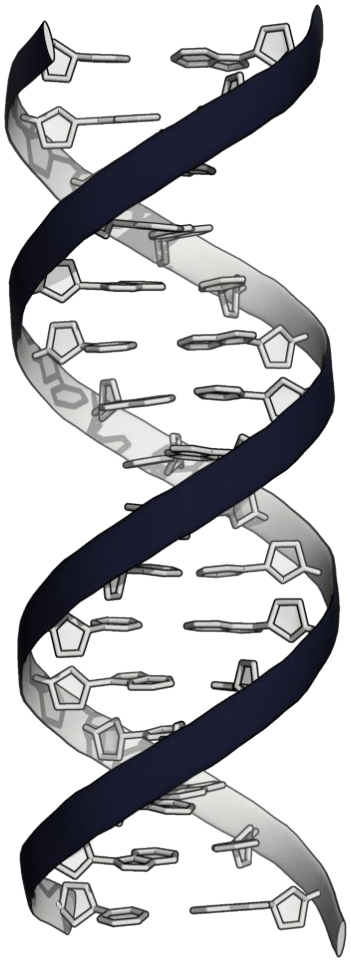
Научно-технологический университет Сириус

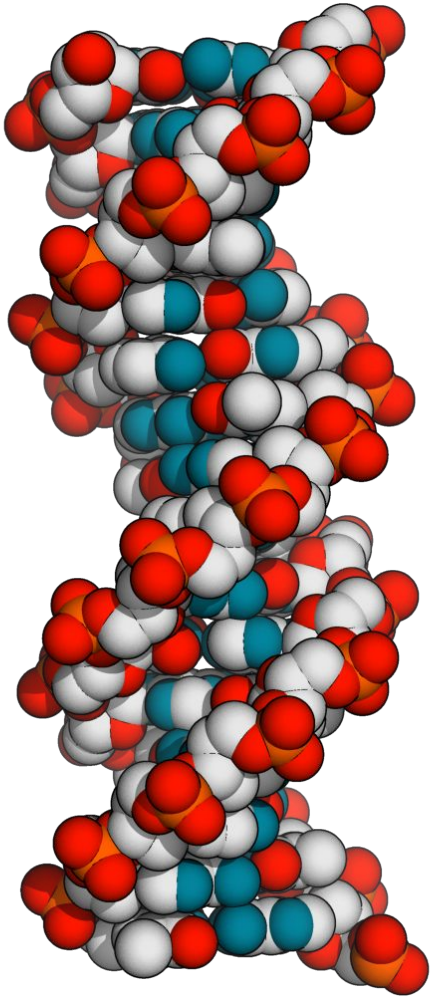
Структурная биоинформатика | Лекция 6

Структурная биология нуклеиновых кислот

Александр Злобин

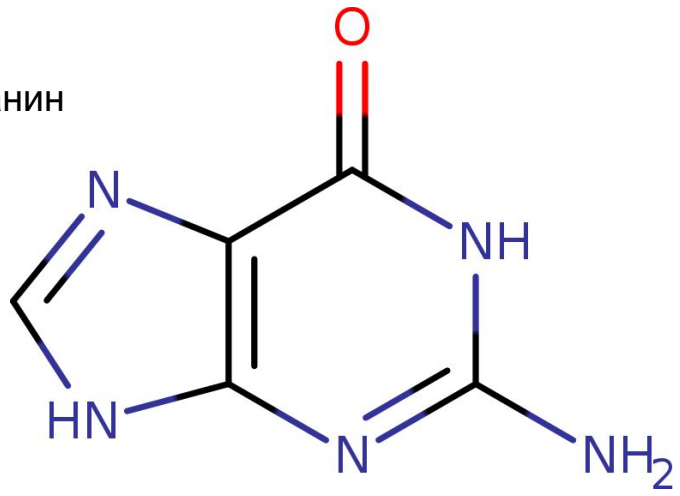
Что такое нуклеиновые кислоты?



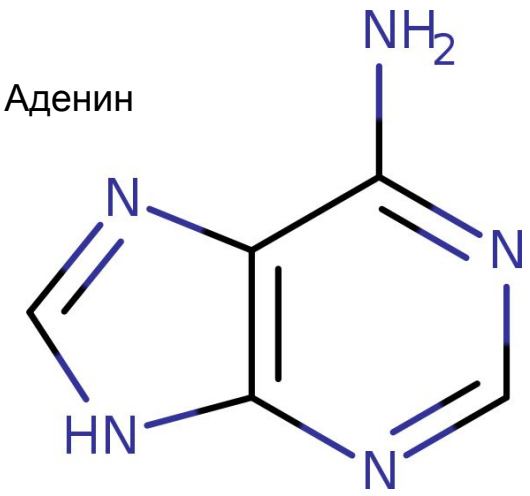


Азотистые основания

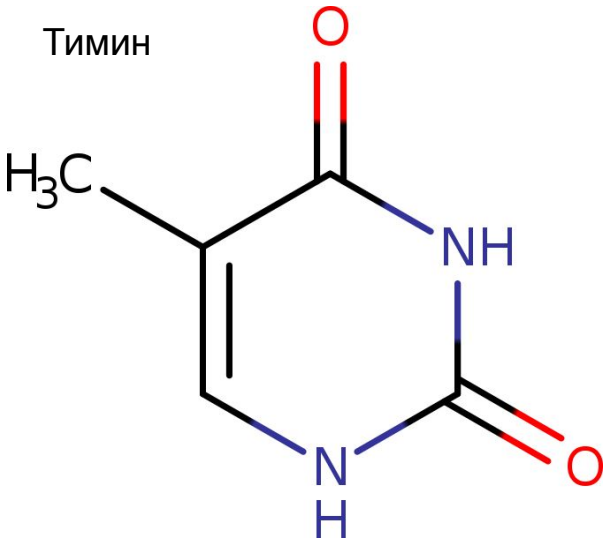
Гуанин



Аденин



Тимин



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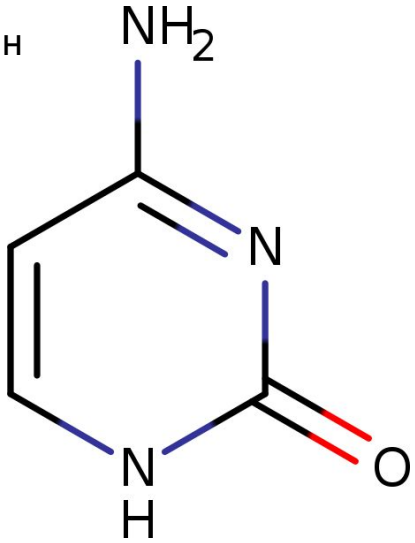

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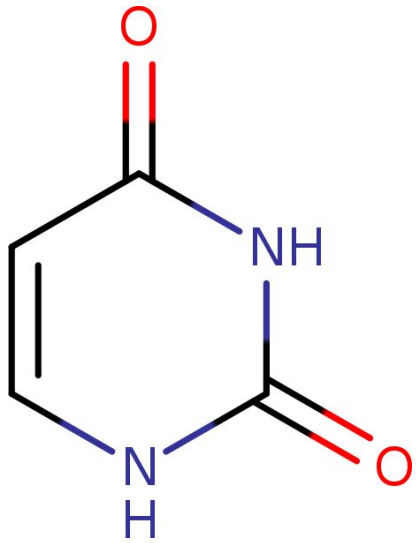
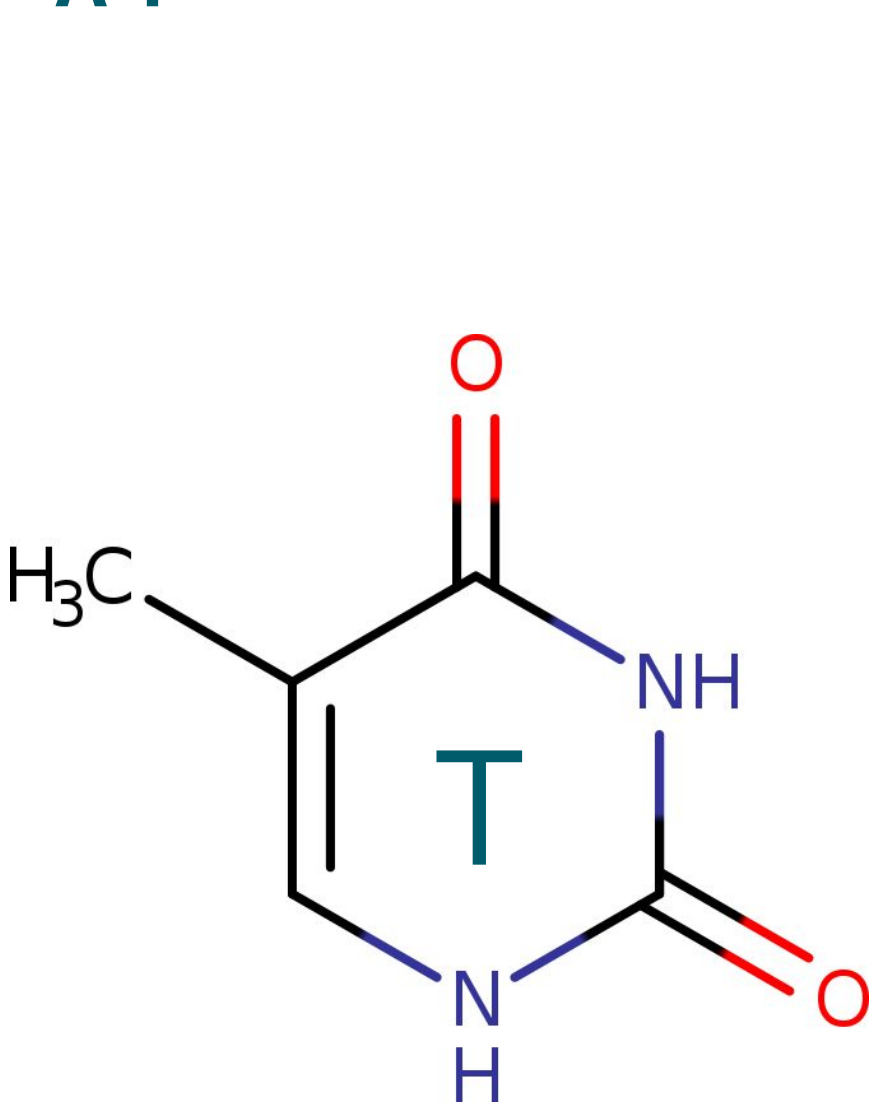
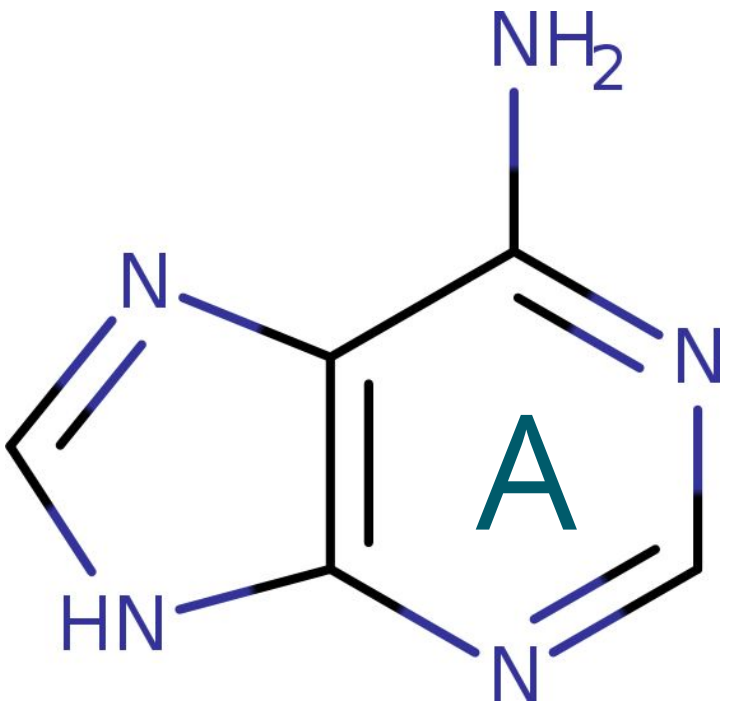


A-T





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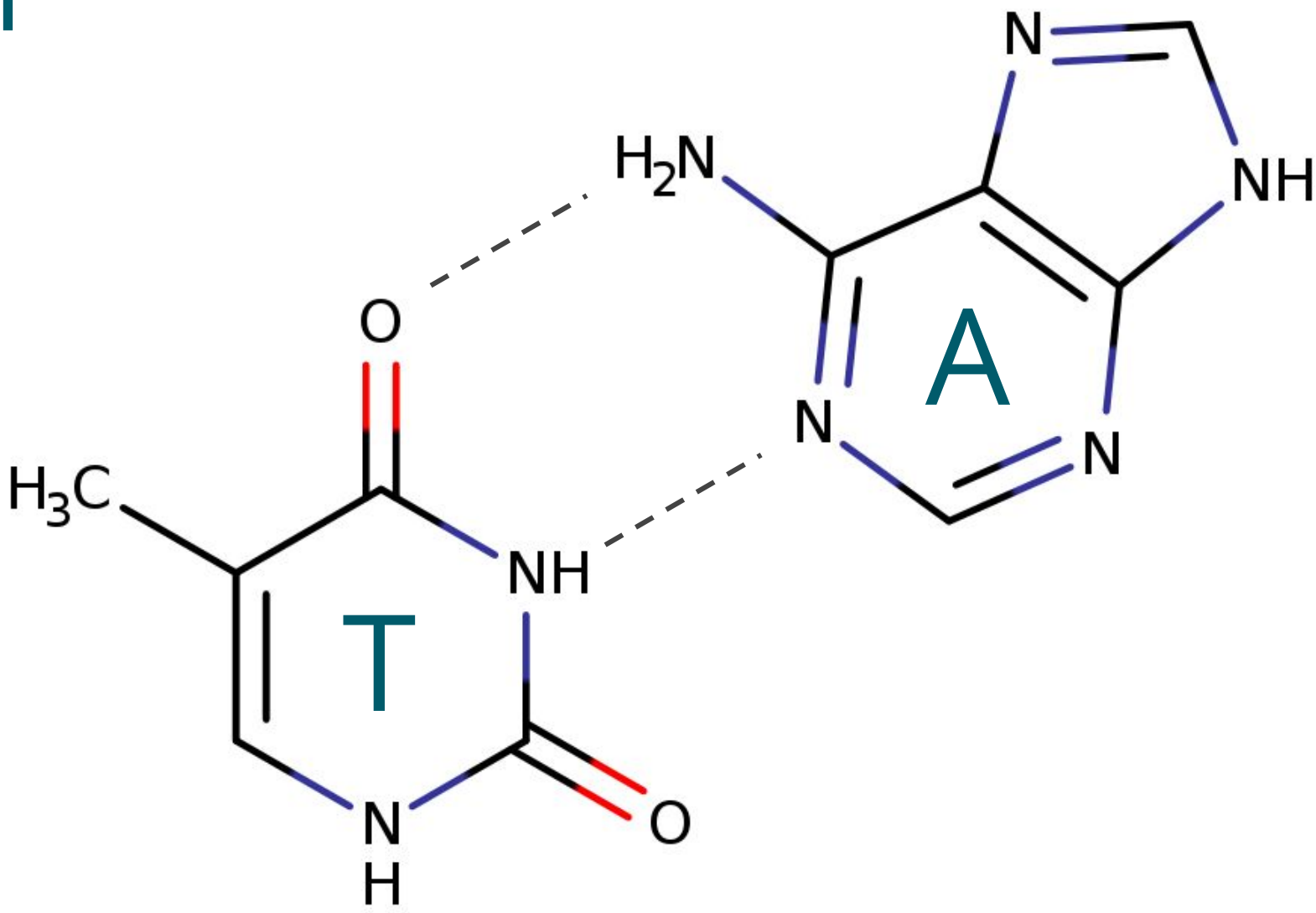

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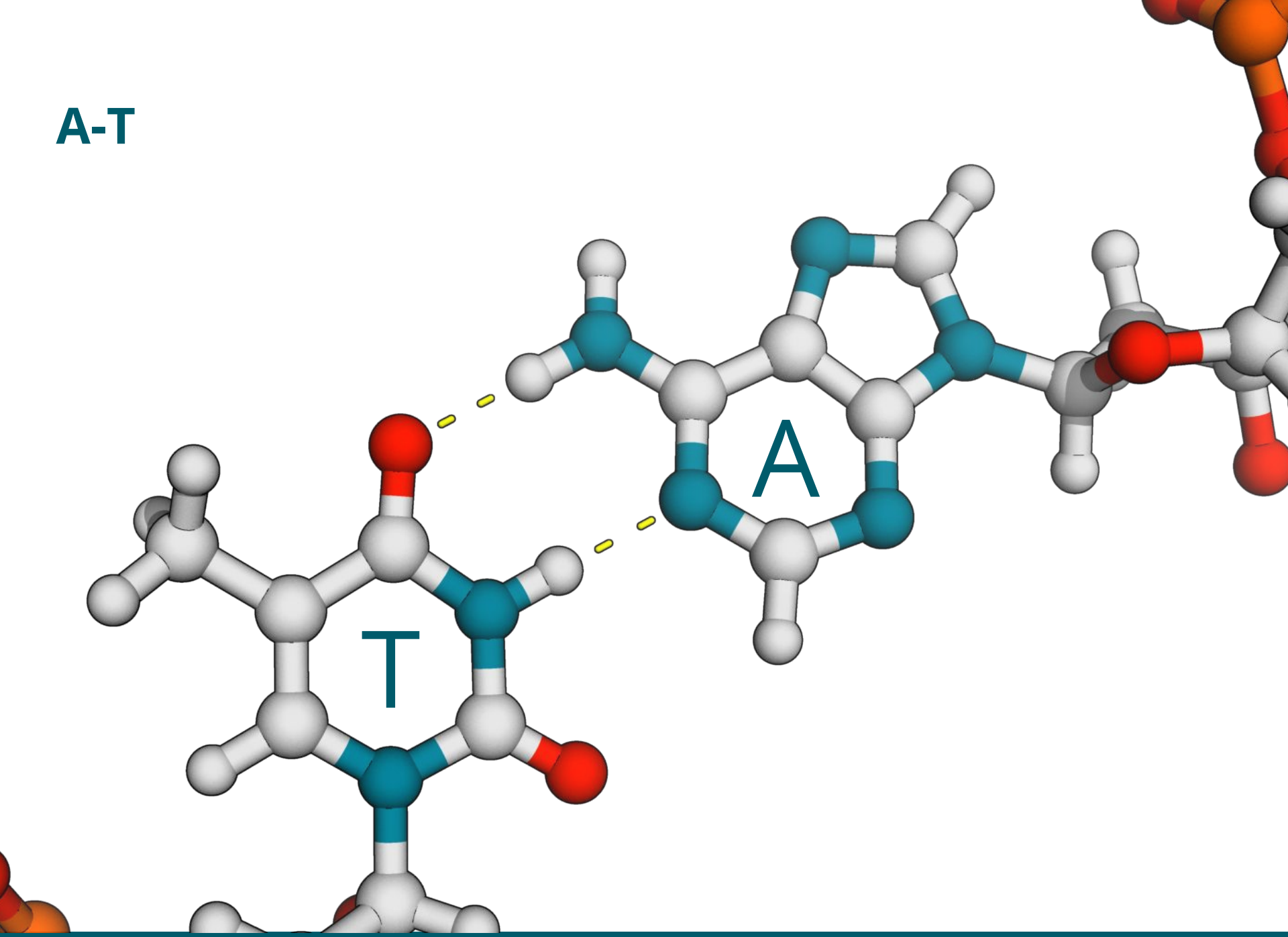

