепи.

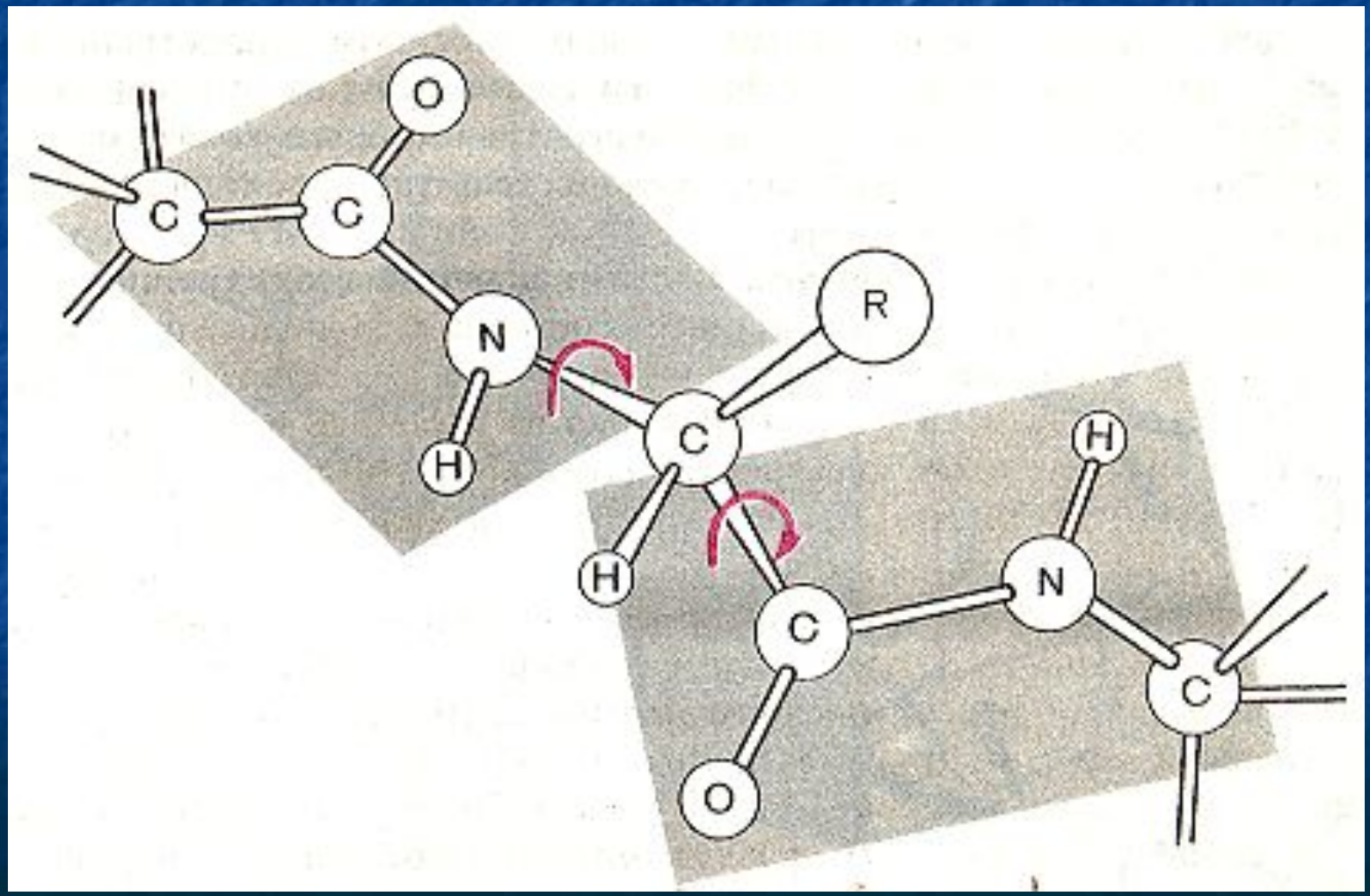
Oqsillar va peptidlar

Oqsillarning ikkilamchi strukturasi



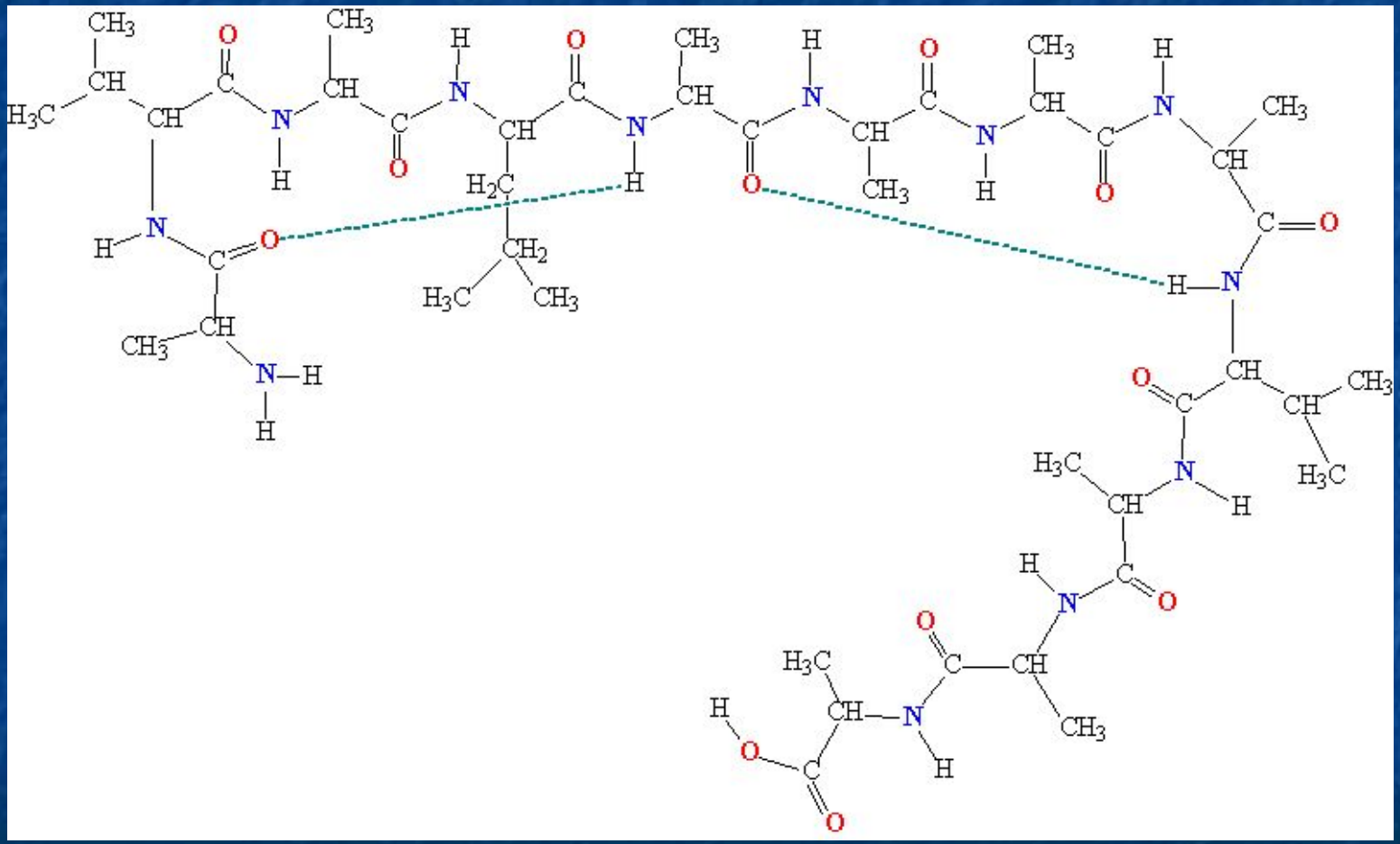
Oqsillar va peptidlar

Oqsillarning ikkilamchi strukturasi



Oqsillar va peptidlar

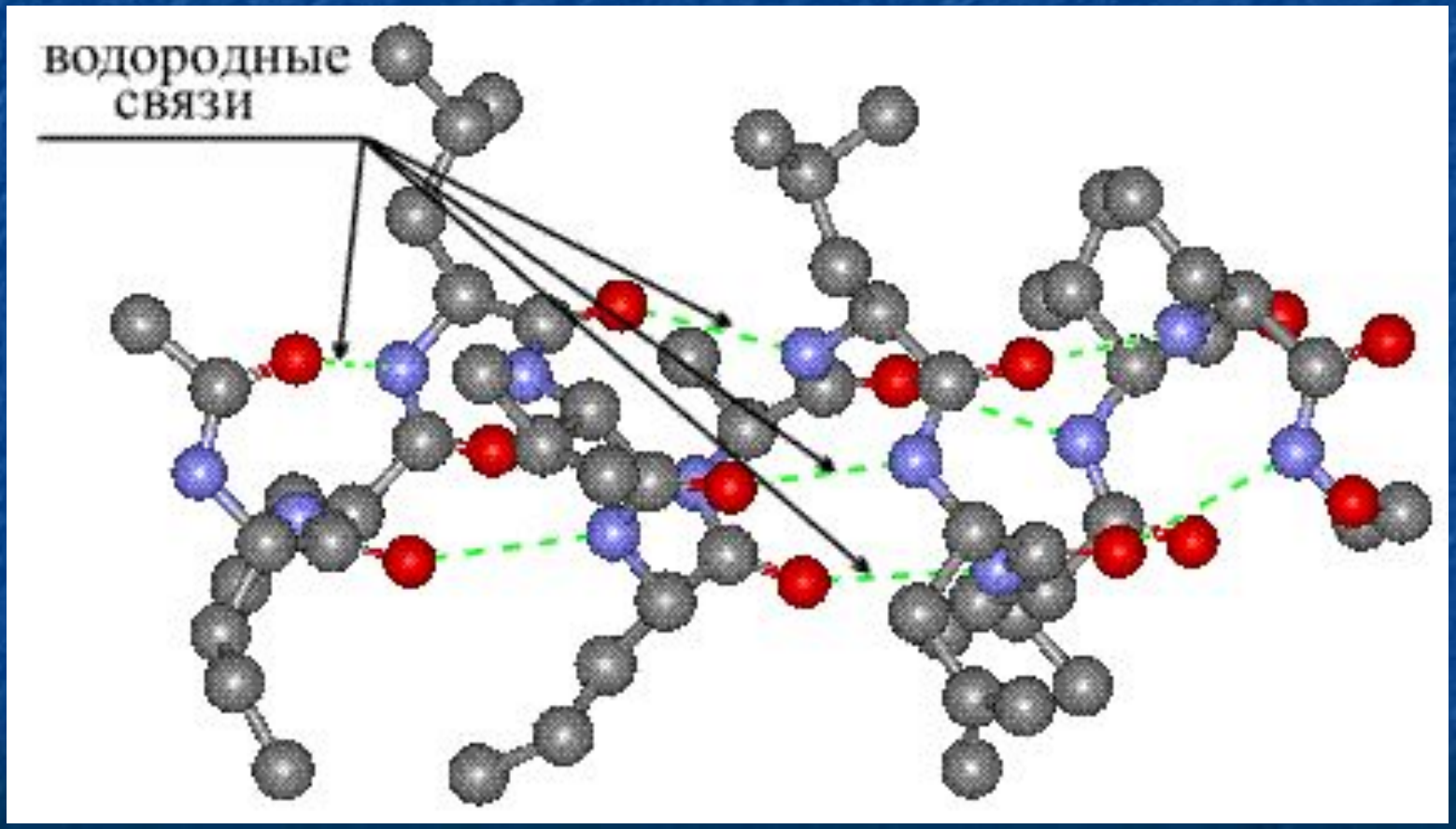
Oqsillarning ikkilamchi strukturasi



Ichki vodorod bog'lanish

Oqsillar va peptidlar

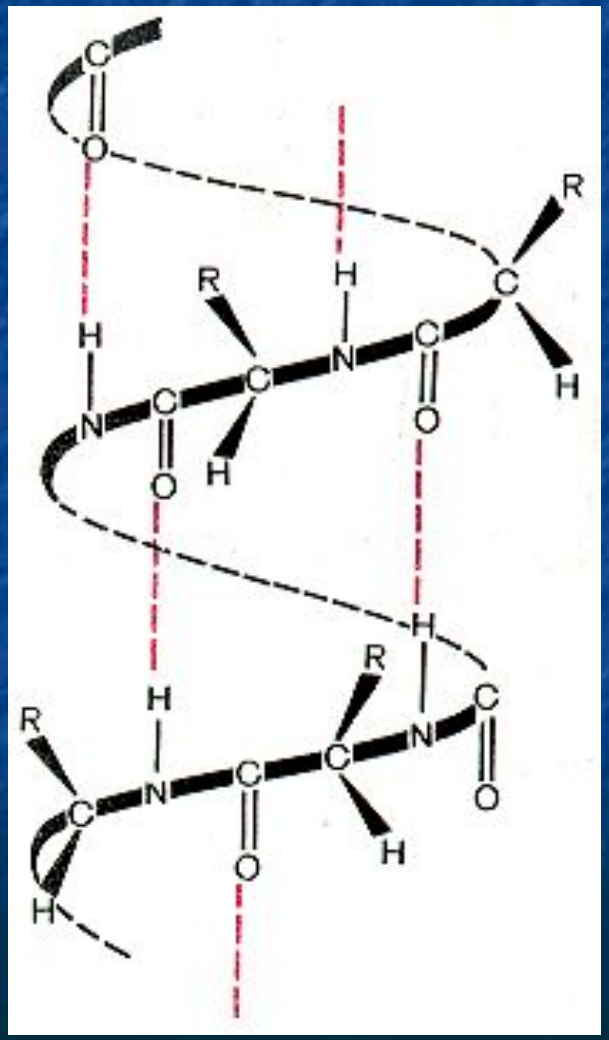
Oqsillarning ikkilamchi strukturasi



α-aminokislotalarning struktura modeli.(yashil chiziqlar vodorod bog’lanishni ifoda etadi)