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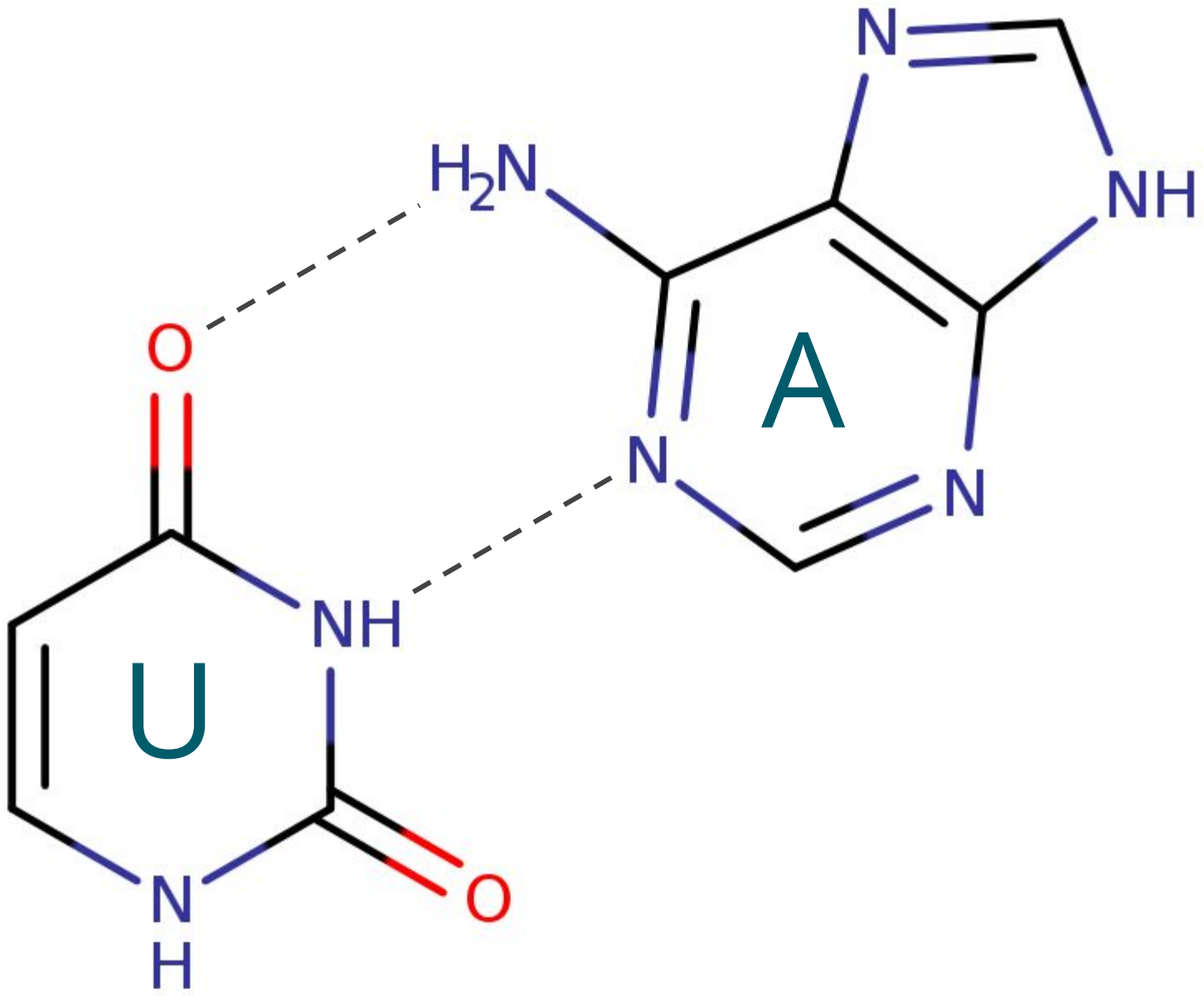
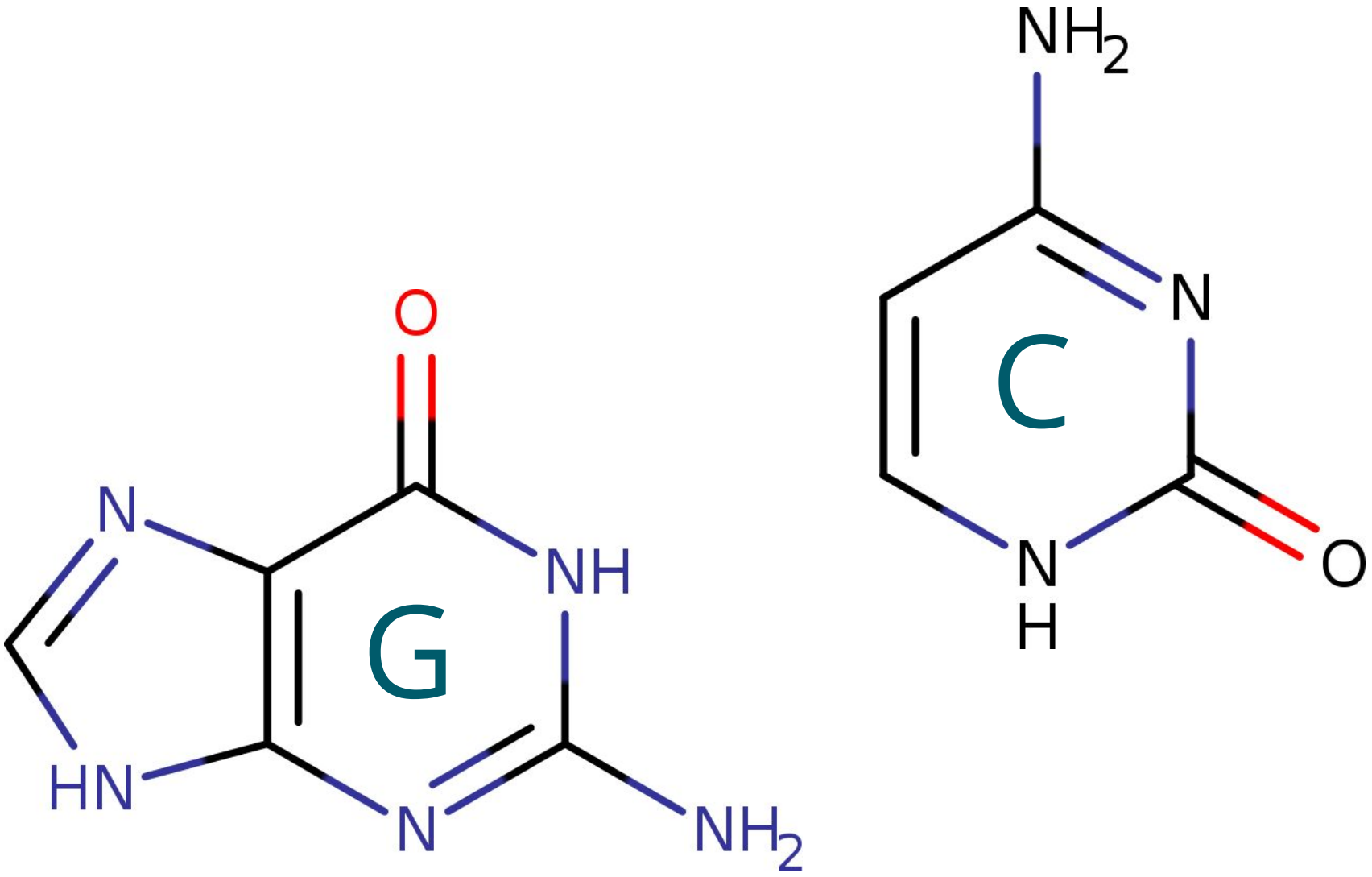


G-C



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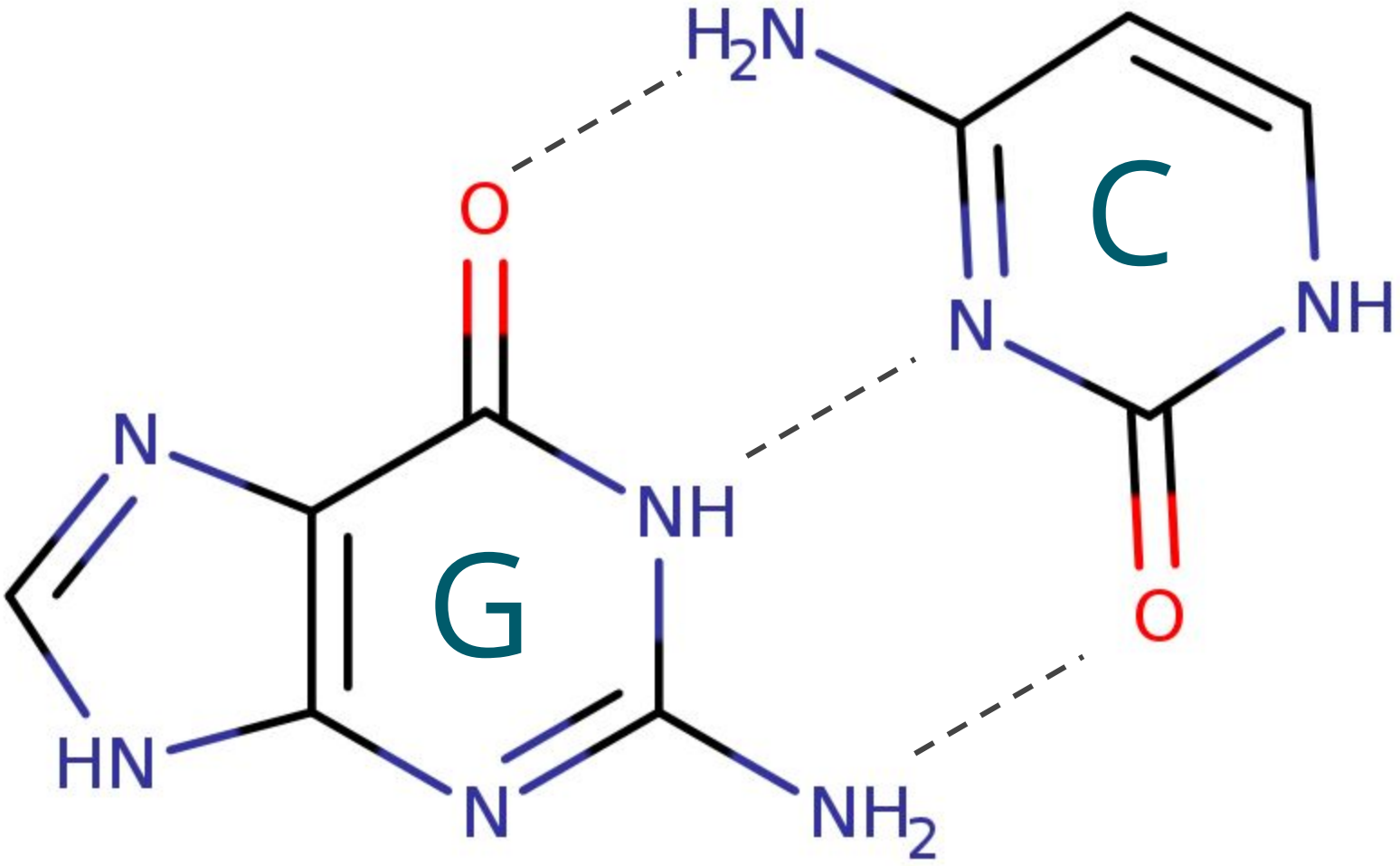

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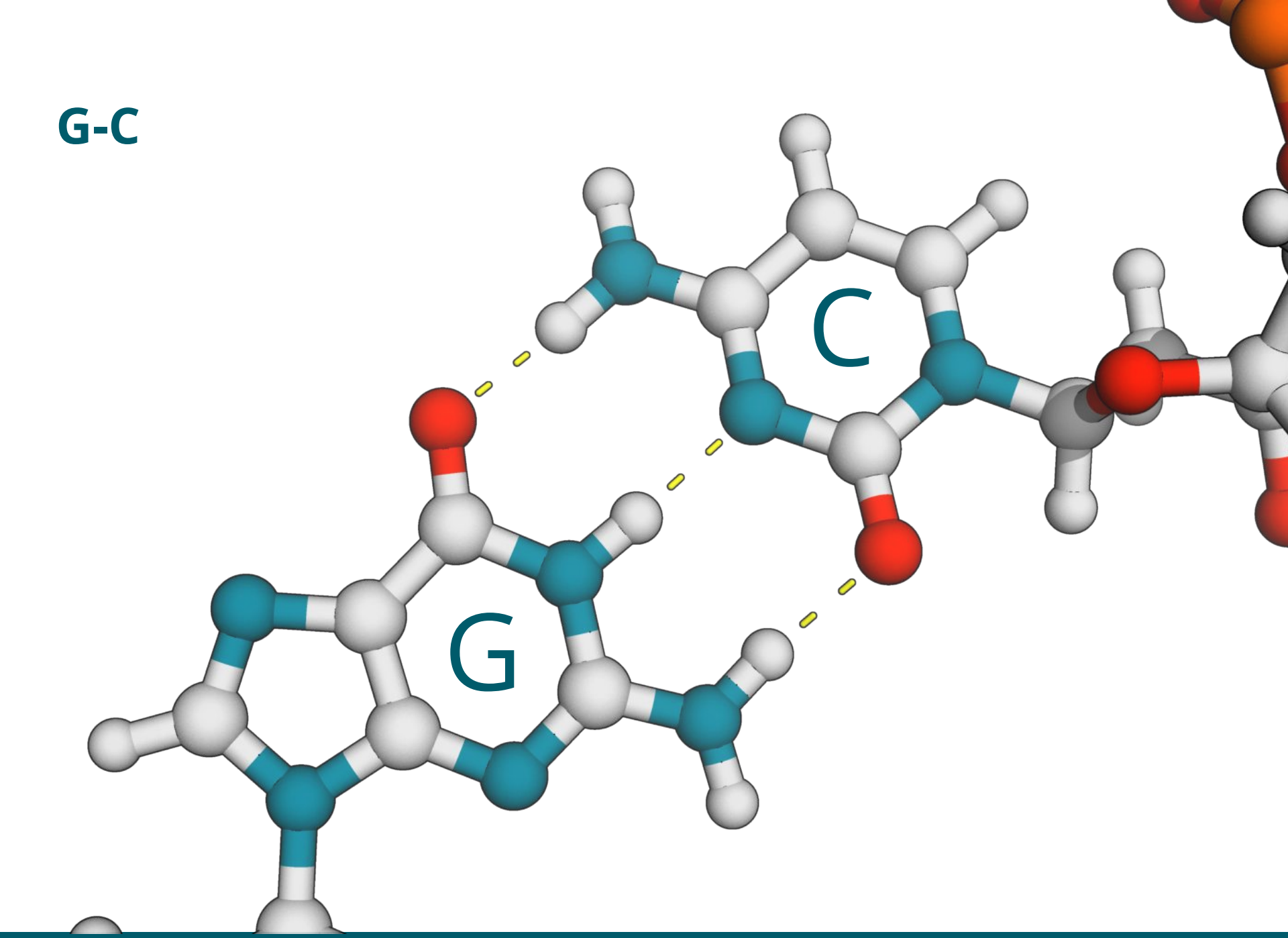
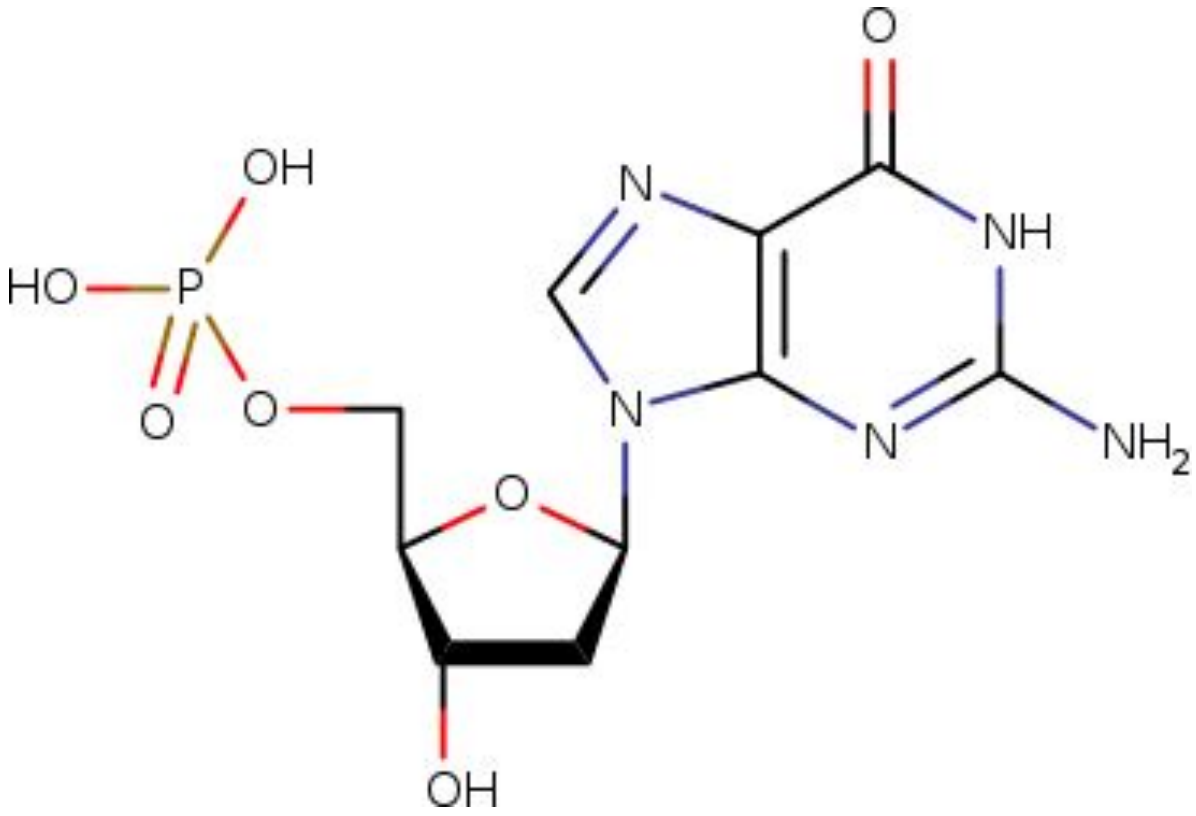
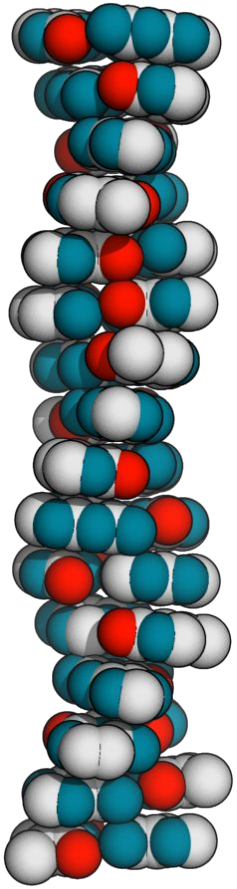