Oqsillar va peptidlar

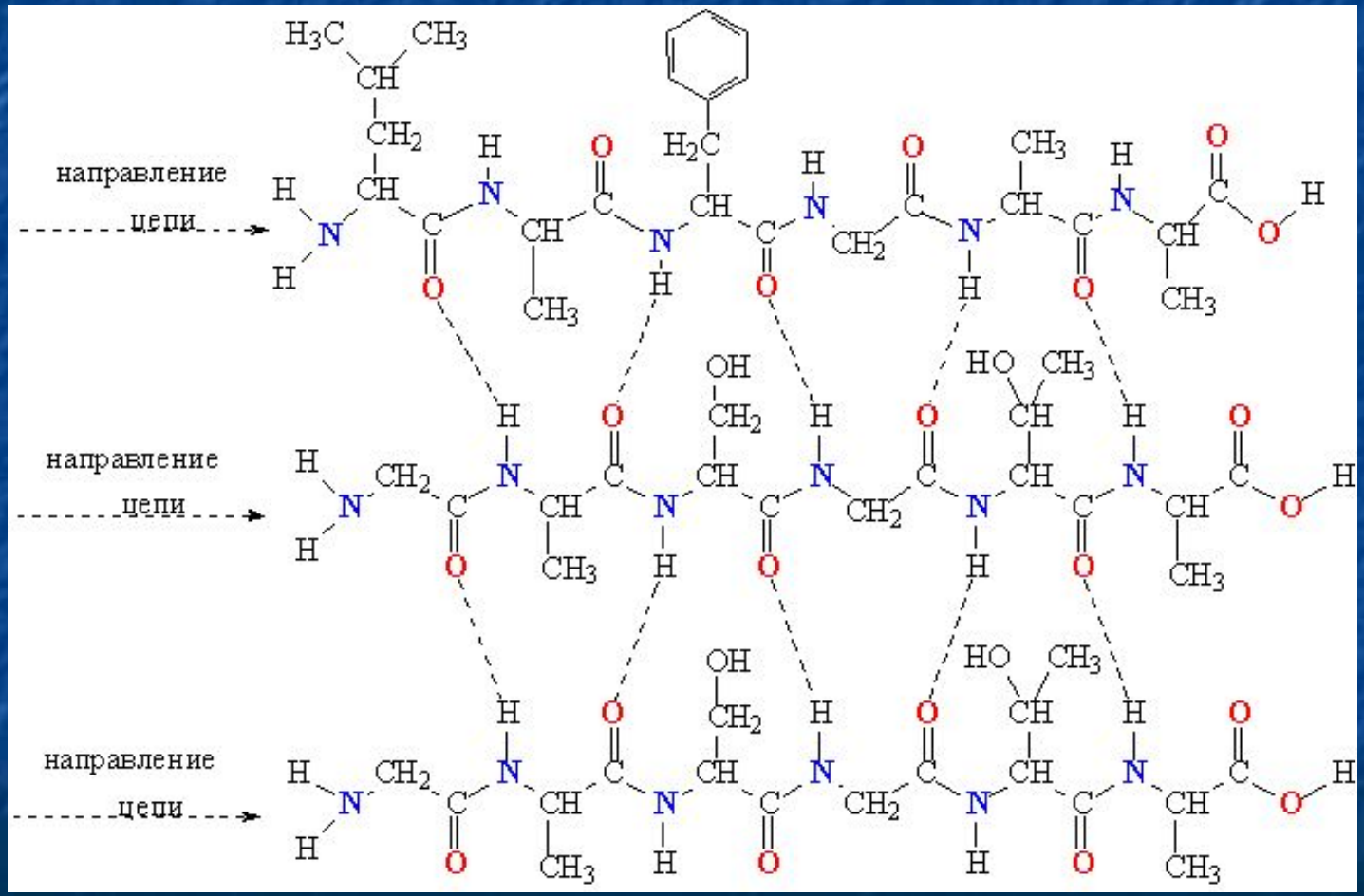
Oqsillarning ikkilamchi strukturasi



oqsilning a- spiral molekulasi

Oqsillar va peptidlar

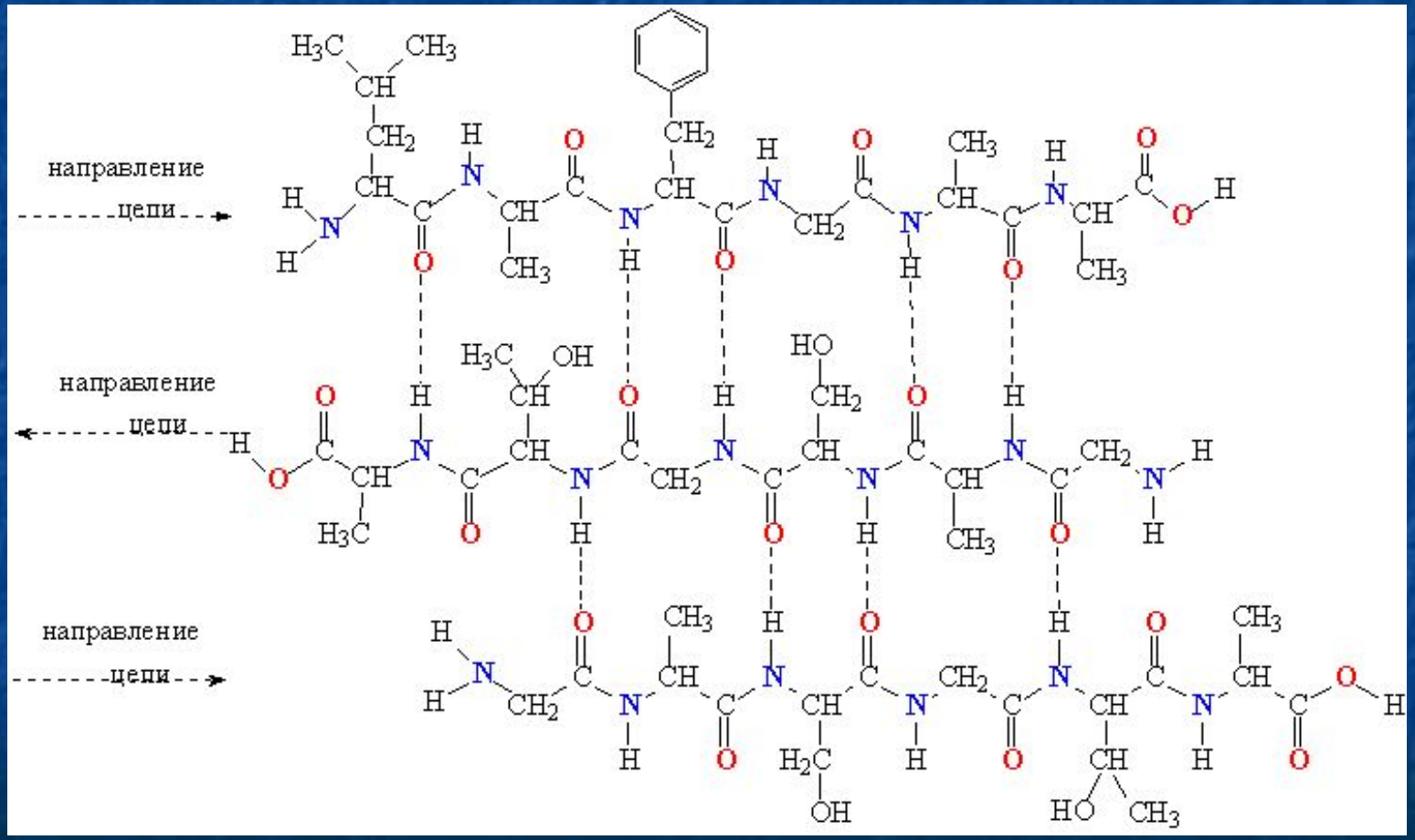
Oqsillarning ikkilamchi strukturasi



Uch xil polipeptid molekulasining parallel β- holati

Oqsillar va peptidlar

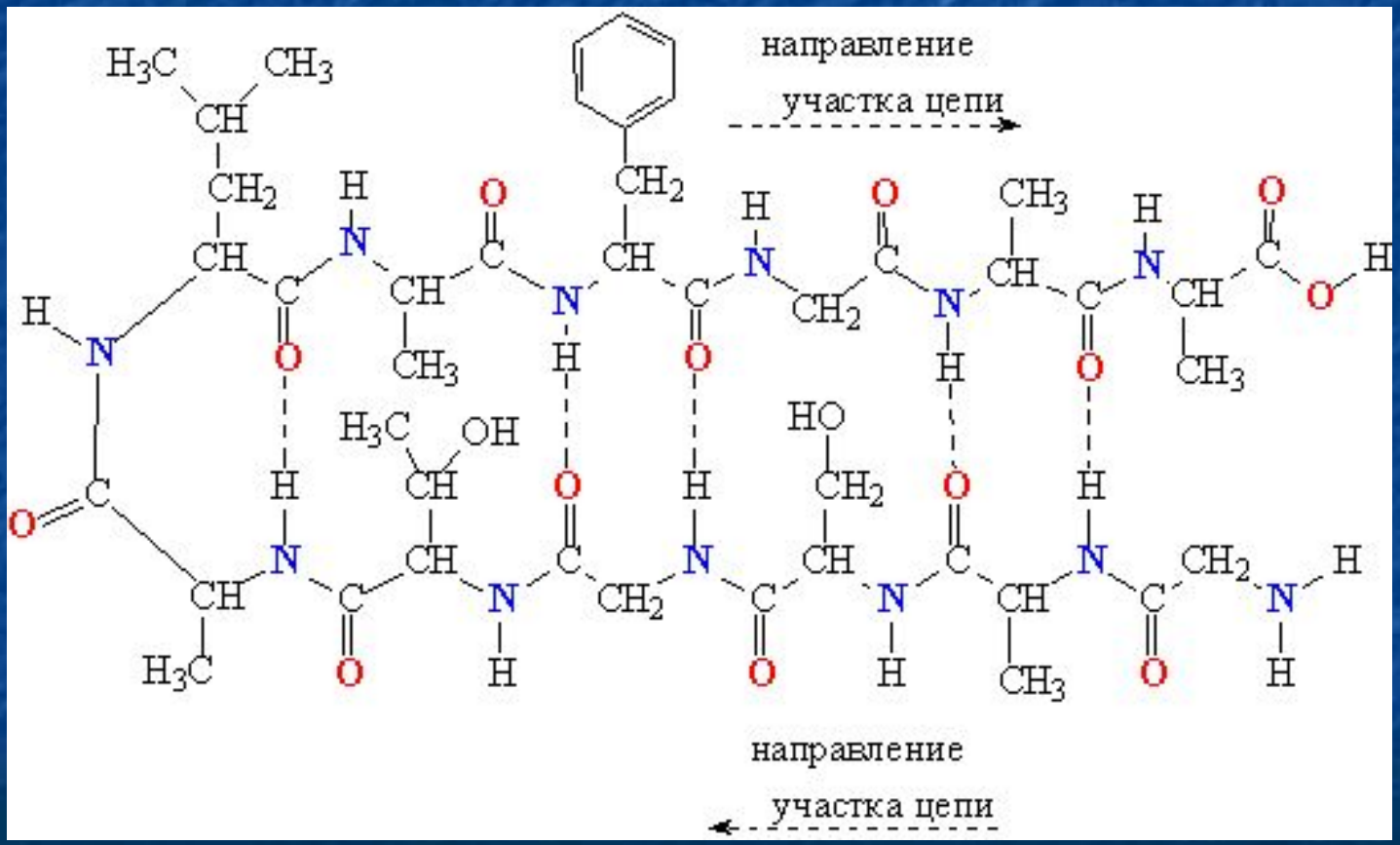
Oqsillarning ikkilamchi strukturasi



Uch xil oqsil molekulasining antiparallel β - holati

Oqsillar va peptidlar

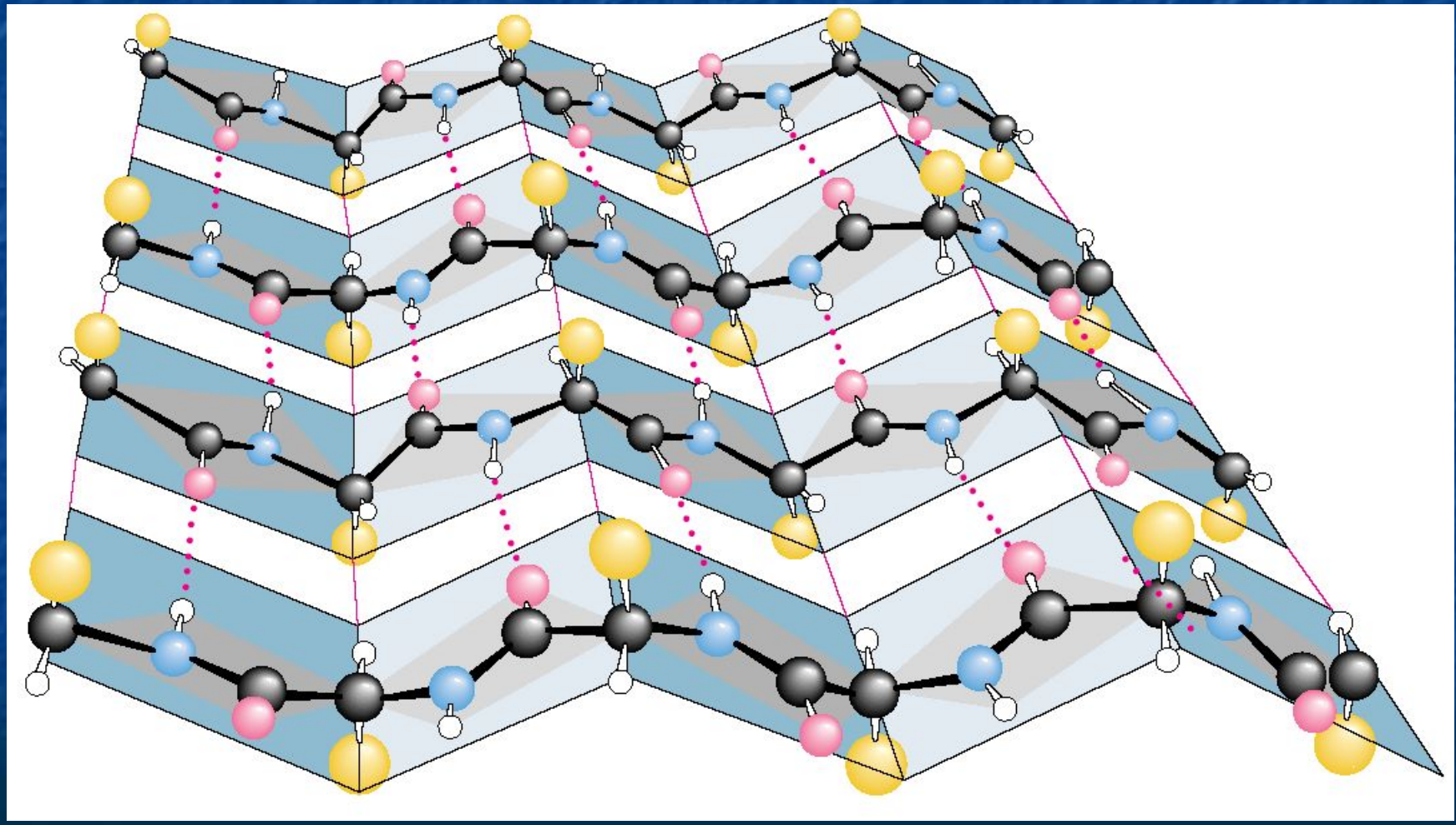
Oqsillarning ikkilamchi strukturasi



Bitta polipeptid halqaning oqsil molekulasi.