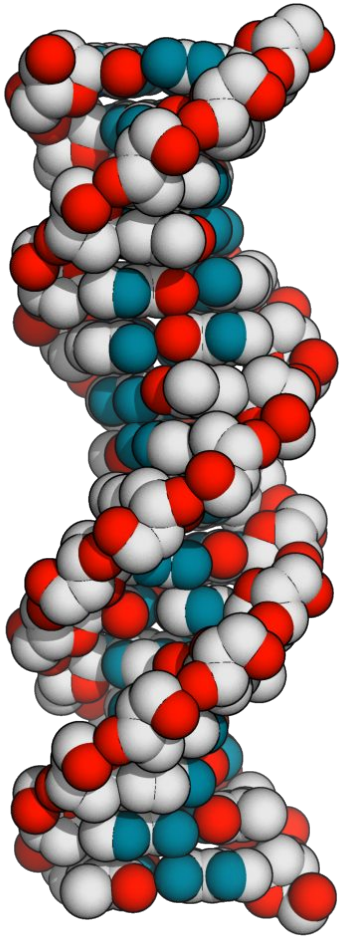
Нуклеотид



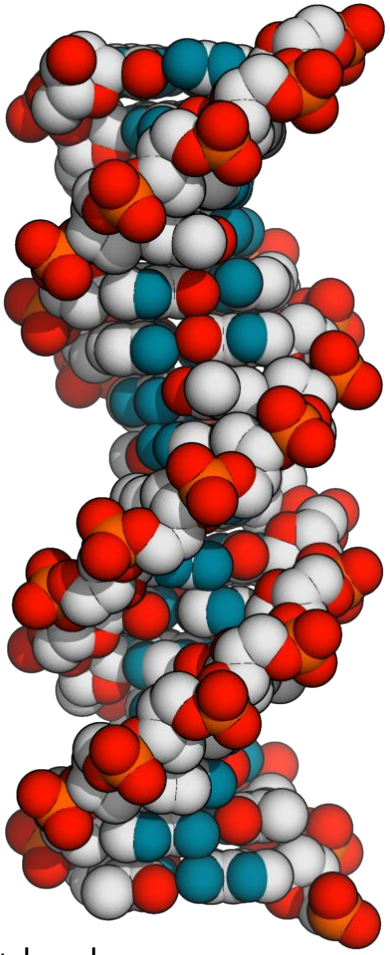
Роль фосфатов



азотистые основания

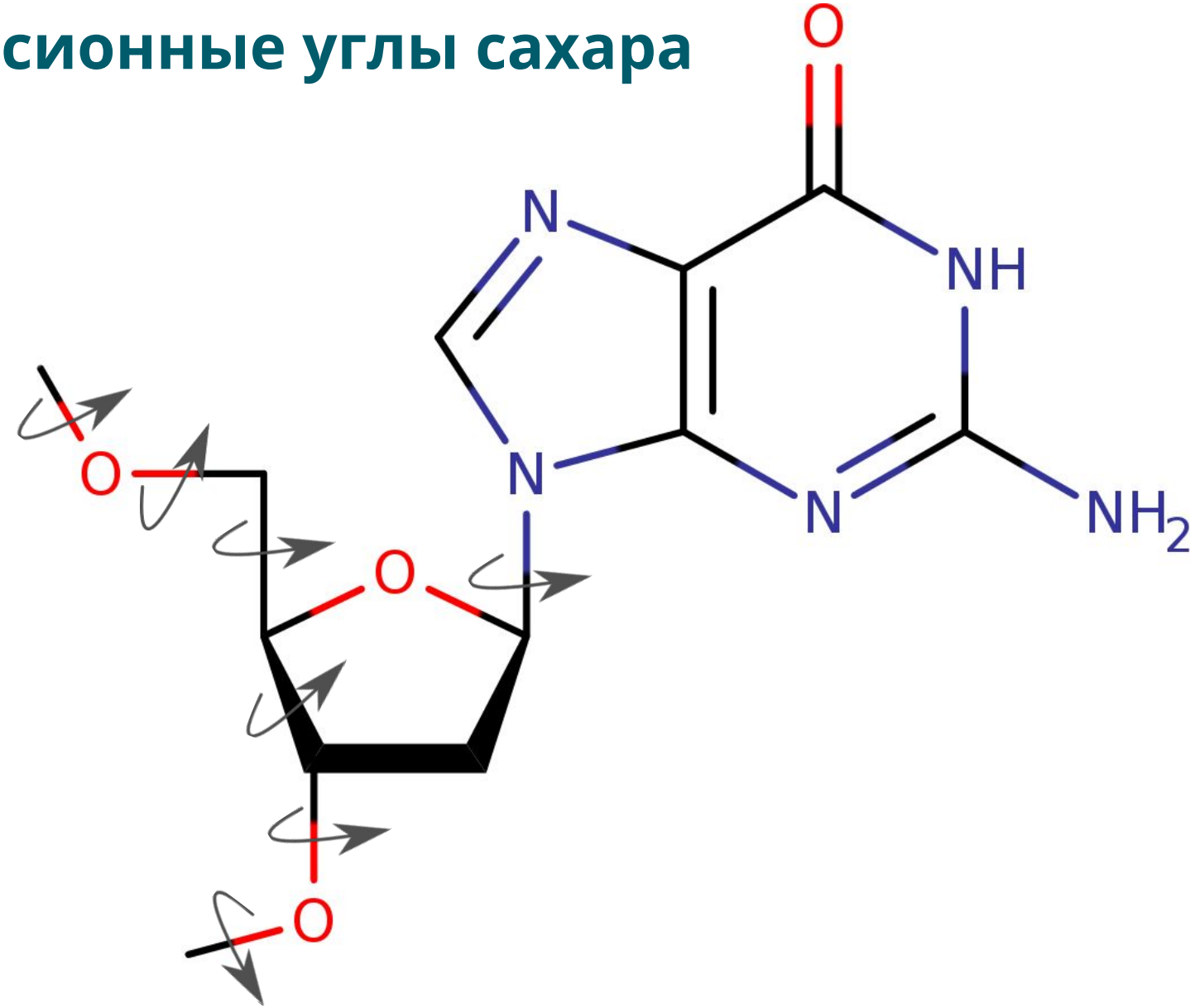


+сахара

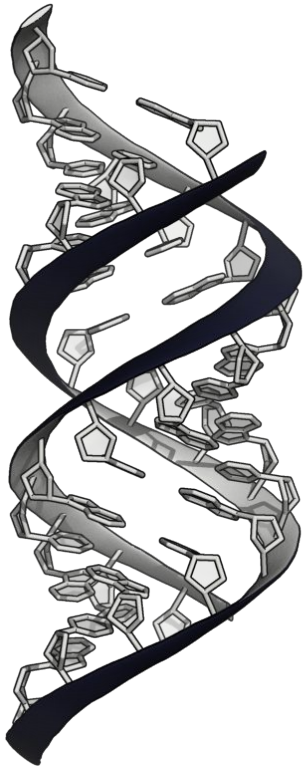


+фосфаты

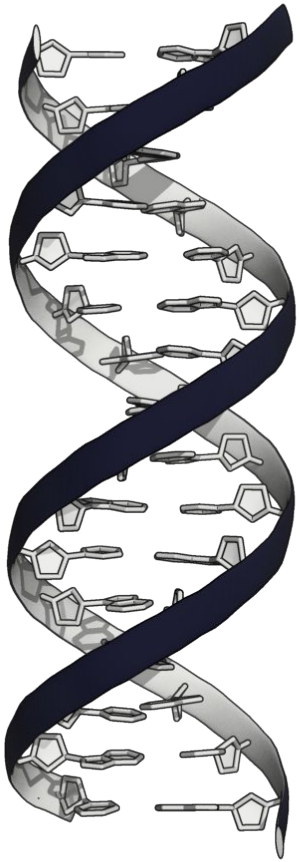
Торсионные углы сахара



A-, B-, Z-формы ДНК



A-форма



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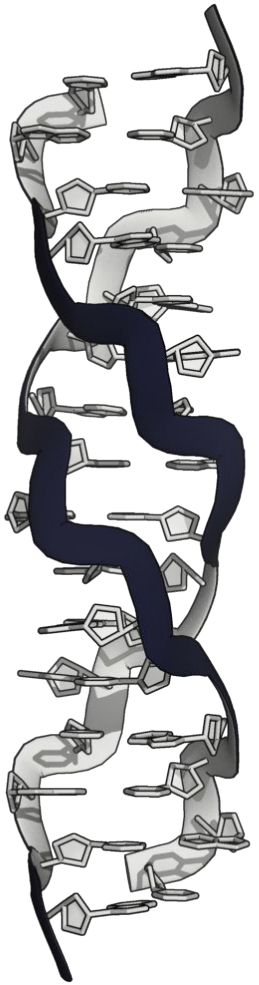
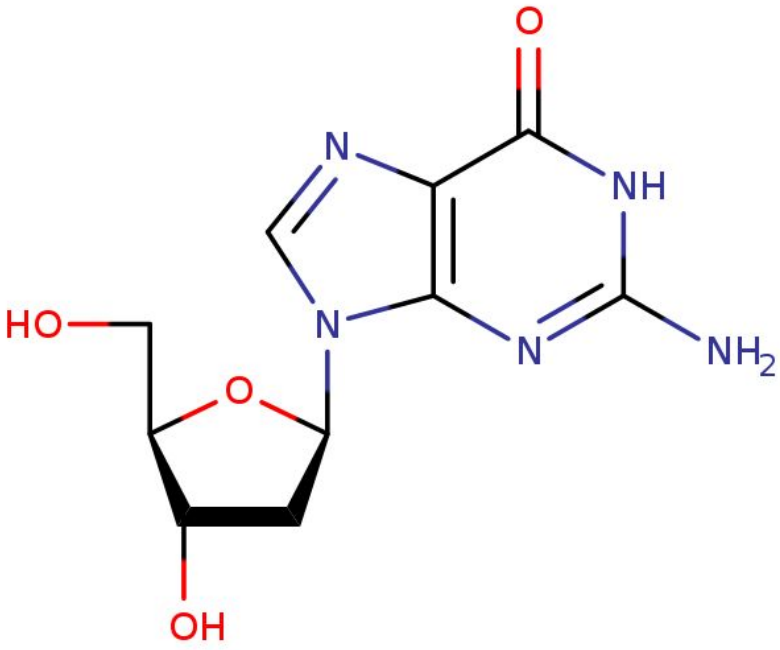
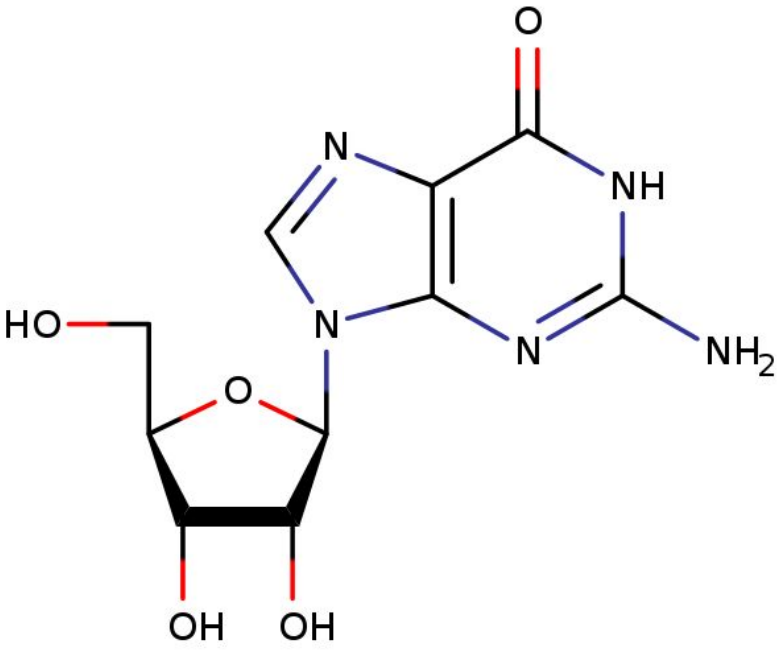


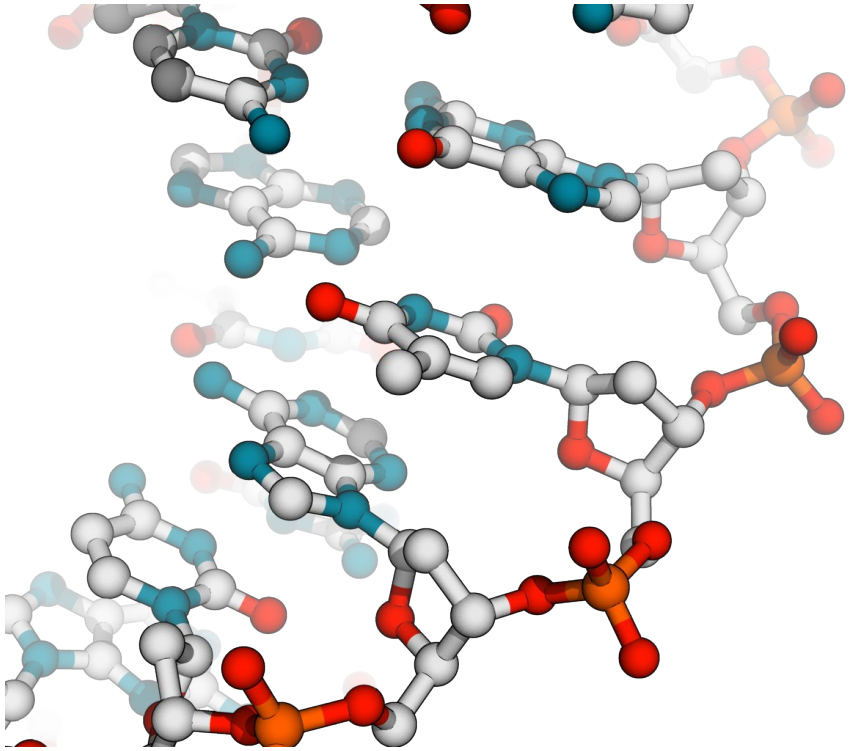
Z-форма

Дезоксирибоза vs. Рибоза





Дезоксирибоза vs. Рибоза



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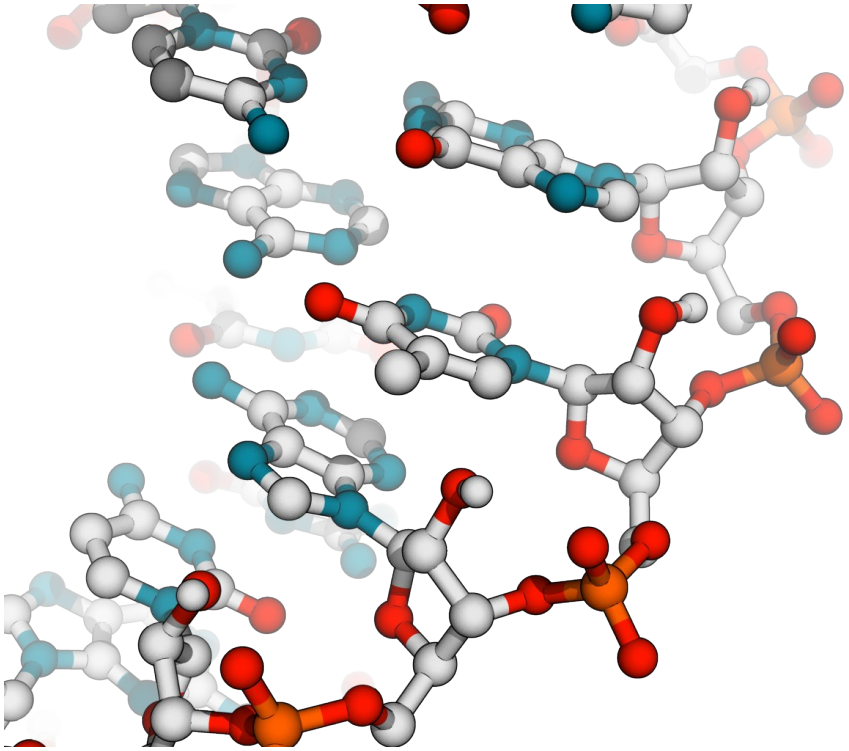
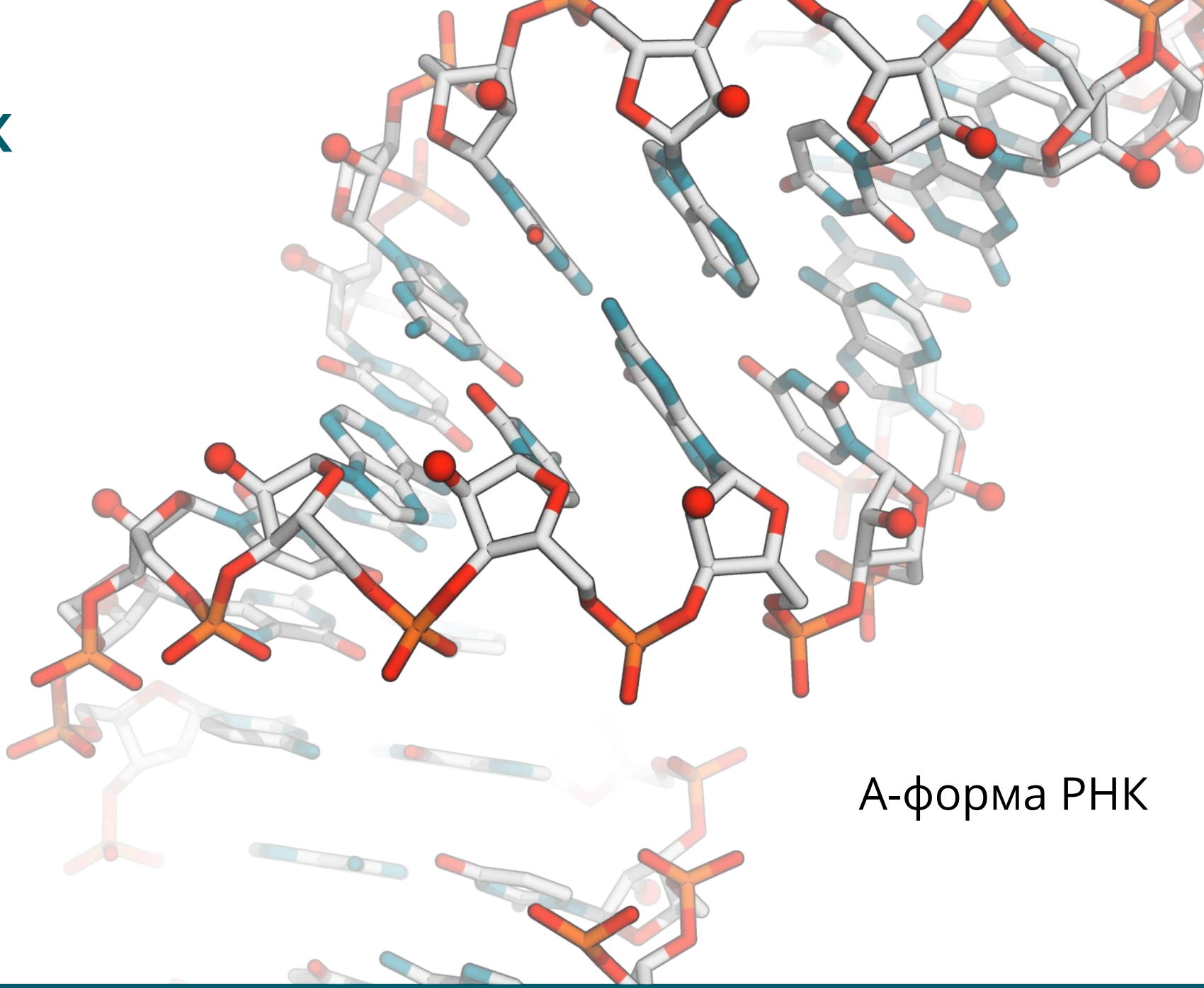


“B-форма РНК”

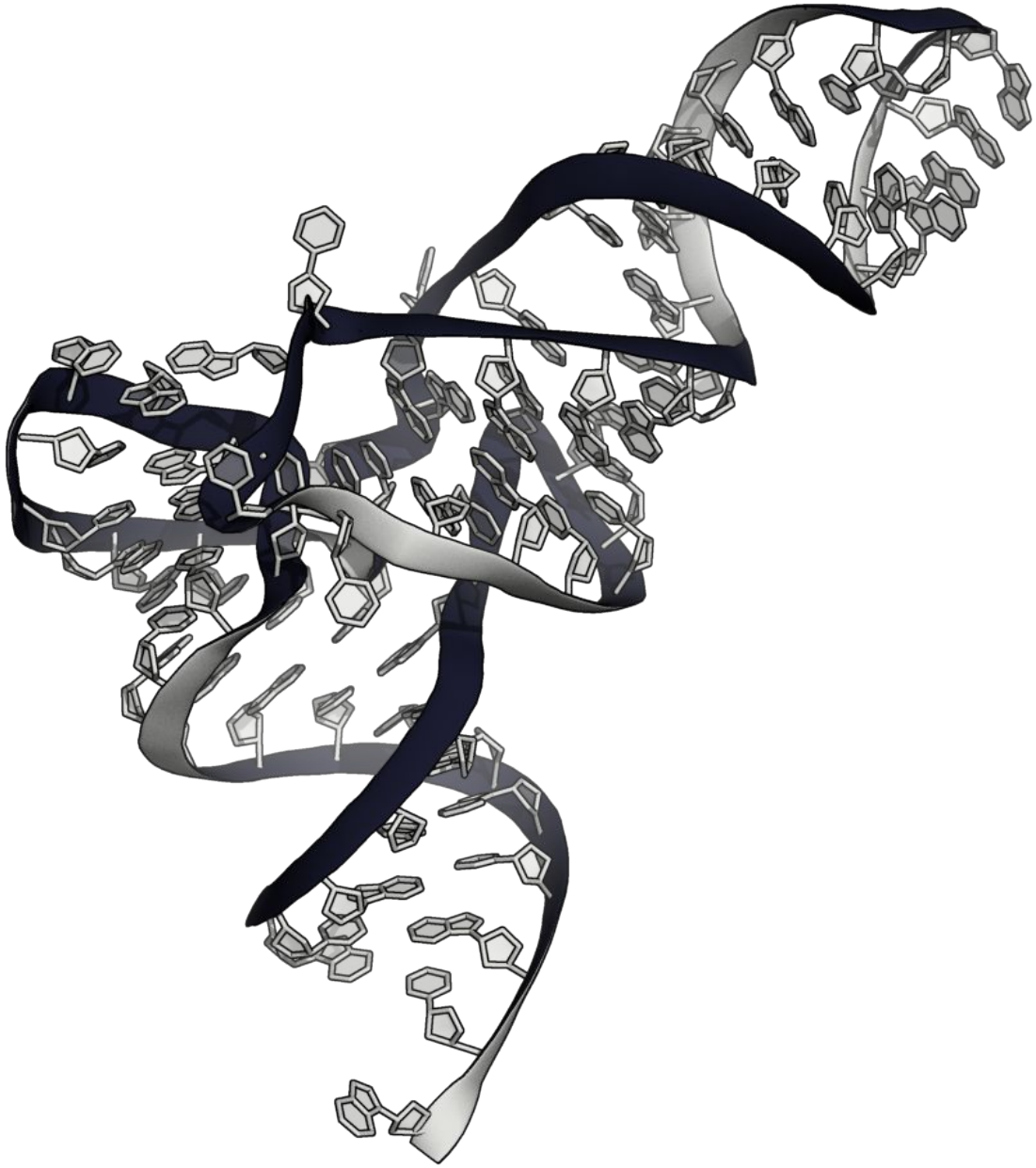
РНК



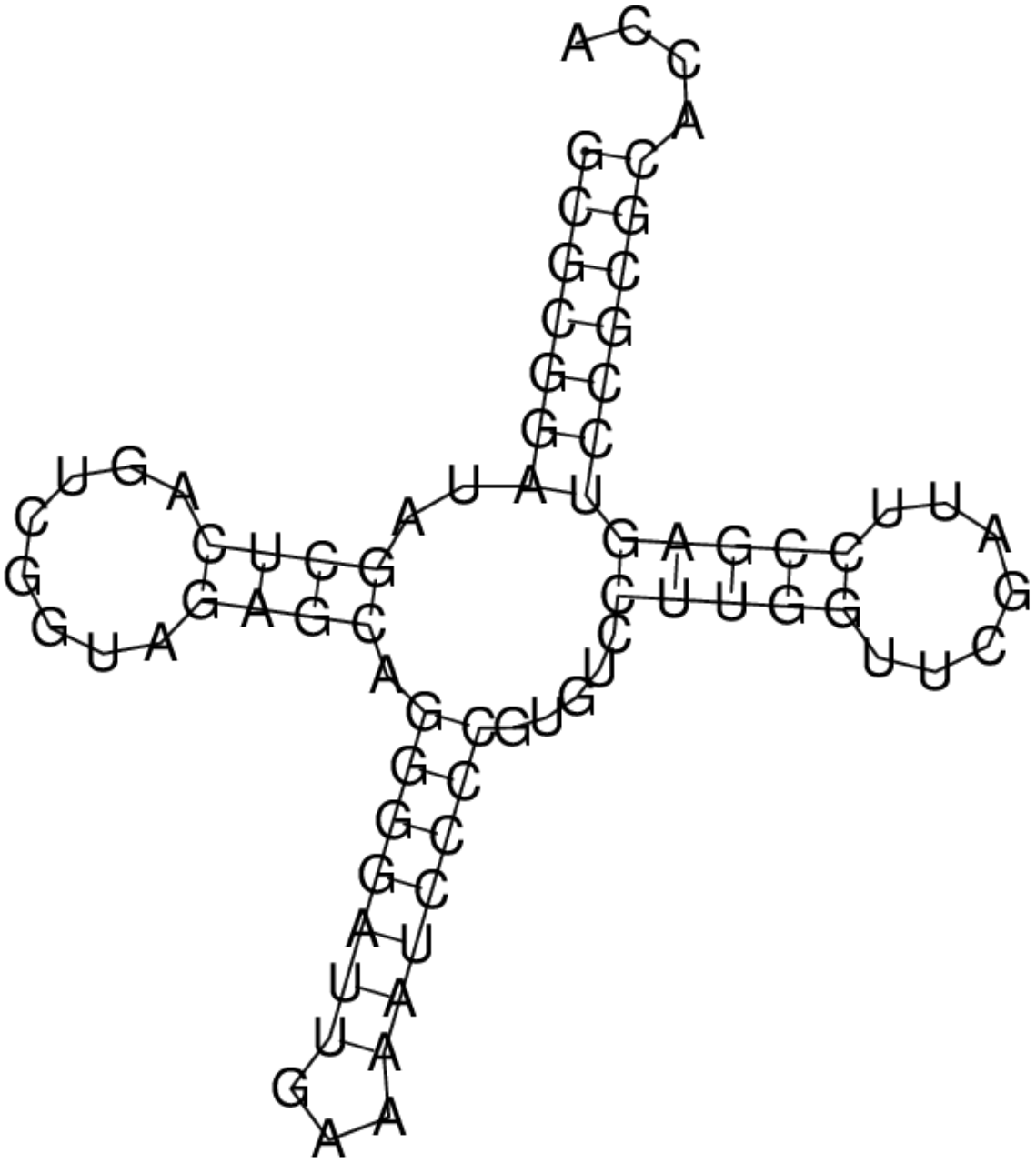
А-форма РНК

Перерыв

тРНК



тРНК



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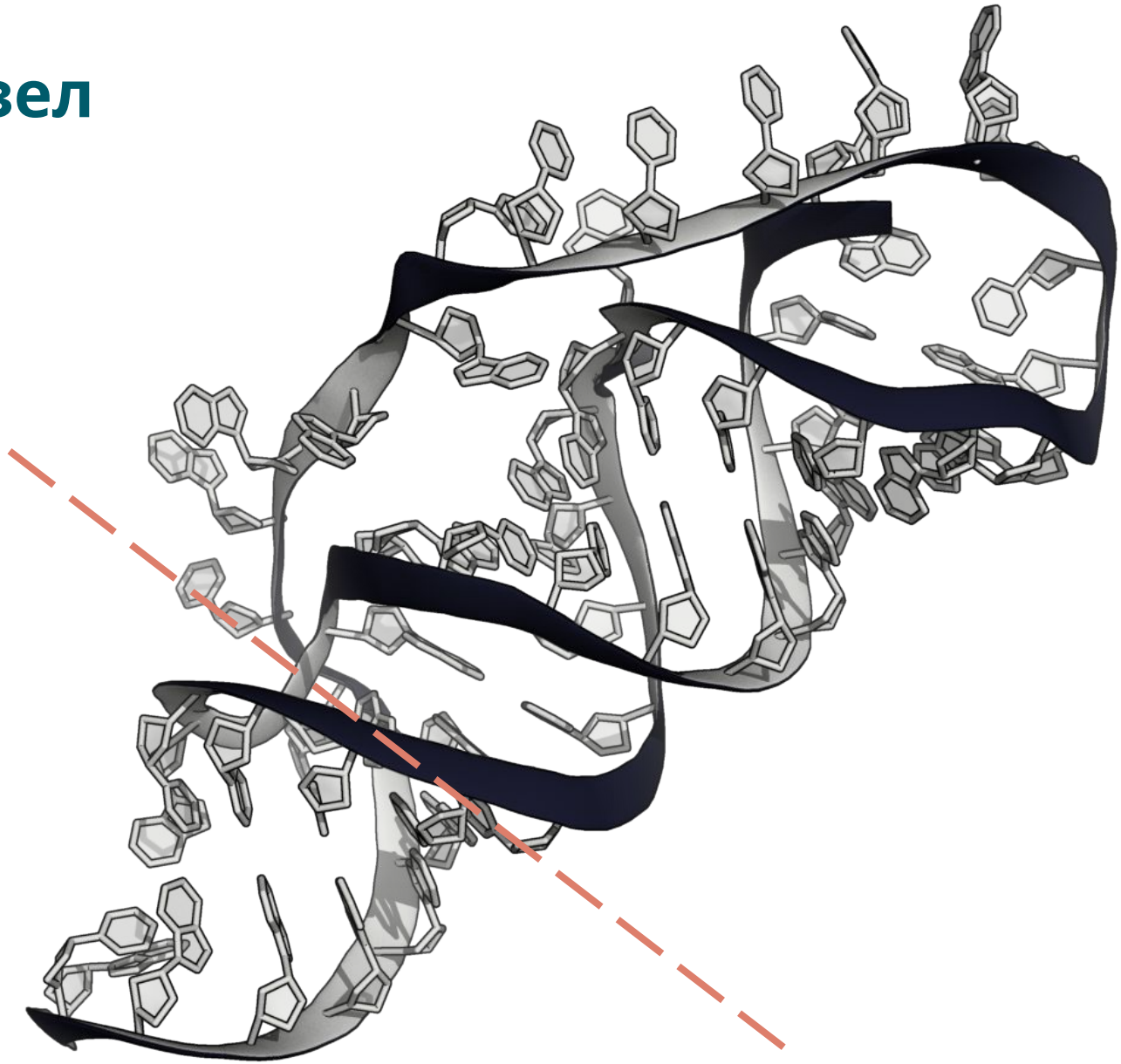
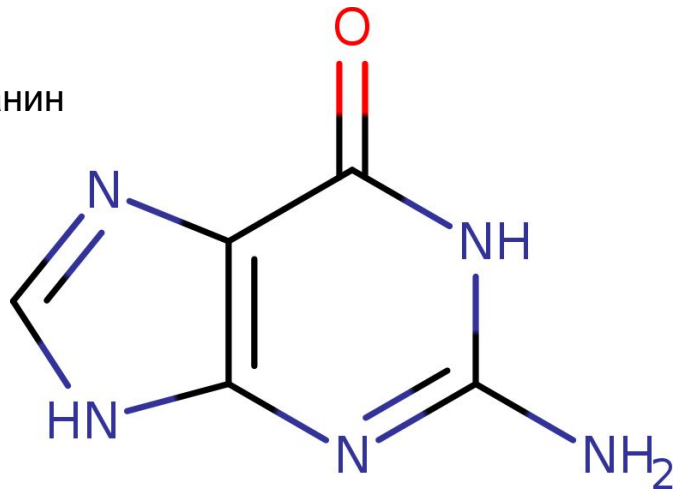
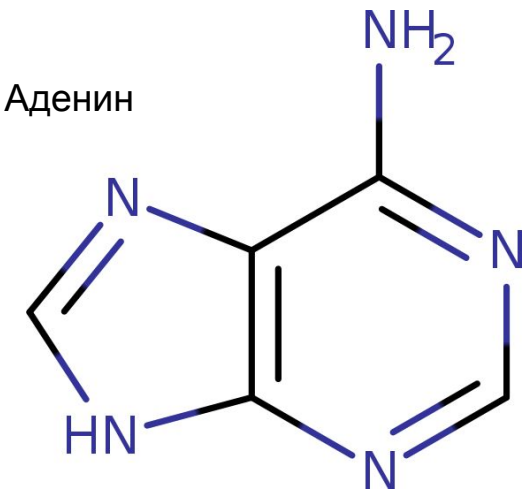