Oqsillar va peptidlar

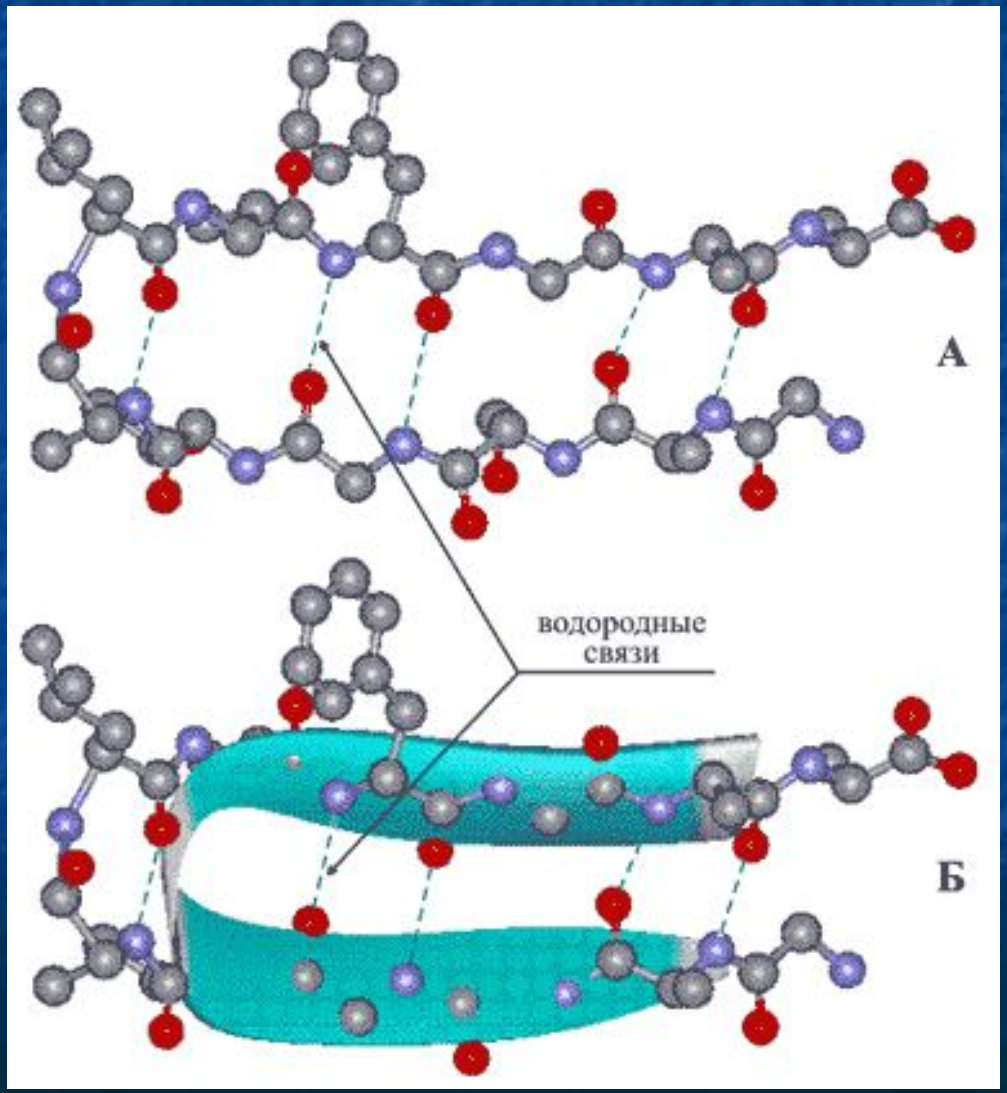
Oqsillarning ikkilamchi strukturasi



Oqsilning β -holati

Oqsillar va peptidlar

Oqsillarning ikkilamchi strukturasi



A - vodorod bog'lari bilan bog'langan polipeptid zanjiri qismi, (yashil chiziqlar nuqta).
B - polimer zanjir atomlar orqali cho'zilgan bir tekis kamar shaklida sxematik b-qurilish (vodorod atomlari ko'rsatilmagan).

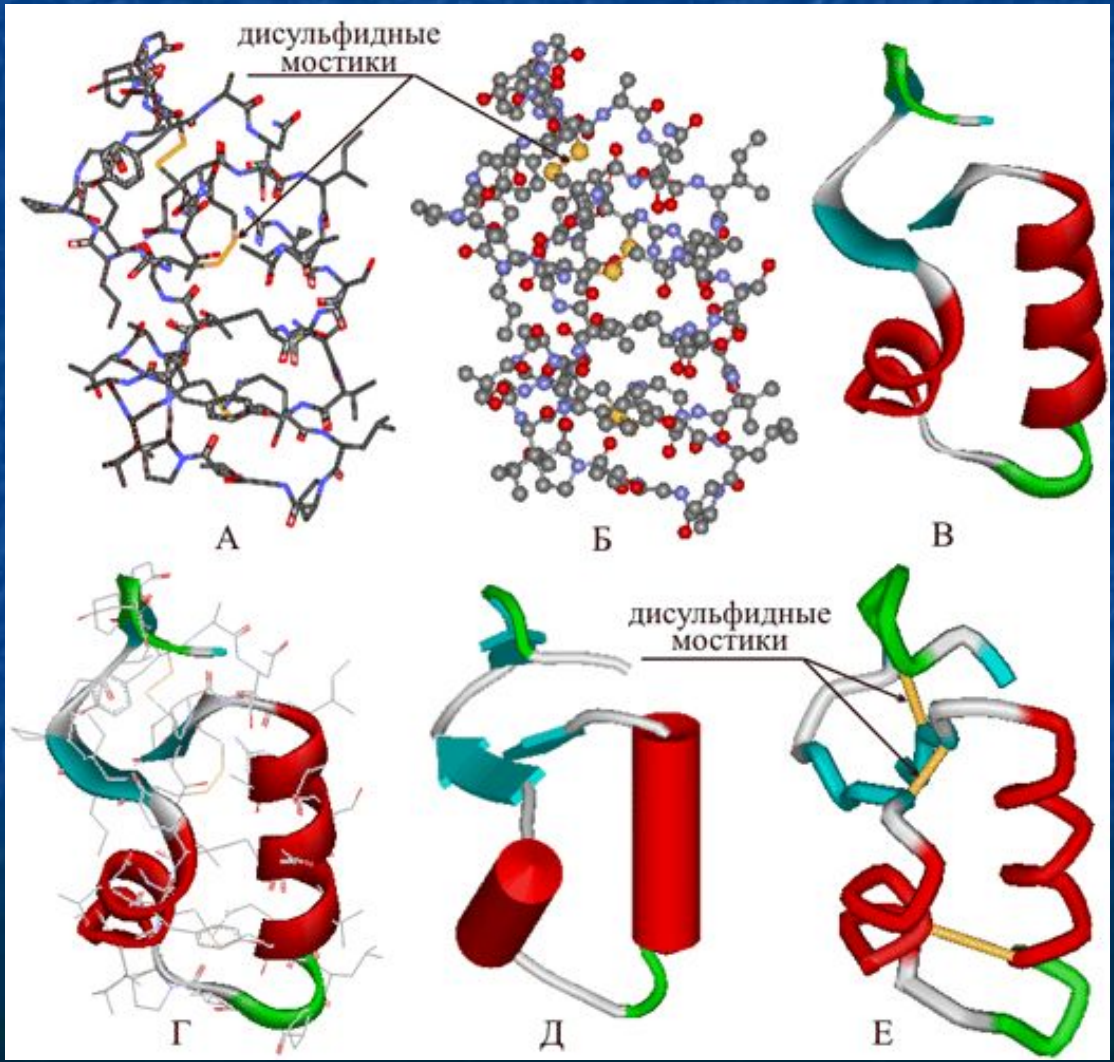
Oqsillar va peptidlar

Oqsillarning ikkilamchi strukturasi

Oqsil ikkilamchi tuzilishi - tarkibiy tashkilotning yuqori darajasi bo'lgan majburiy tuzilishli peptid guruhlar o'rtasida vodorod aloqasi tufaylidir