Давайте снова посмотрим на основания

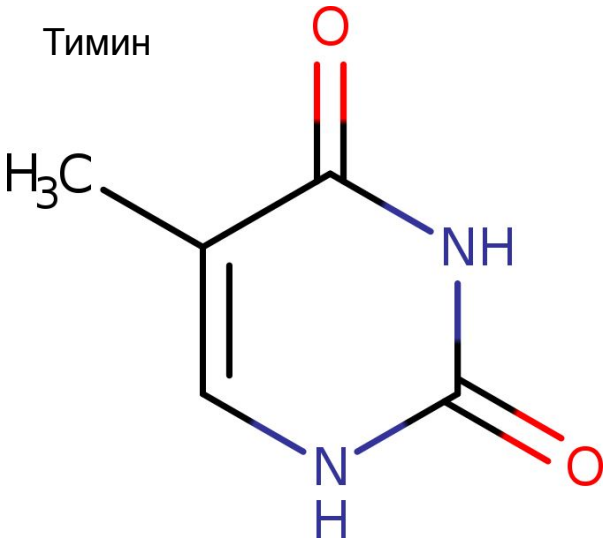
Гуанин



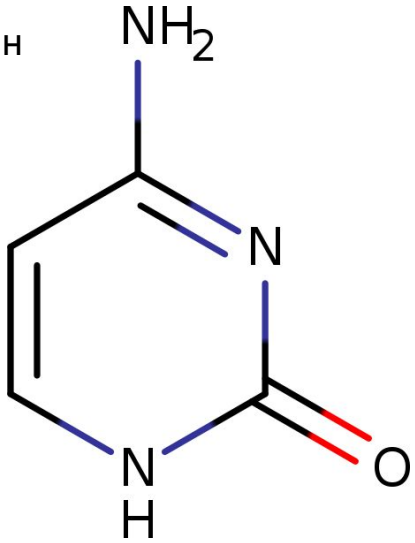
Аденин



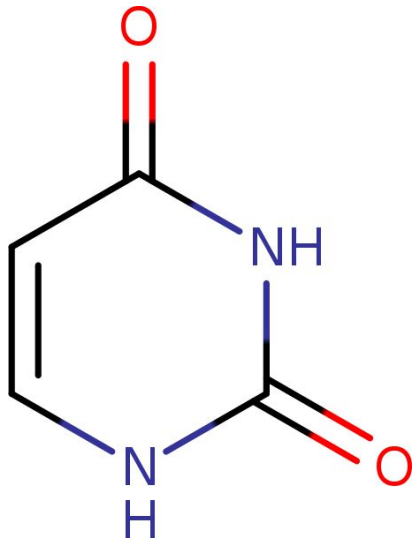
Тимин



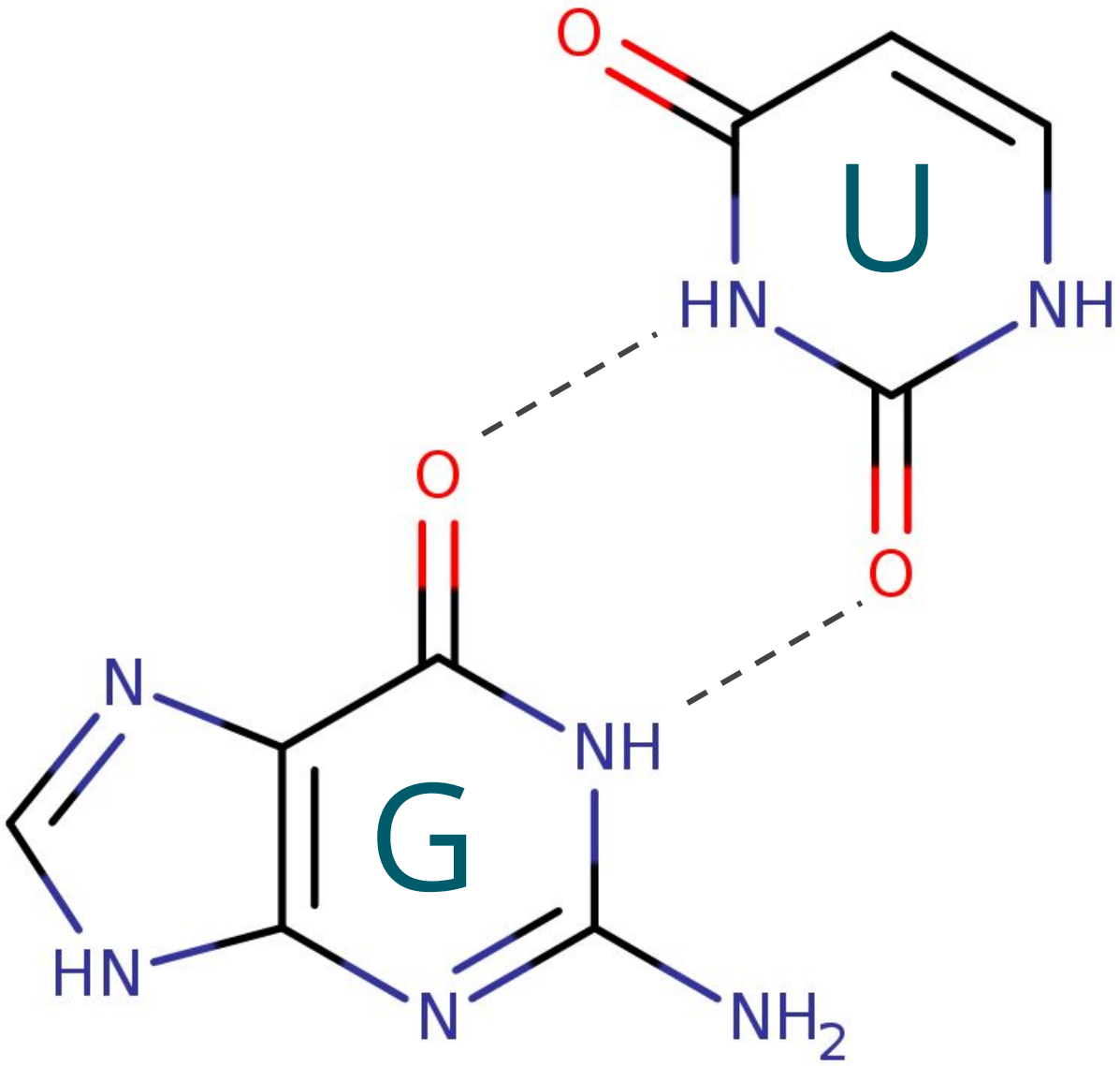
Цитозин



Урацил



G-U



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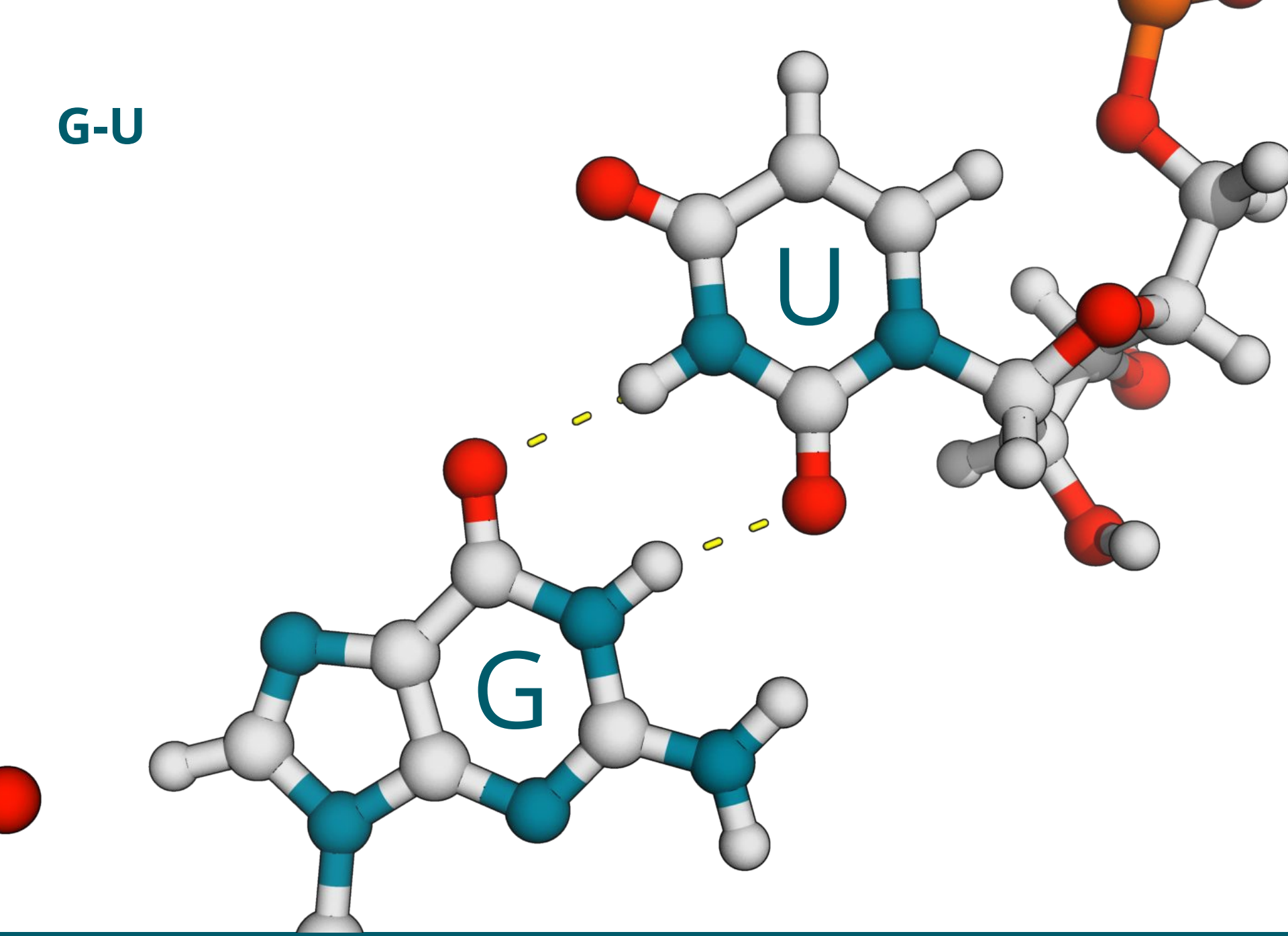
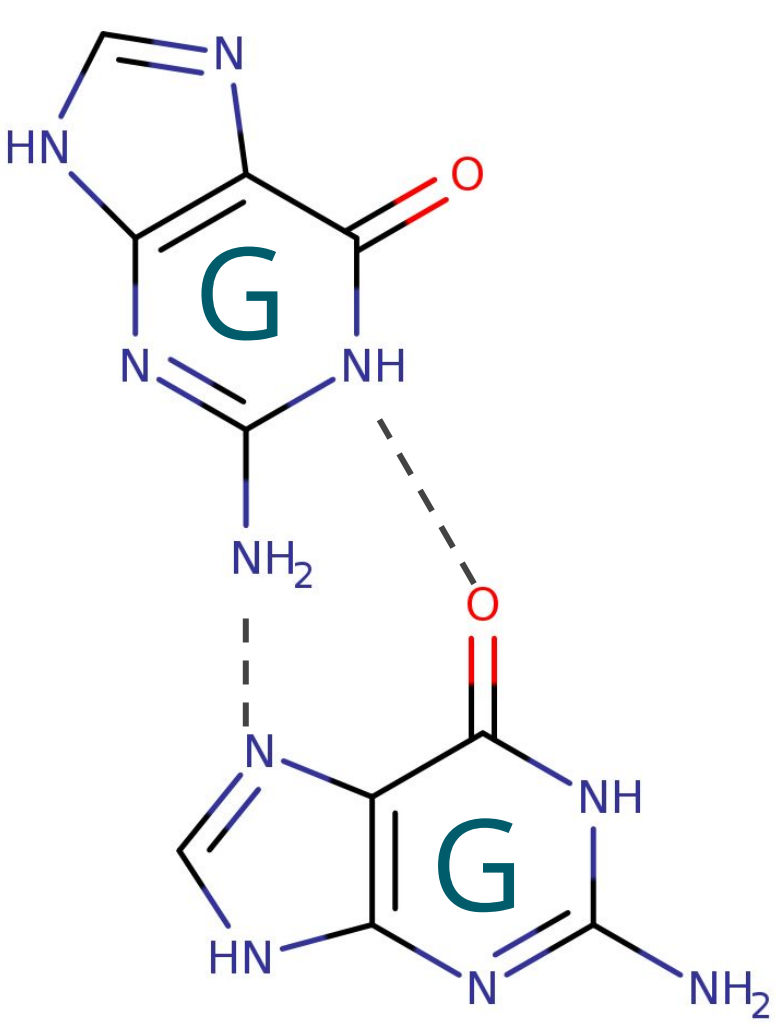
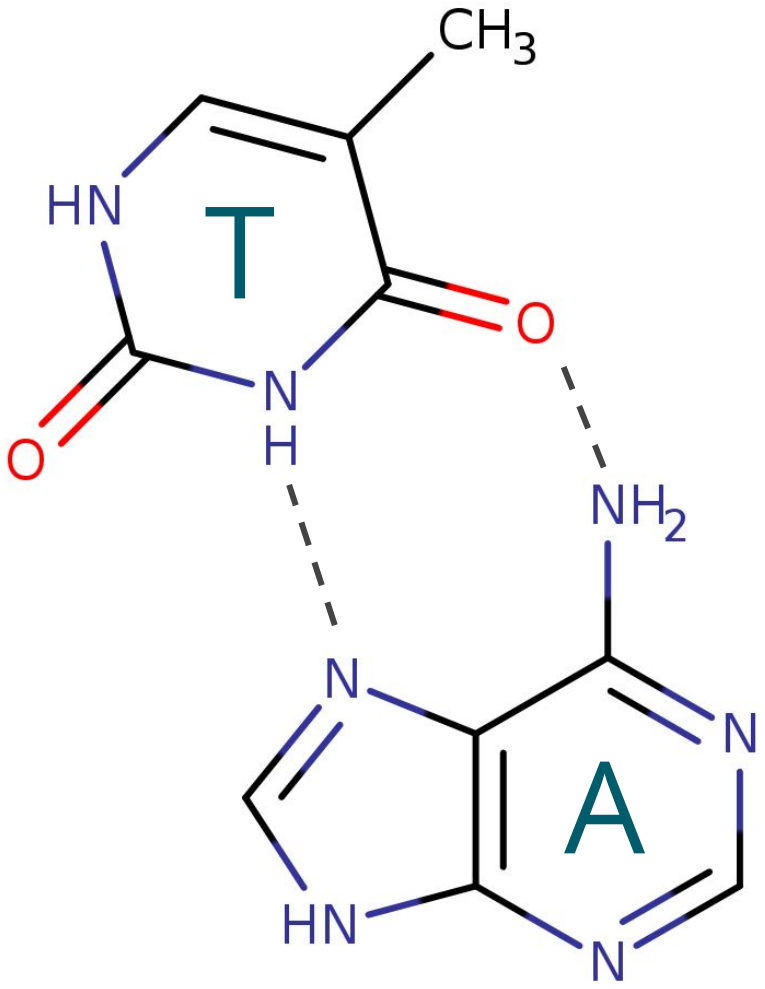


Хугстиновские пары





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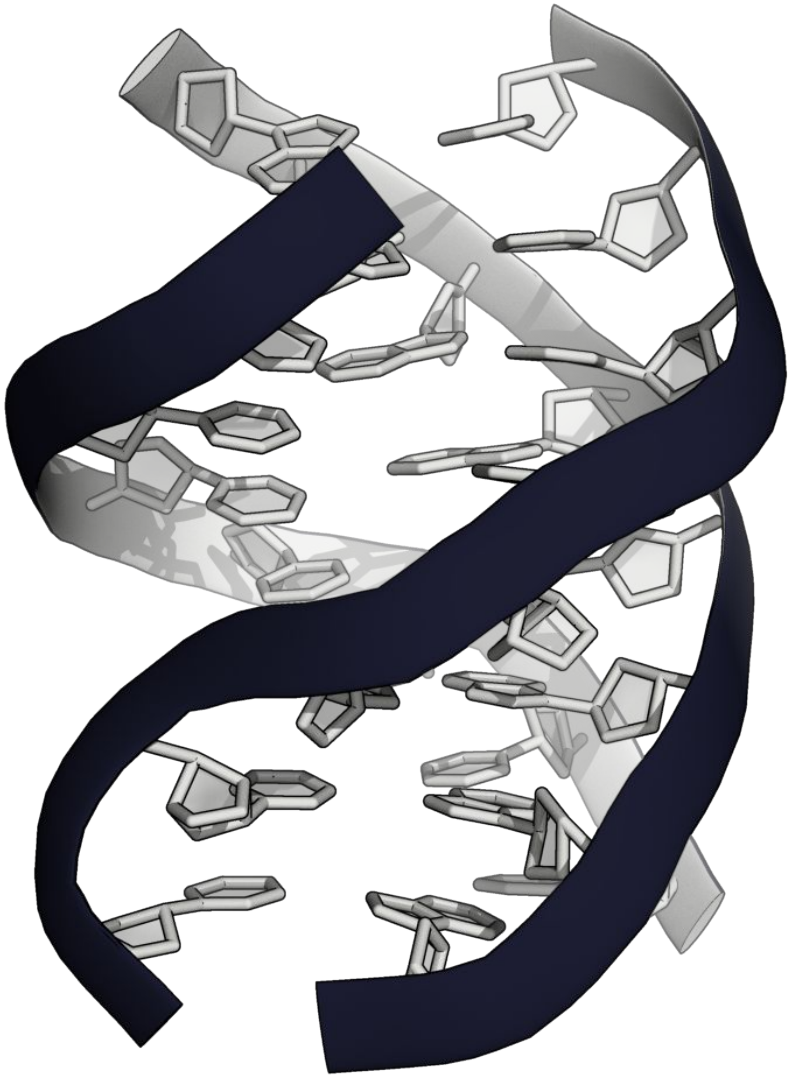
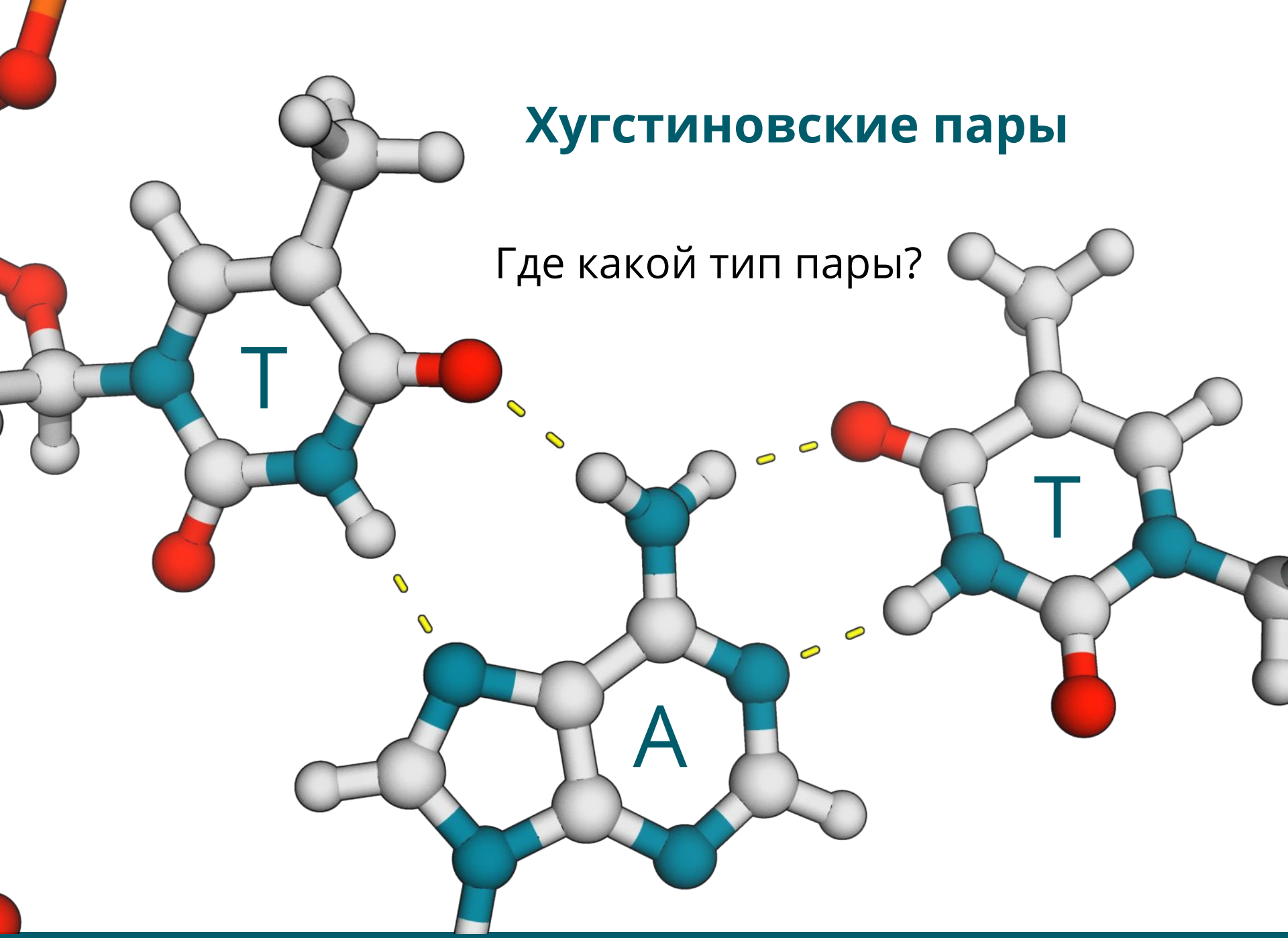
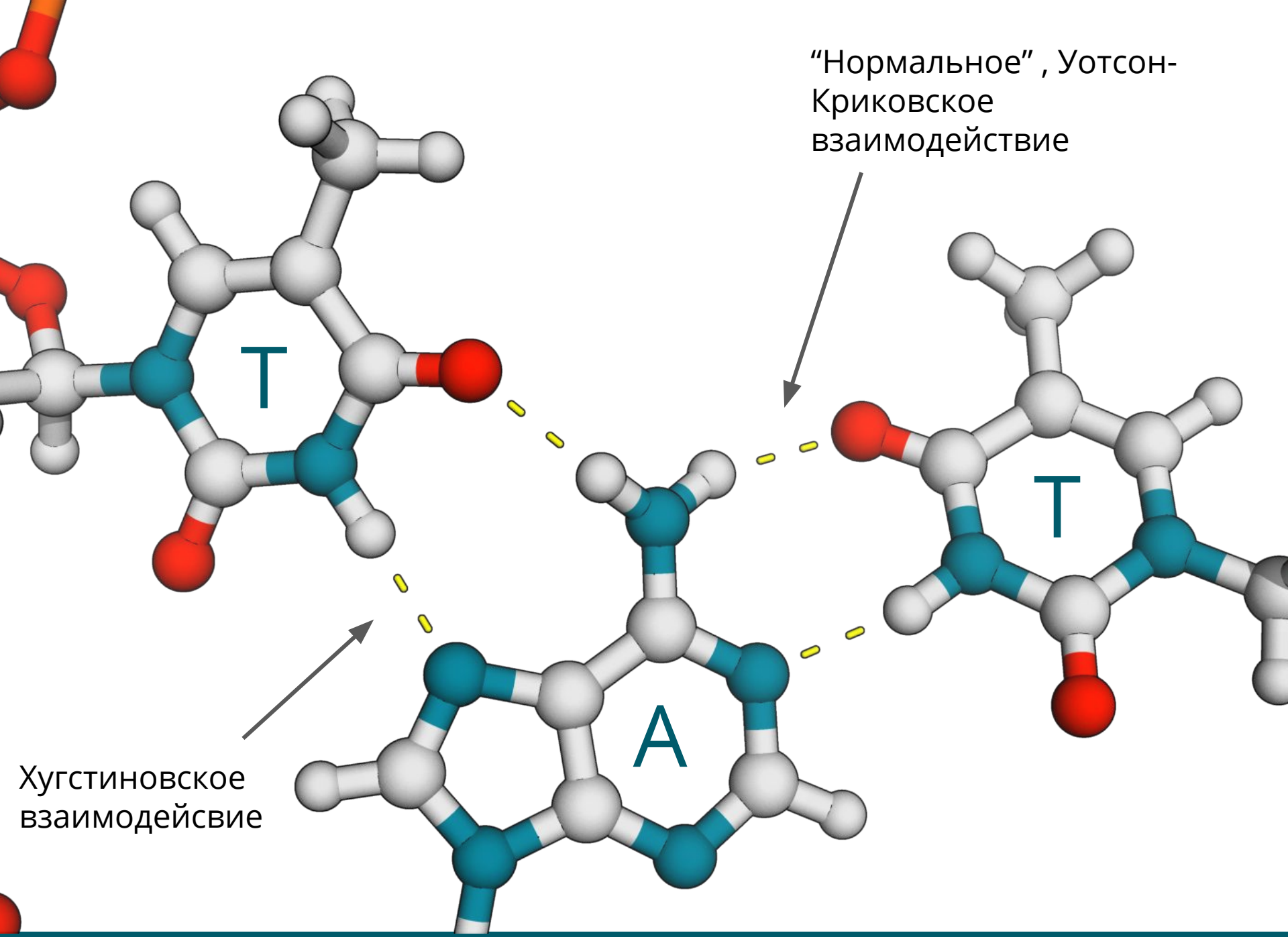


Что не так с этой ДНК?

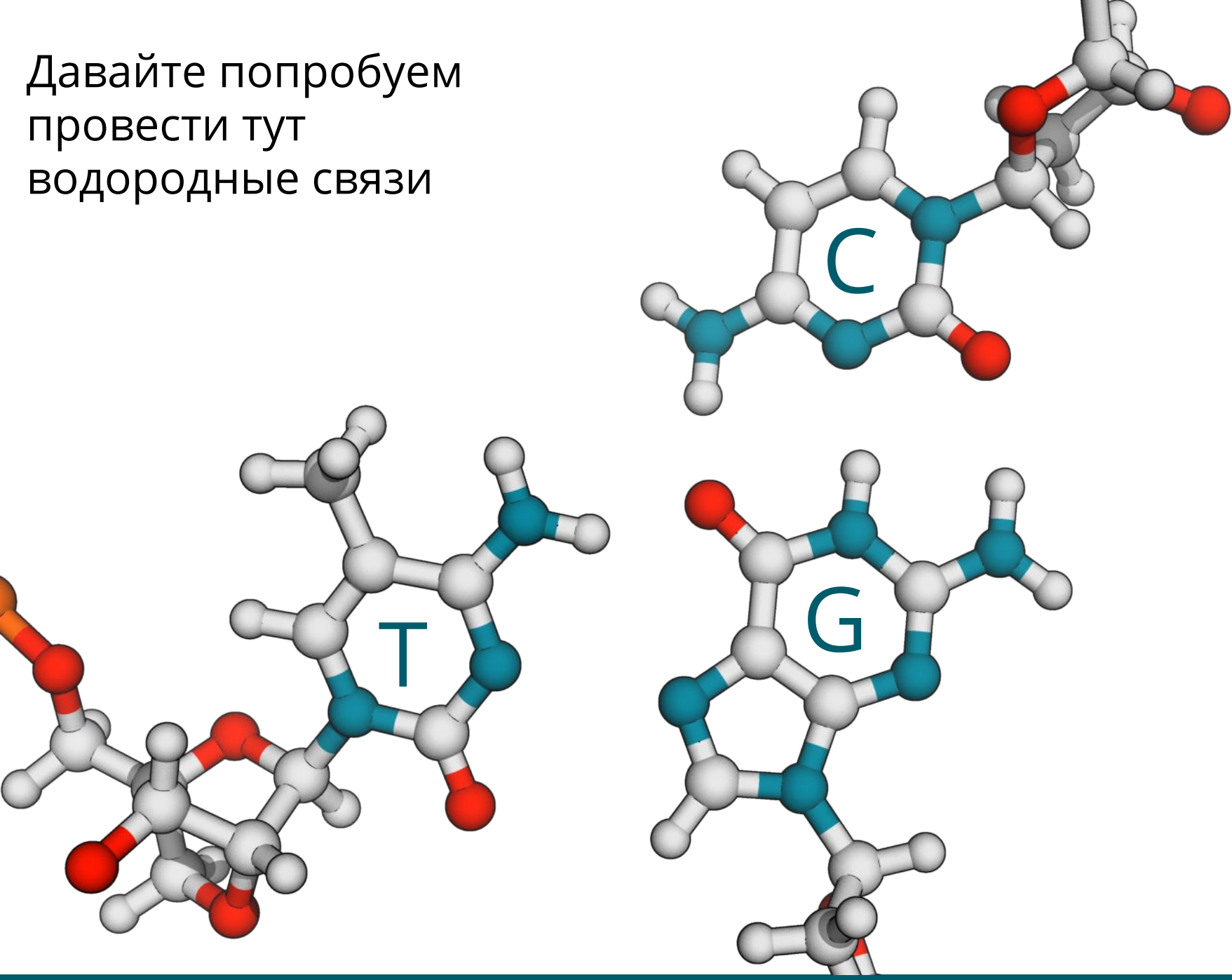
Хугстиновские пары

Где какой тип пары?