Oqsillar va peptidlar

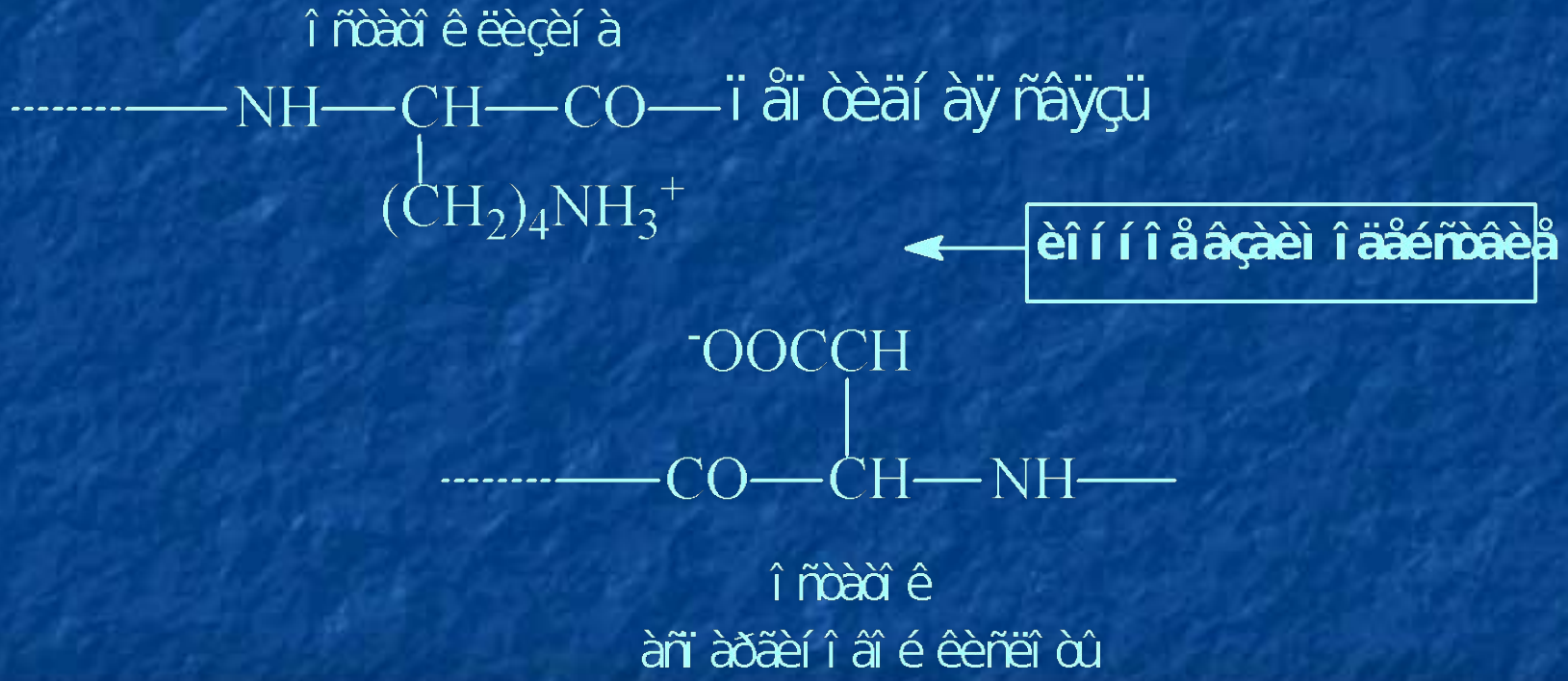
Oqsilning uchlamchi strukturasi



Turli xil imkoniyatlari Krambina proteinining tuzilishi ko'ring.
Bir fazoviy Vahiyning bir tarkibiy formula.
B - bir hajmi modeli shaklida tuzilishi.
B - molekulaning oliy tuzilishi.
D - imkoniyatlari A va B birikmasi
D - oliy tuzilishi soddalashtirilgan vakillik.
E - disülfid ko'prik bilan oliy tuzilishi.

Osillar va peptidlar

OQsillarninf ion bog'lanishi.

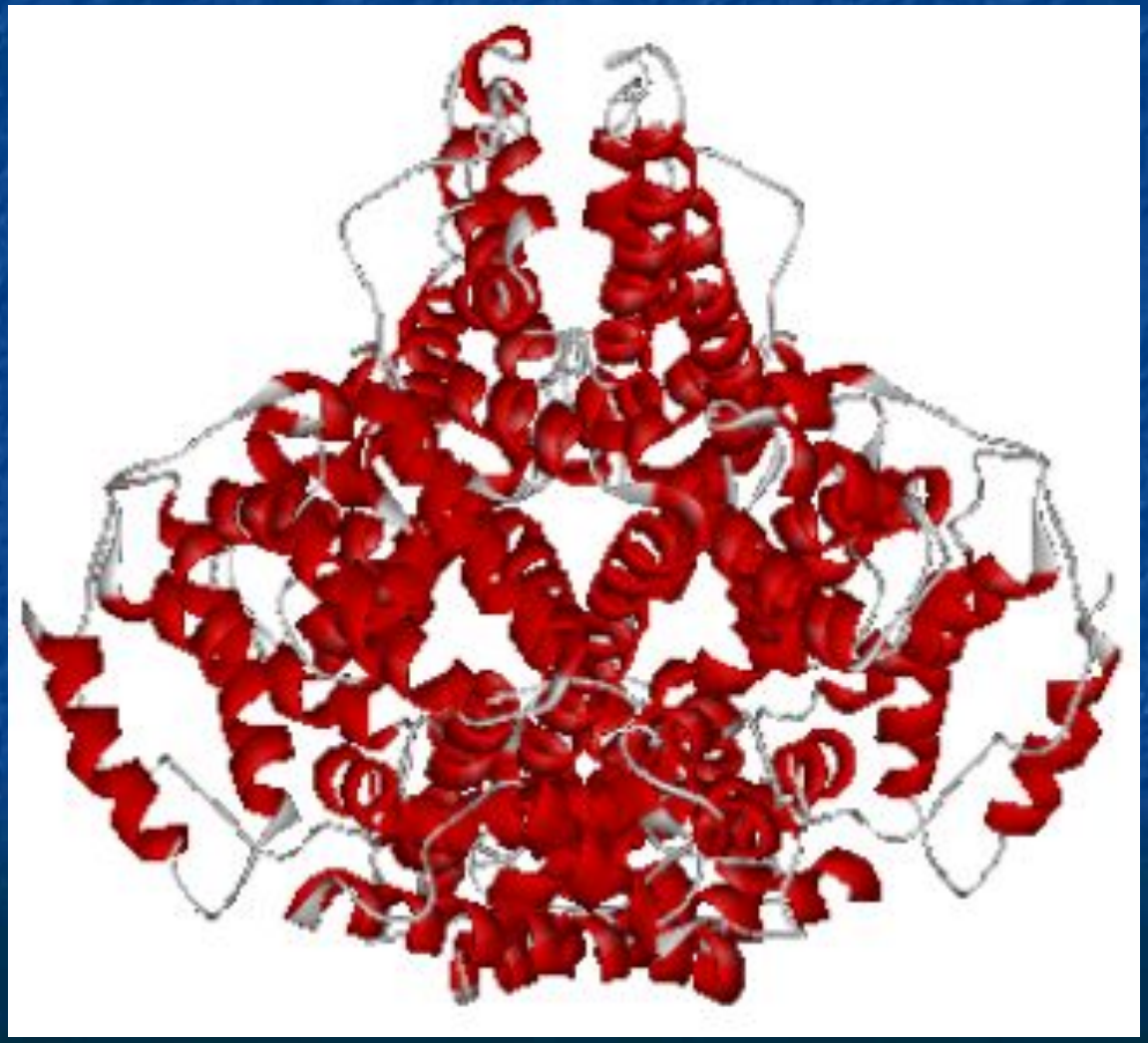


OQsillar va peptidlar.

Oqsildagi disulfid bog'lanish

Oqsilllar va peptidlar.