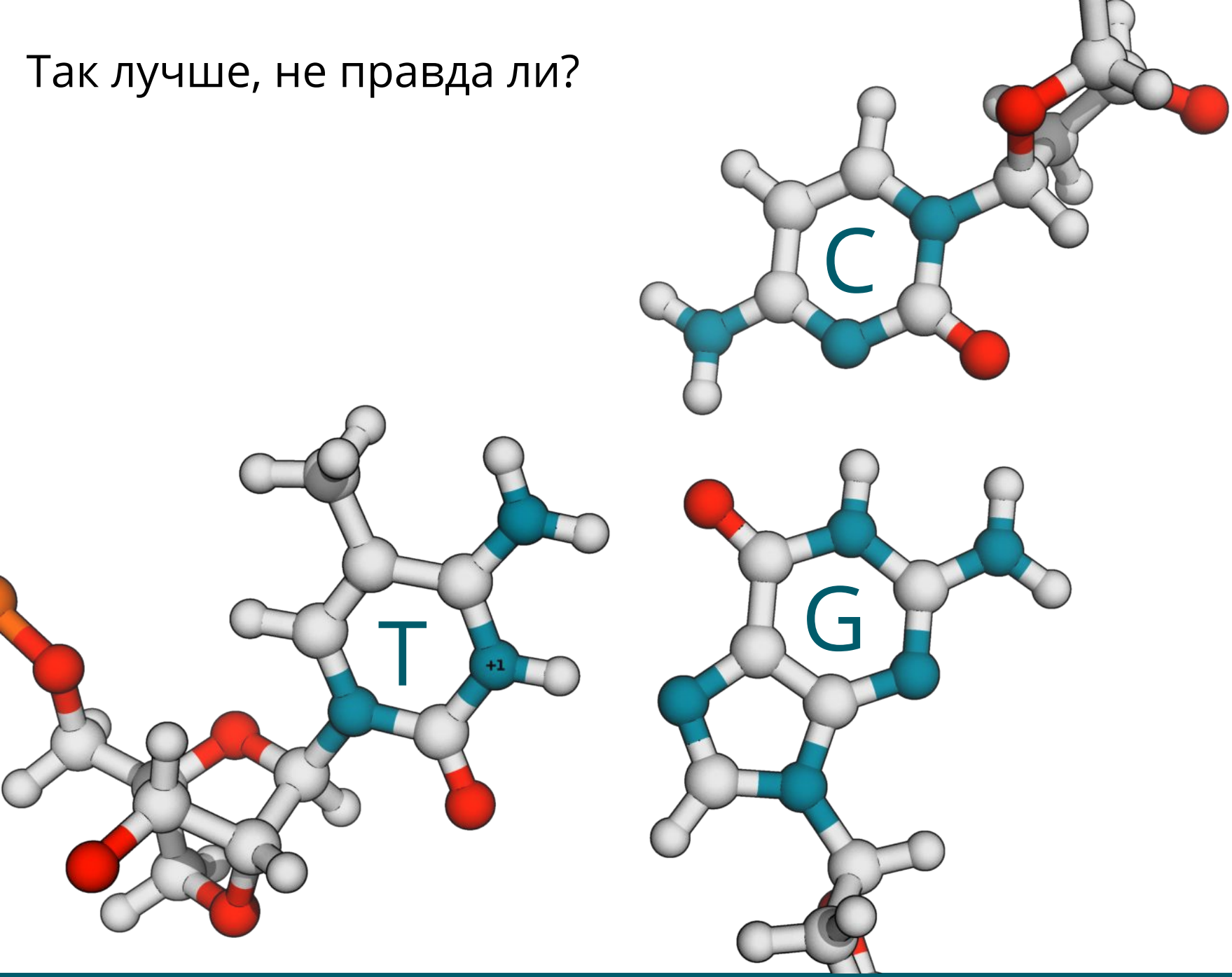


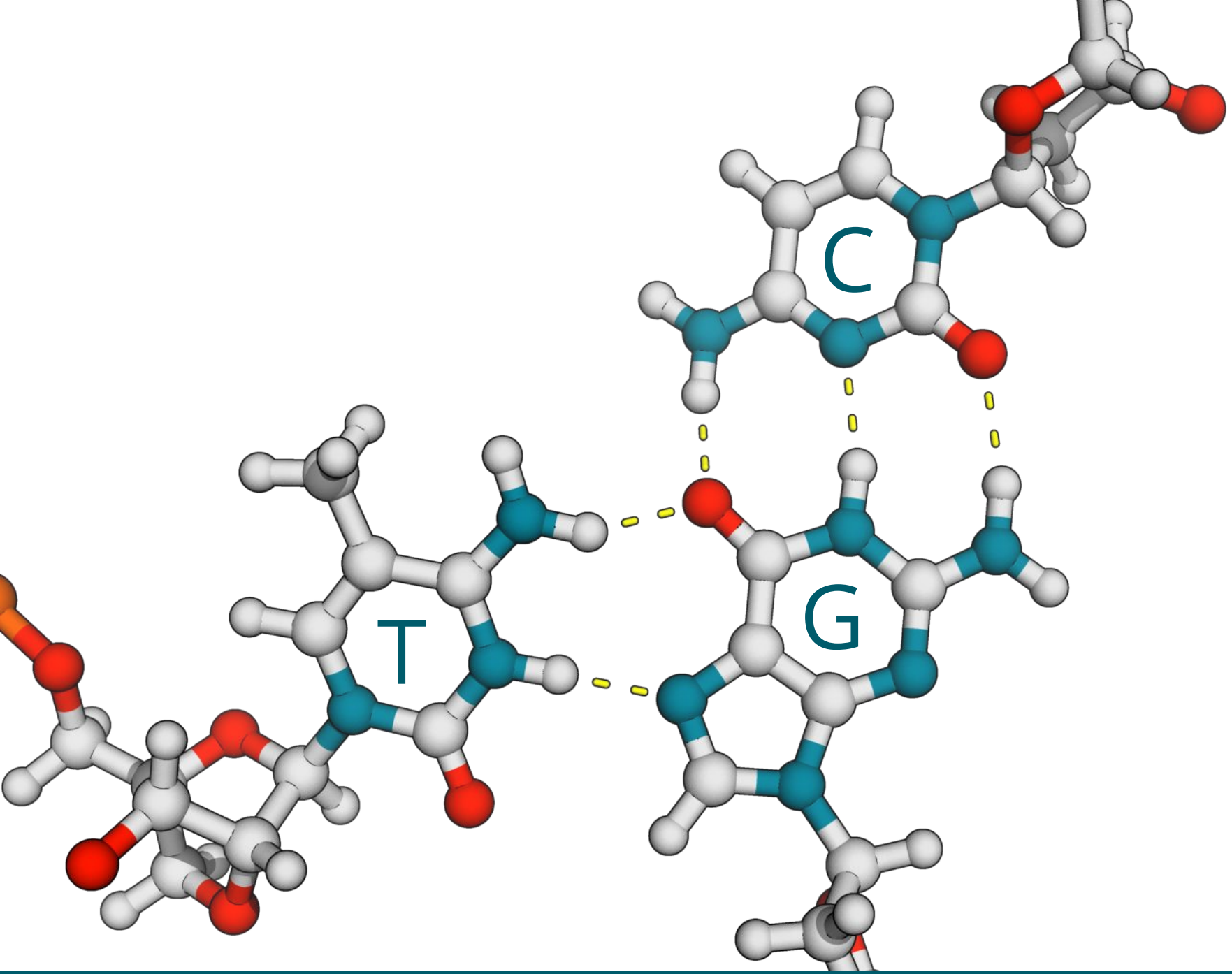

“Нормальное” , Уотсон-Криковское взаимодействие
T
T
A
Хугстиновское взаимодейсвие

Давайте попробуем провести тут водородные связи

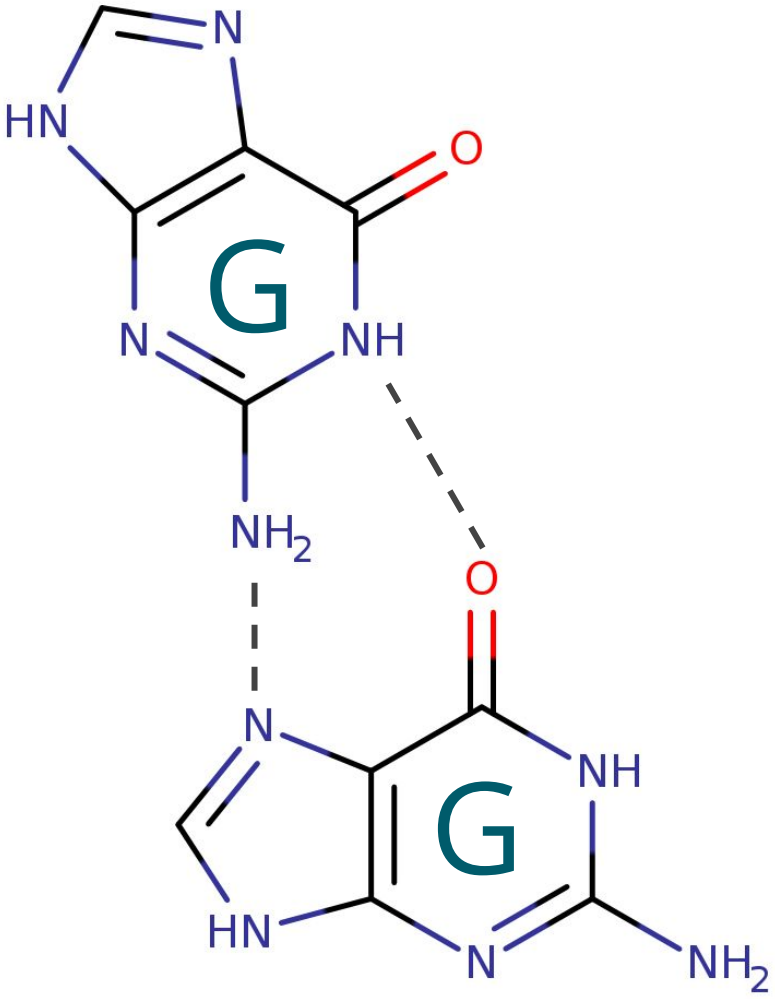


Так лучше, не правда ли?



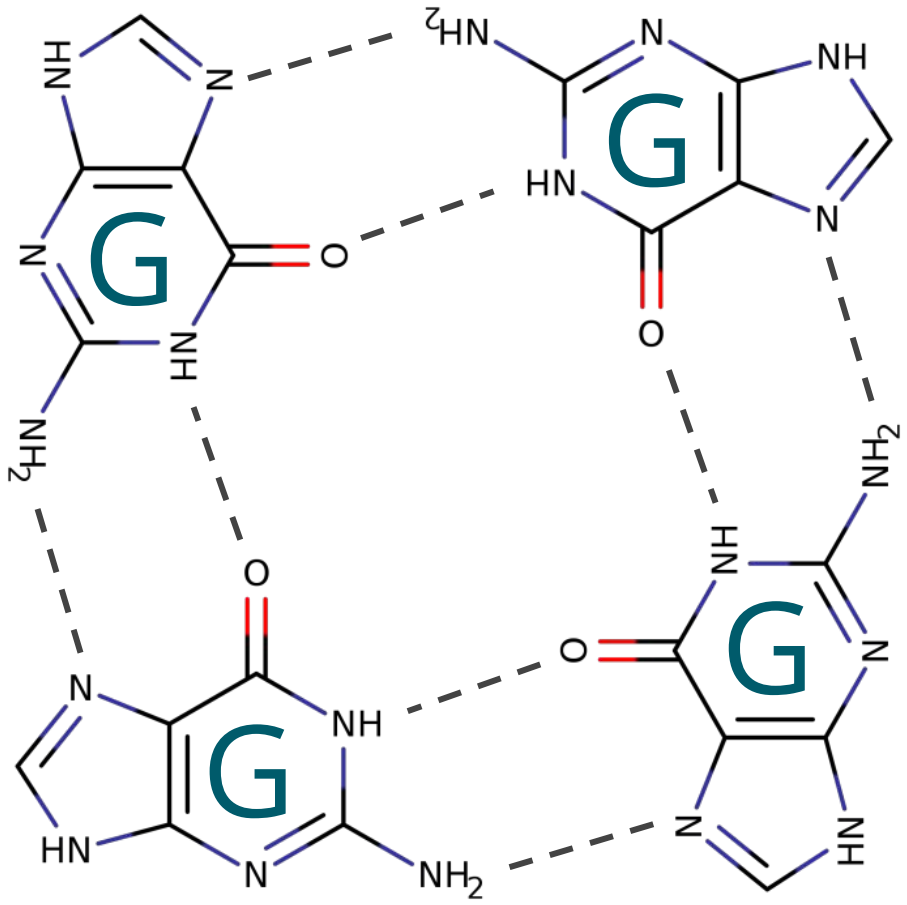

C
T
G

Ещё раз пара GG

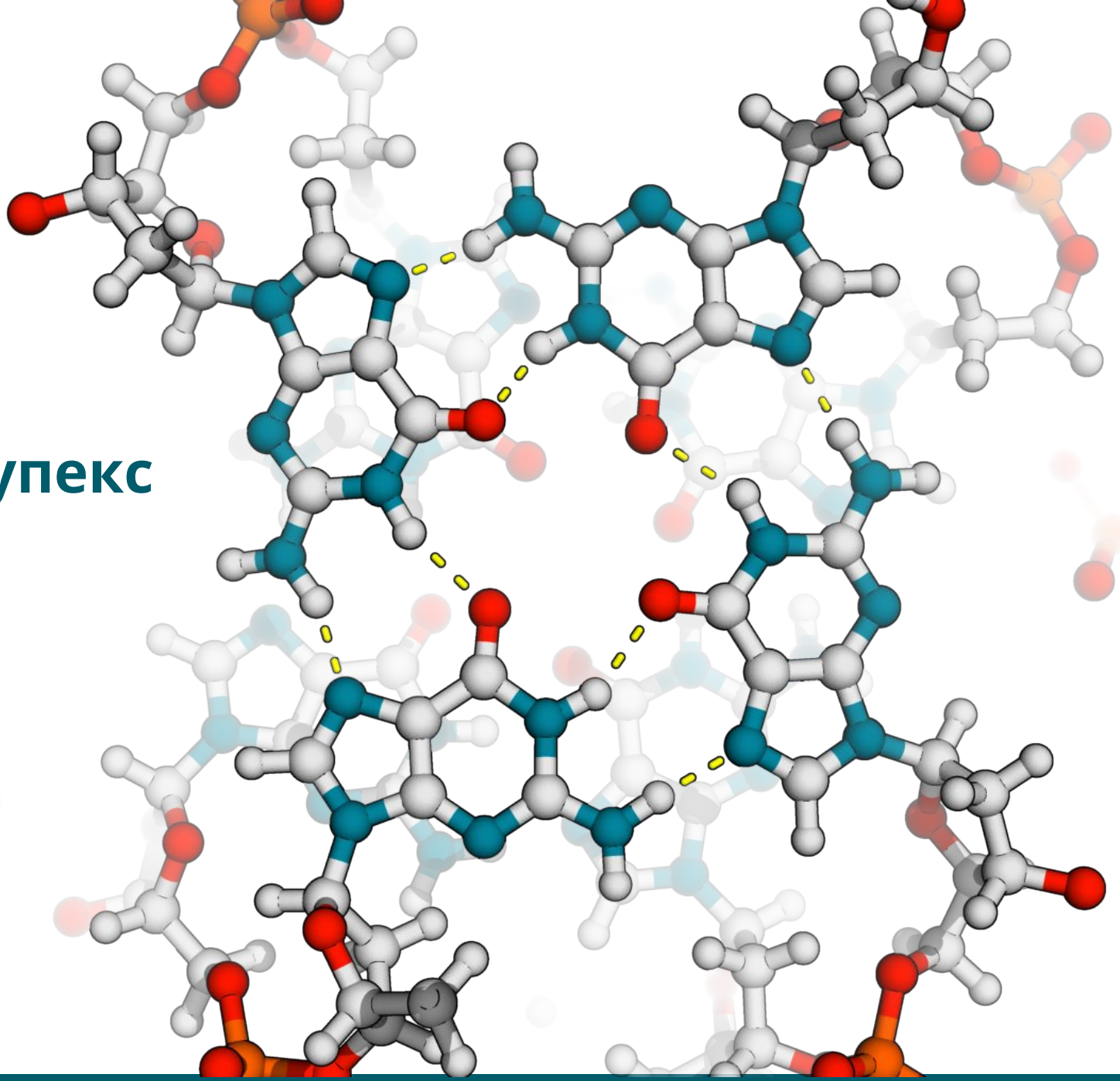


Нельзя ли это продолжить дальше?