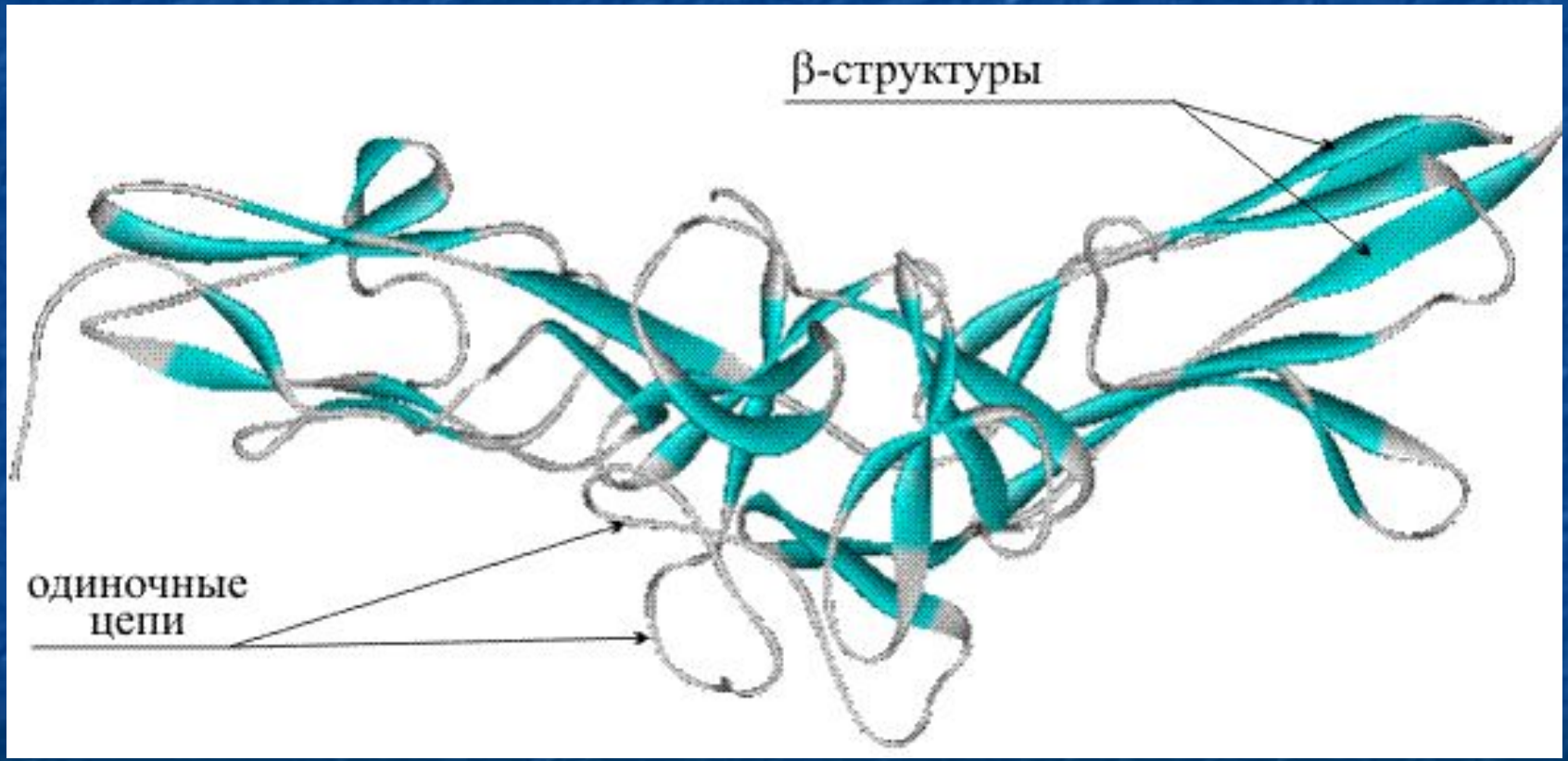
Globulin oqsili



Yumaloq tuzilishi albumin (tuxum oqsili). Chirigan tuxum hidi manbai - protein tanazzuli jarayonida tez vodorod sülfidin hosil tizim bo'yicha disülfid ko'prik hozirgi sulfgidridnye bepul HS-guruhlar, tarkibida qo'shimcha ravishda. Disülfid ko'prik ko'p yanada barqaror va oqsil kengaytirish vodorod sülfidin hosil emas

Oqsillar va peptidlar

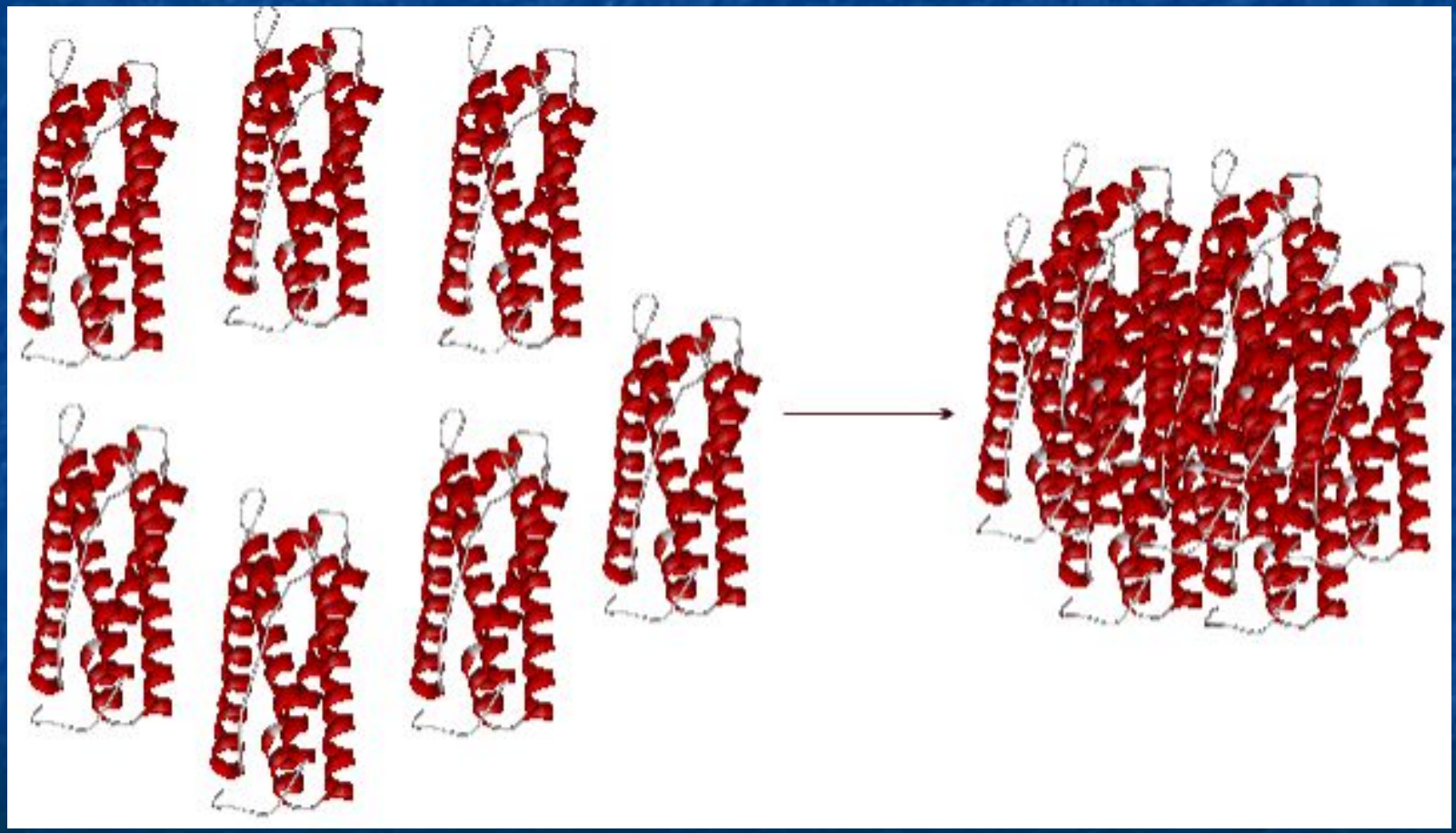
Fibrilyar oqsillar



Fibrionning fibrilyar oqsili

Peptidlar va oqsillar

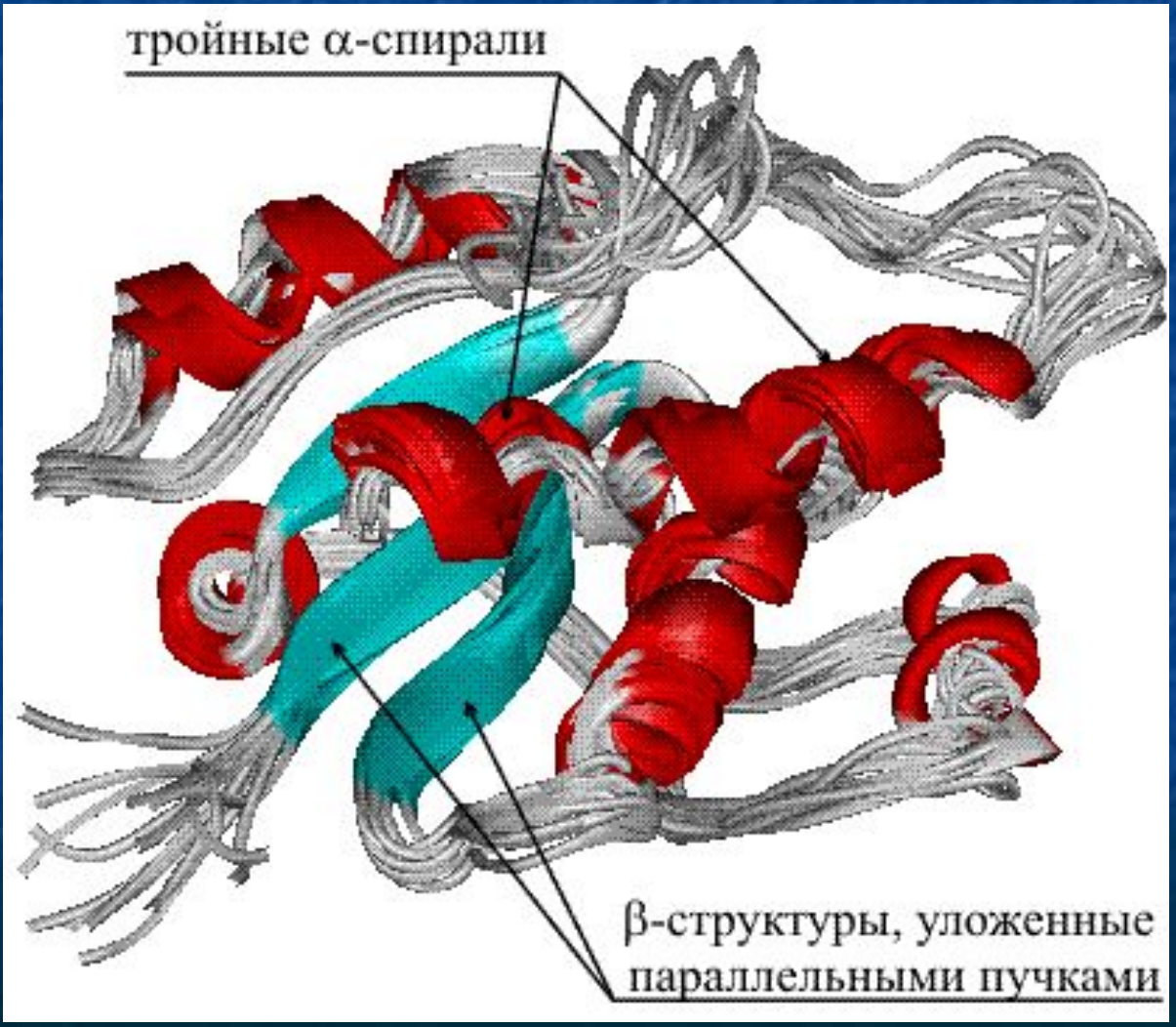
Oqsilning to’rtlamchi strukturasi



Globulin oqsilining to’rtlamchi strukturasi

Peptidlar va oqsillar

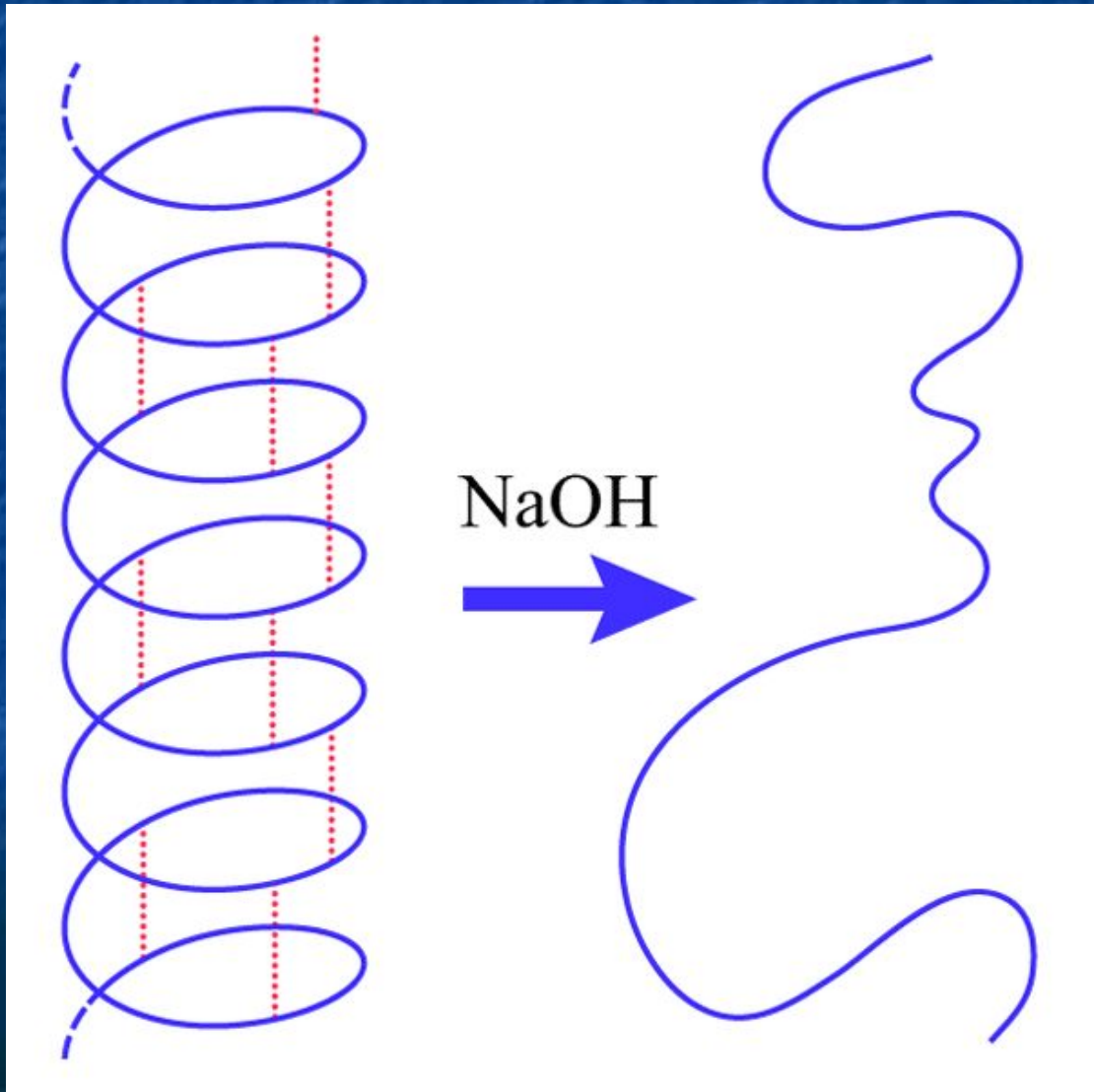
Oqsilning to’rtlamchi strukturasi



Fibrilyar kollagen oqsil Supramolekulalari. Kollagen misolida fibrilyar oqsillarni yaratish sifatida ishtirok etishi mumkin, deb ko'rish mumkin. A-spiral va b-qurilish. Dumaloq oqsillarni uchun bir xil, ular oliy tuzilmalar ikki turdagi bo'lishi mumkin

Peptidlar va oqsillar
Oqsillar denaturatsiyasi

Yuqorituzilishdagi tuzilmalar fizik va kimyoviy omillar (yuqori harorat, kislota, ishqor va b.) ta’sirida quyi tuzilishdagi shakllarga qaytadi (bu hodisa Oqsillar denaturatsiyasi deb ataladi), natijada ular o‘z biologik faolligini yo‘qotadi.



Peptidlar va oqsillar.