G-квартет

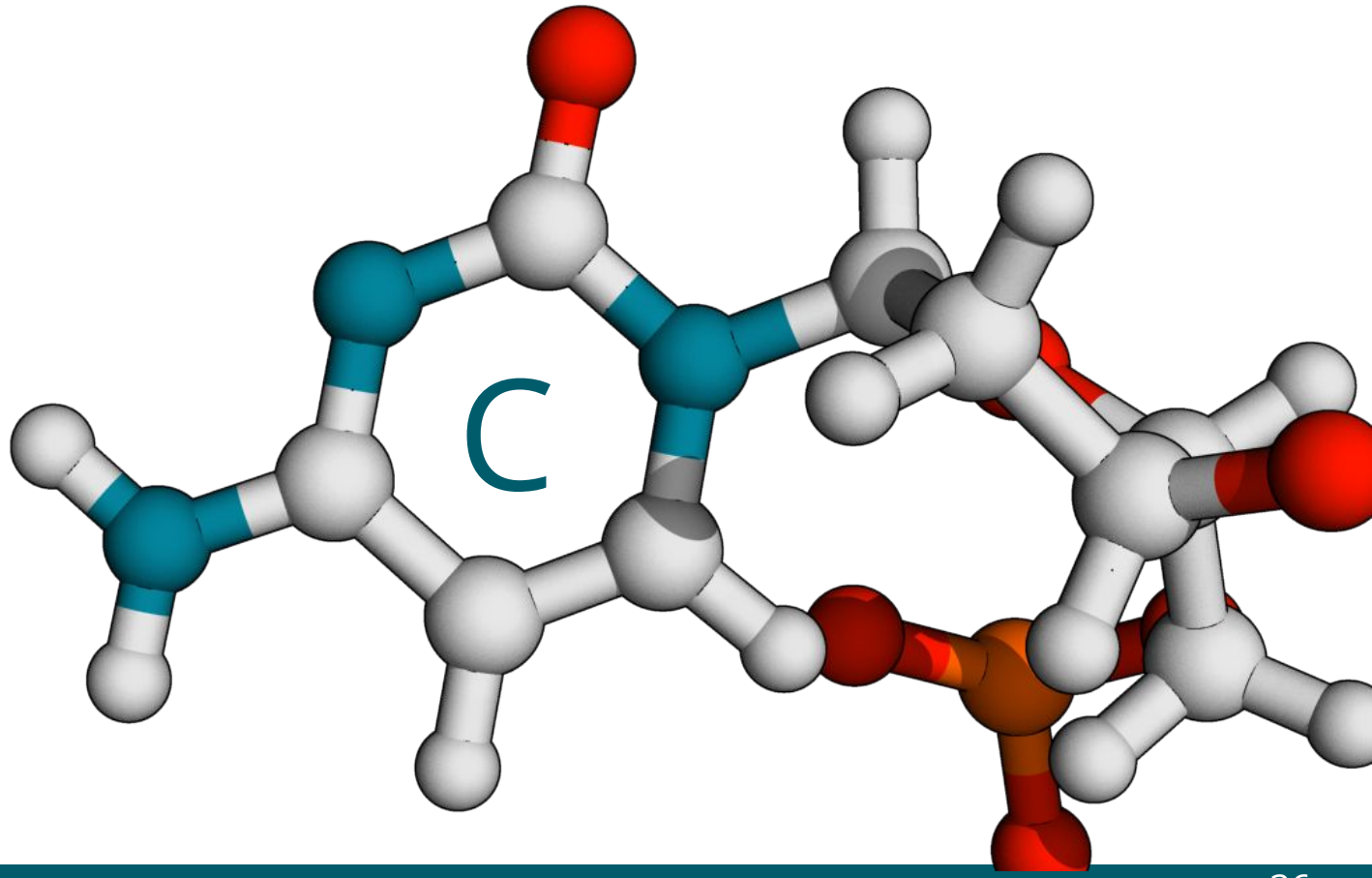


G-квадрупекс



G-квадрупекс

Цитозины



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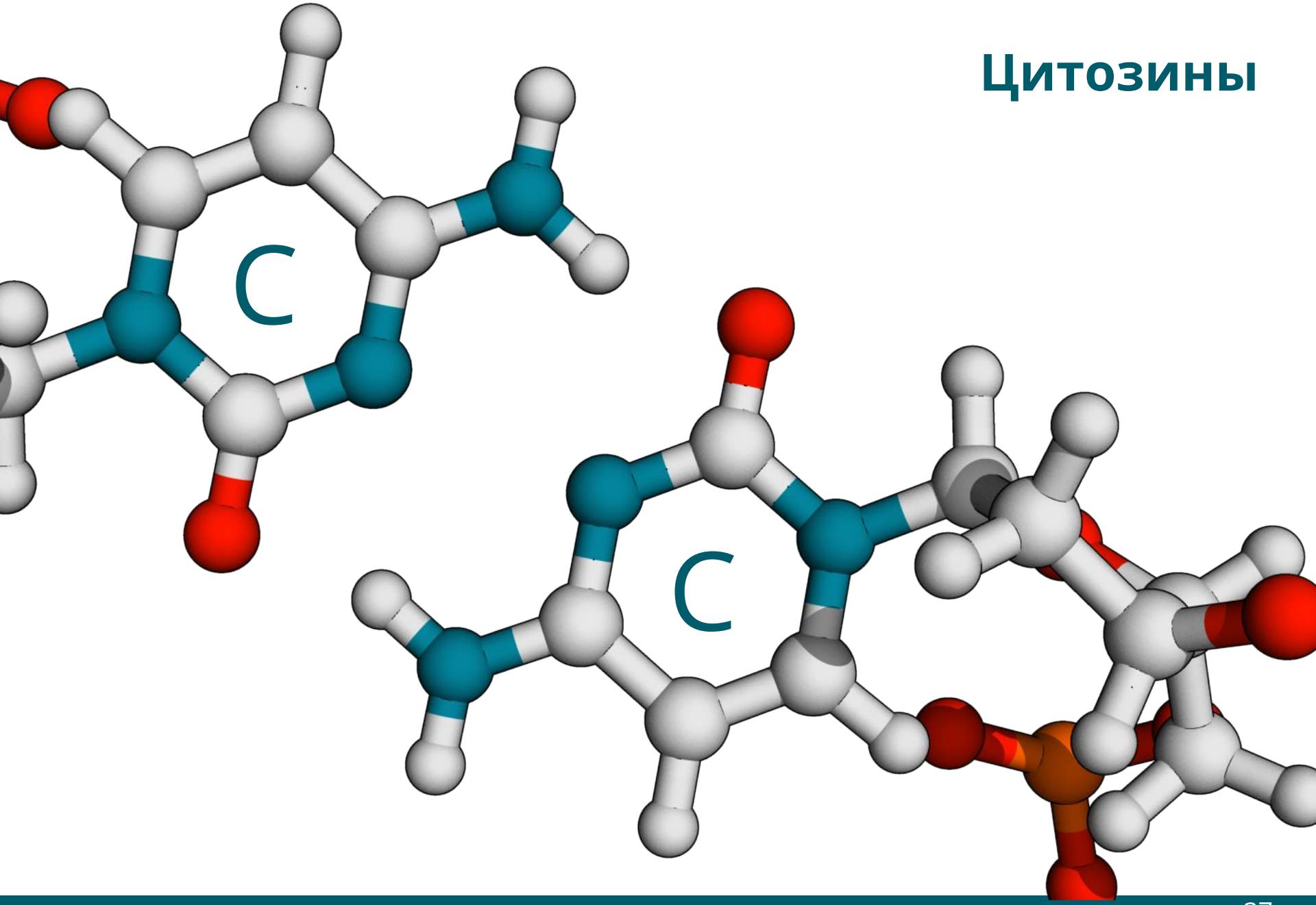

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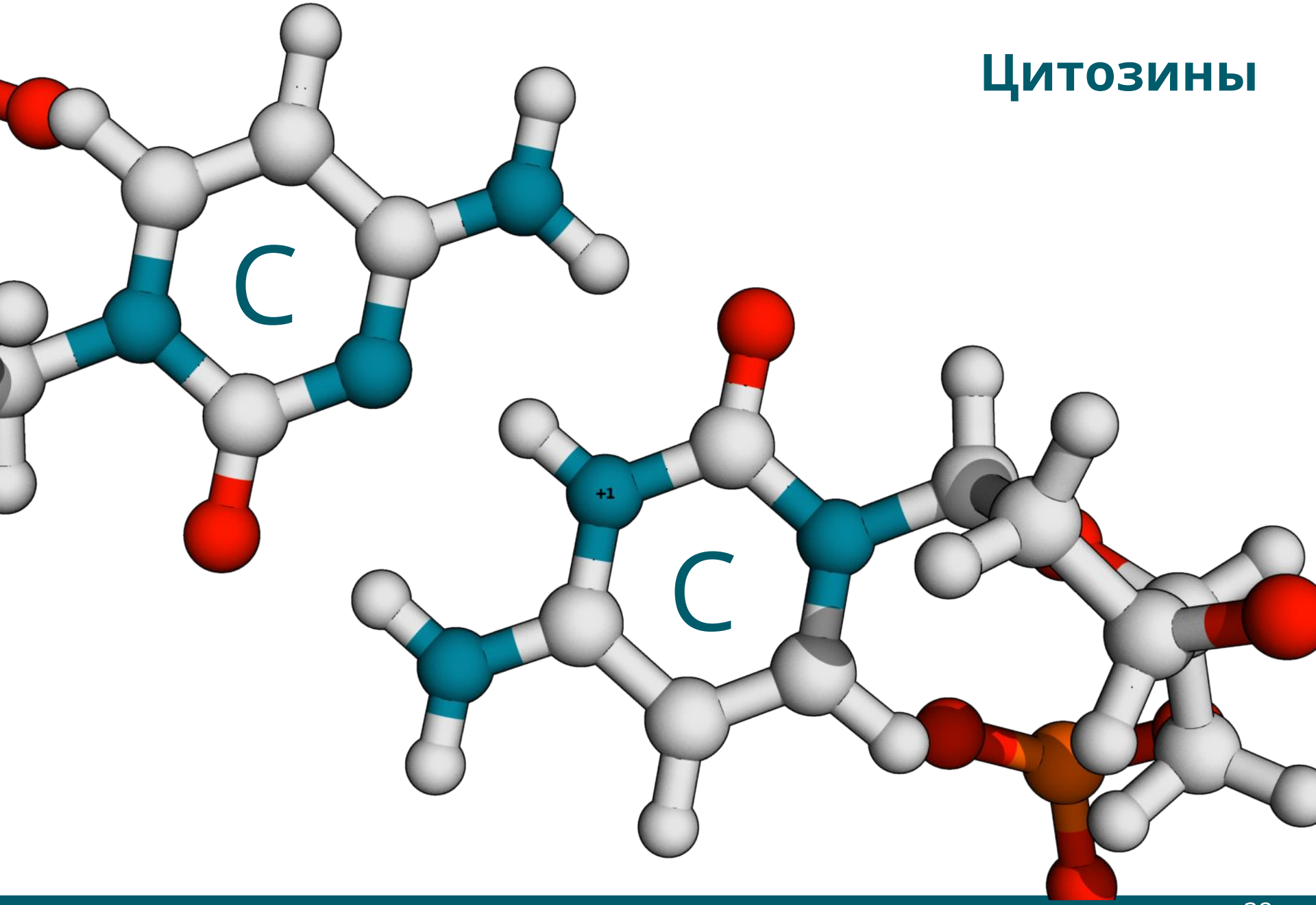

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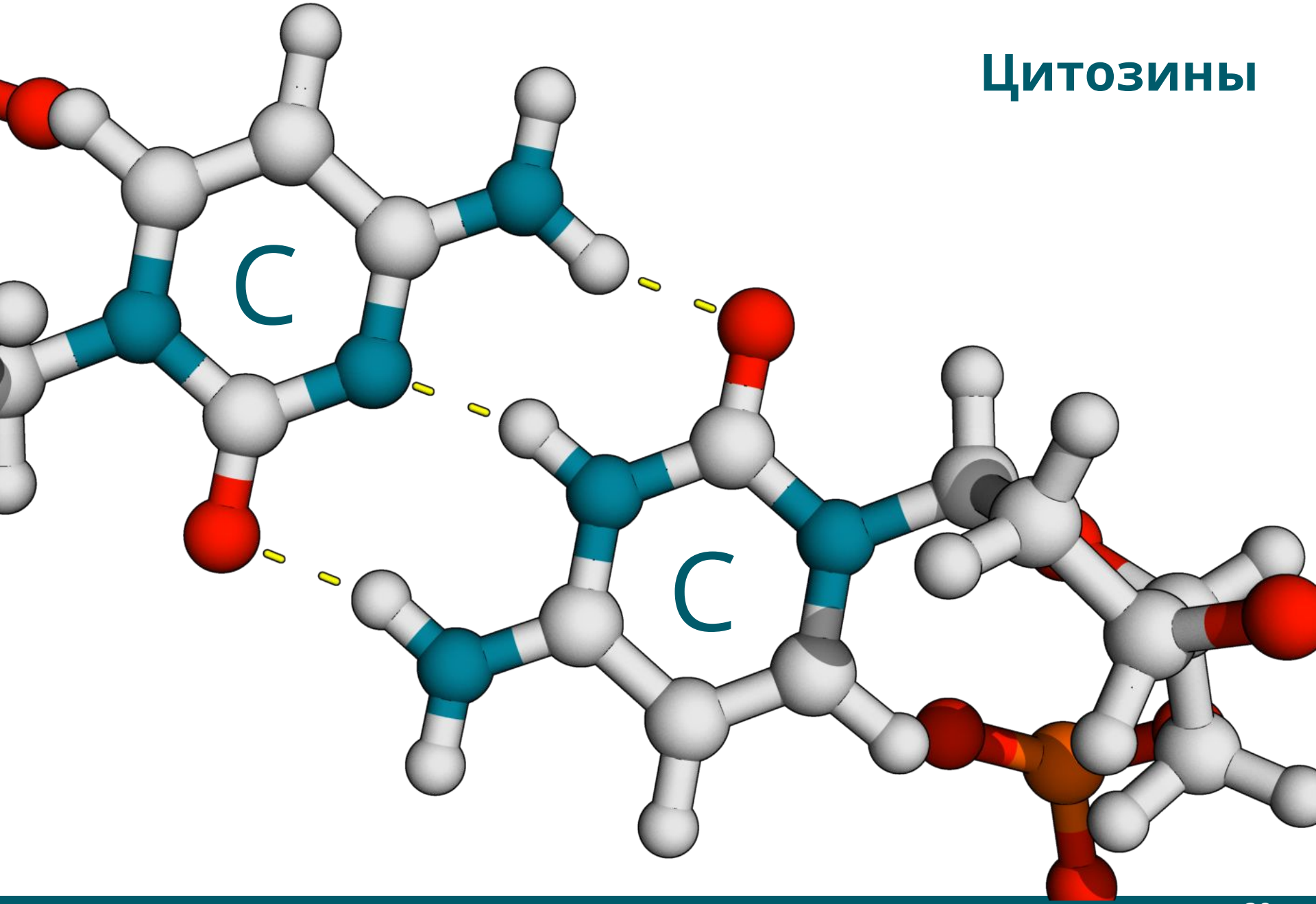
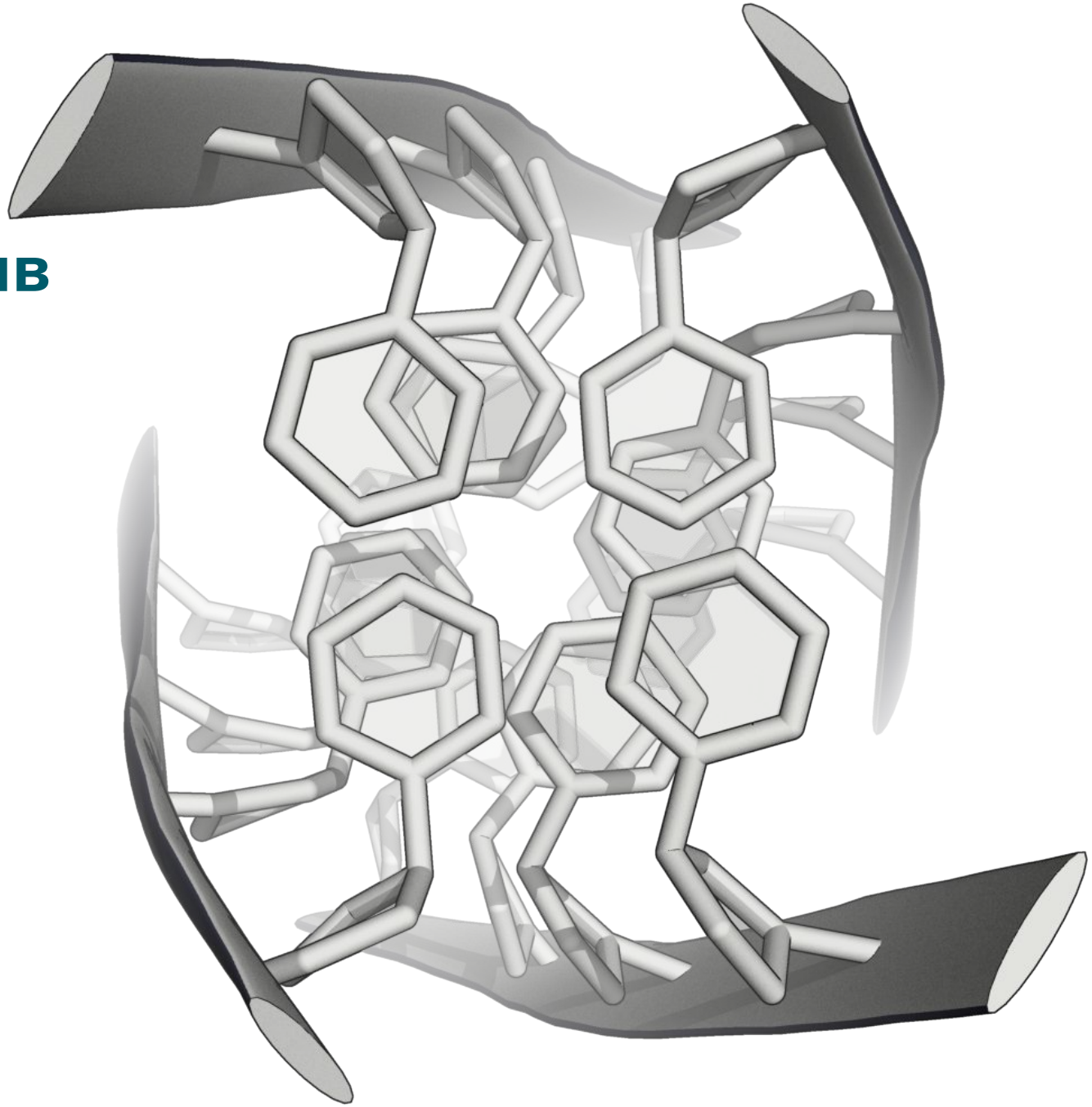
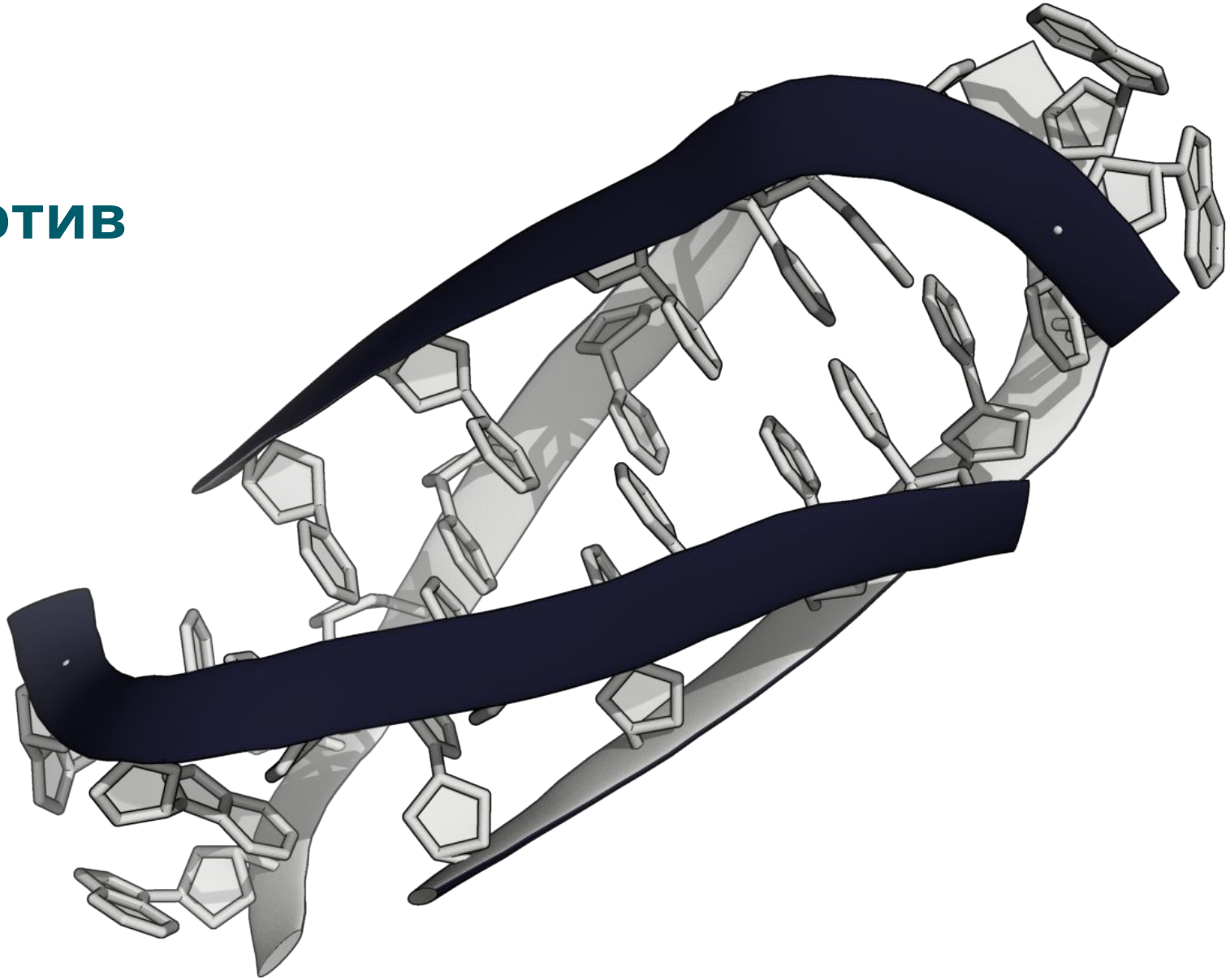


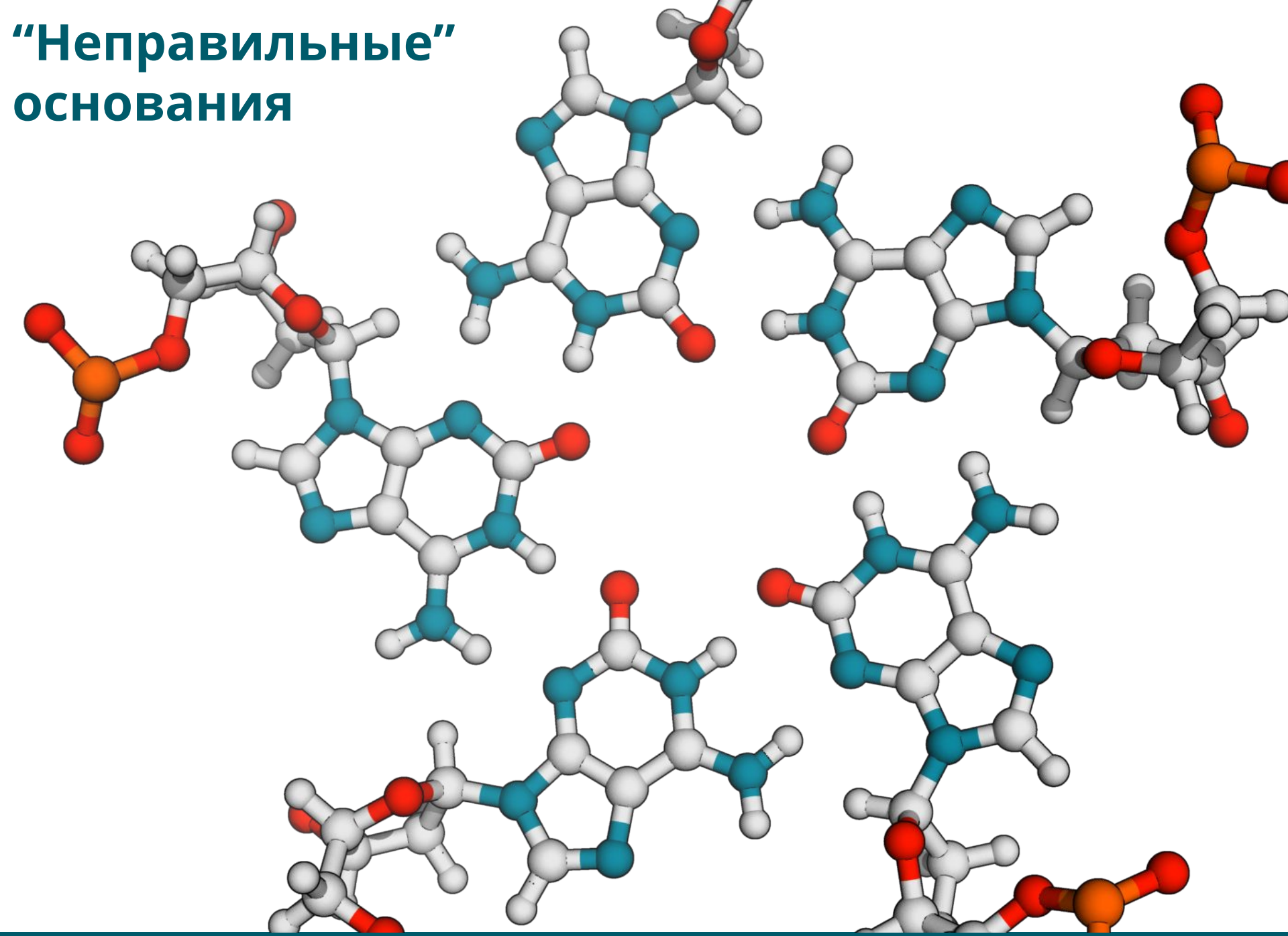
i-мотив



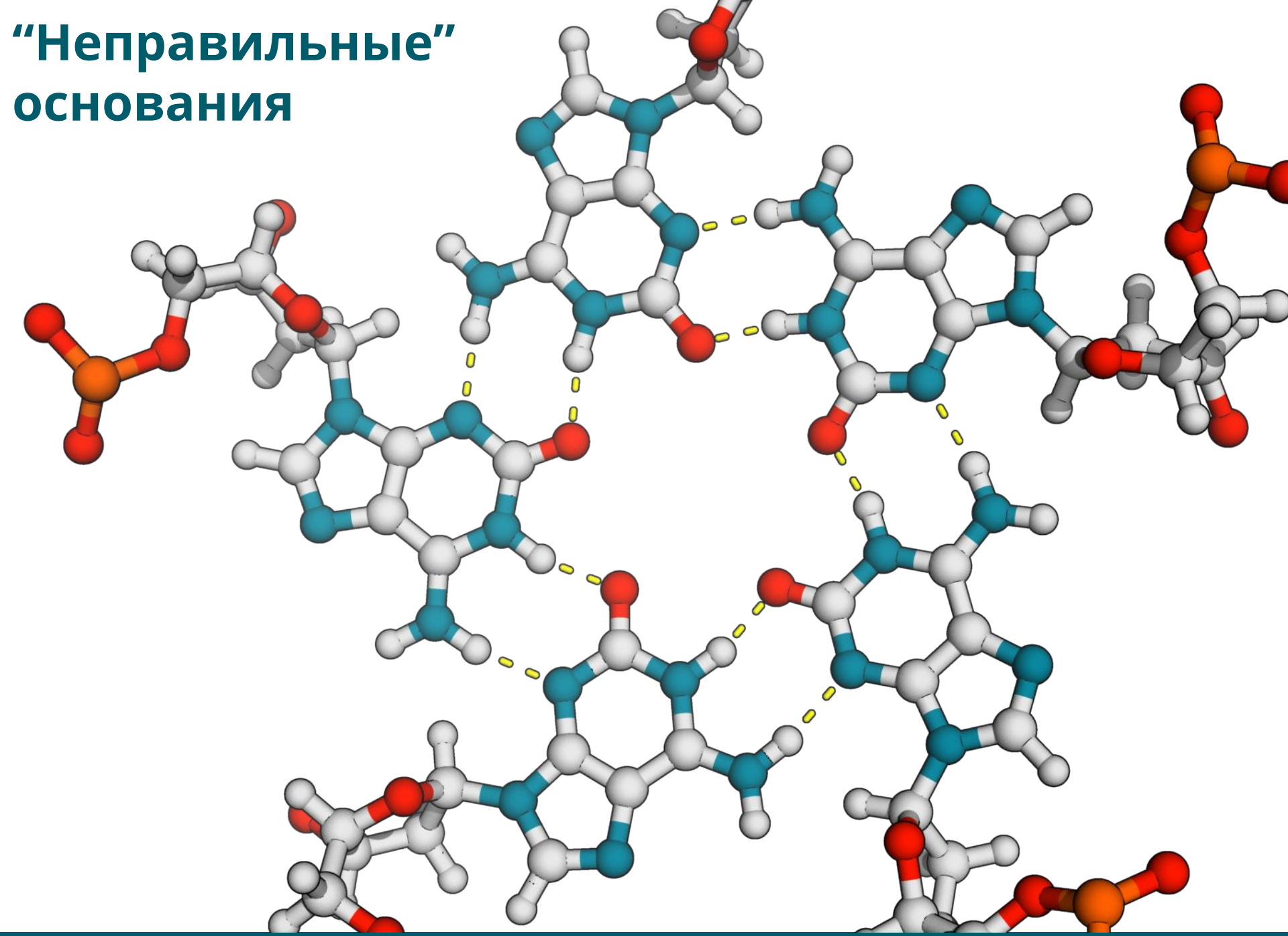
i-мотив



“Неправильные” основания



“Неправильные” основания



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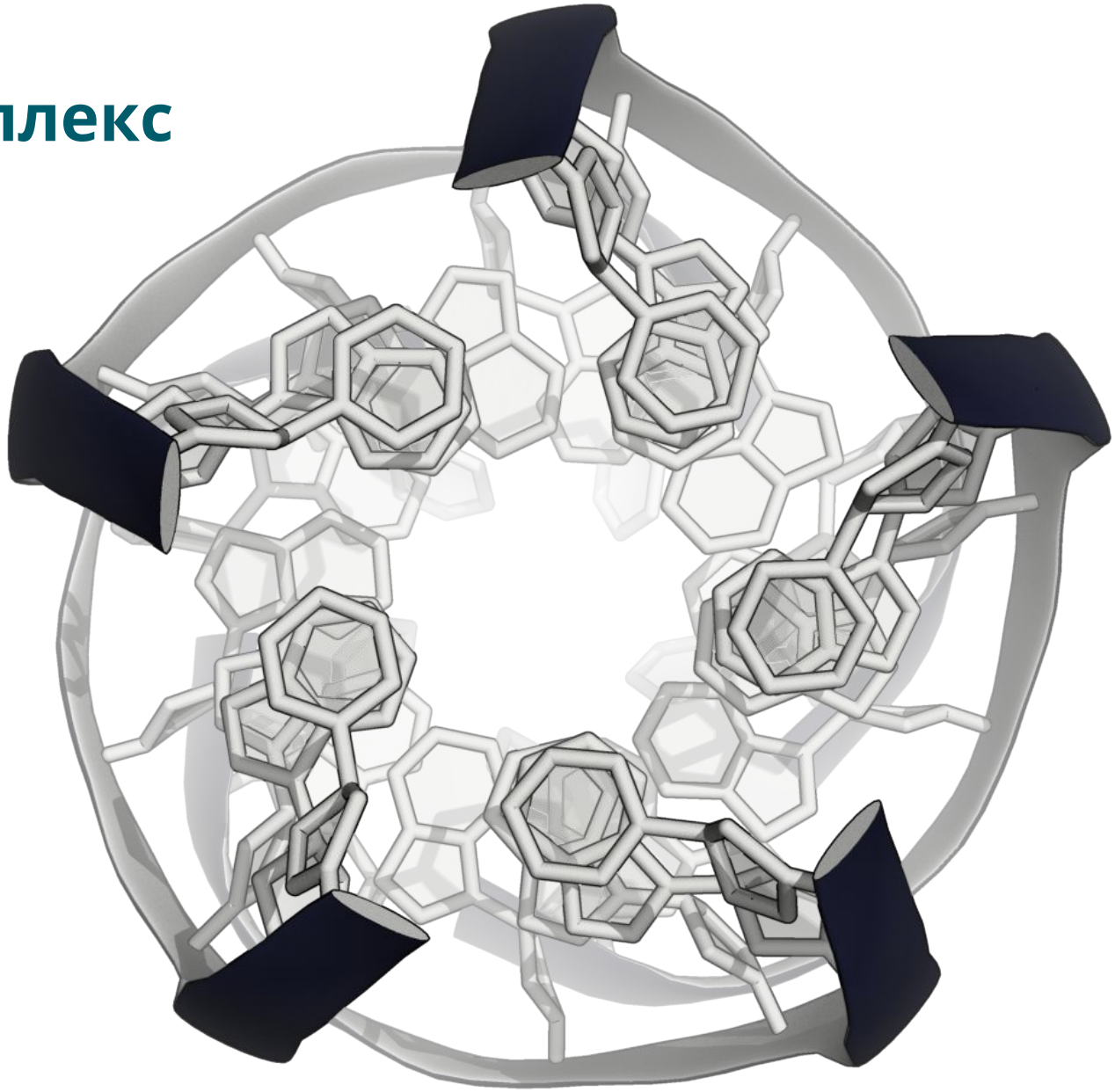

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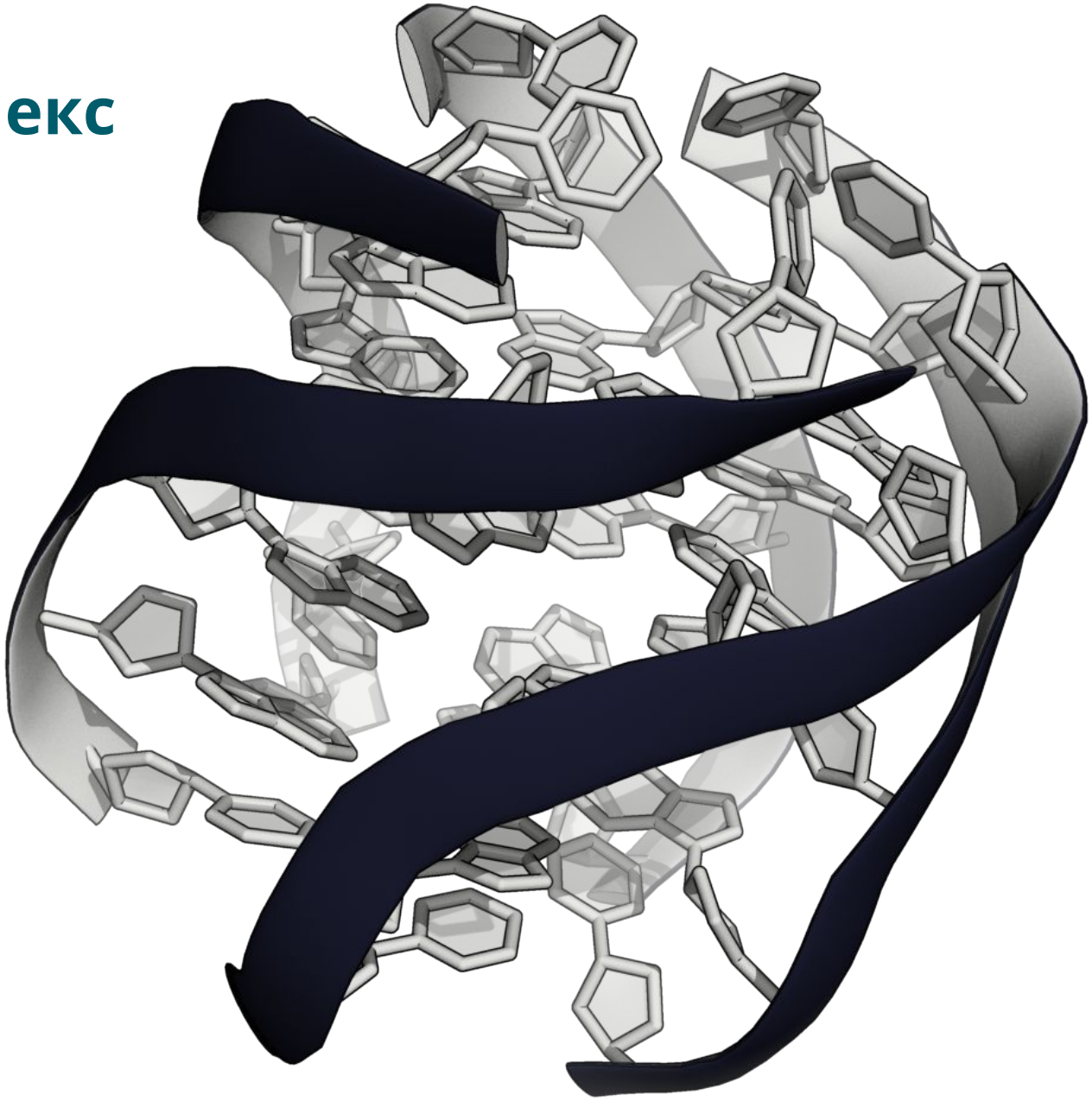
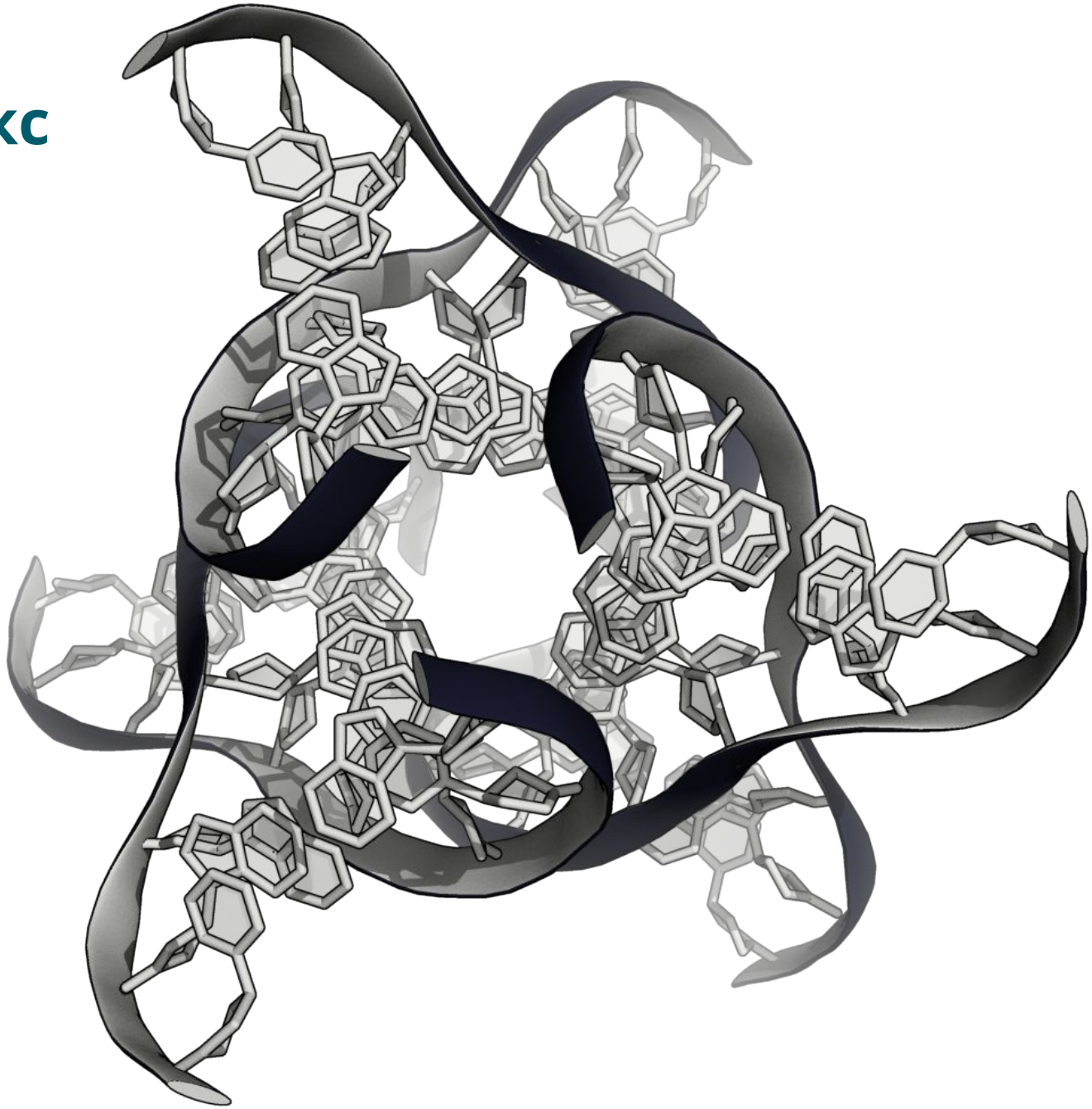
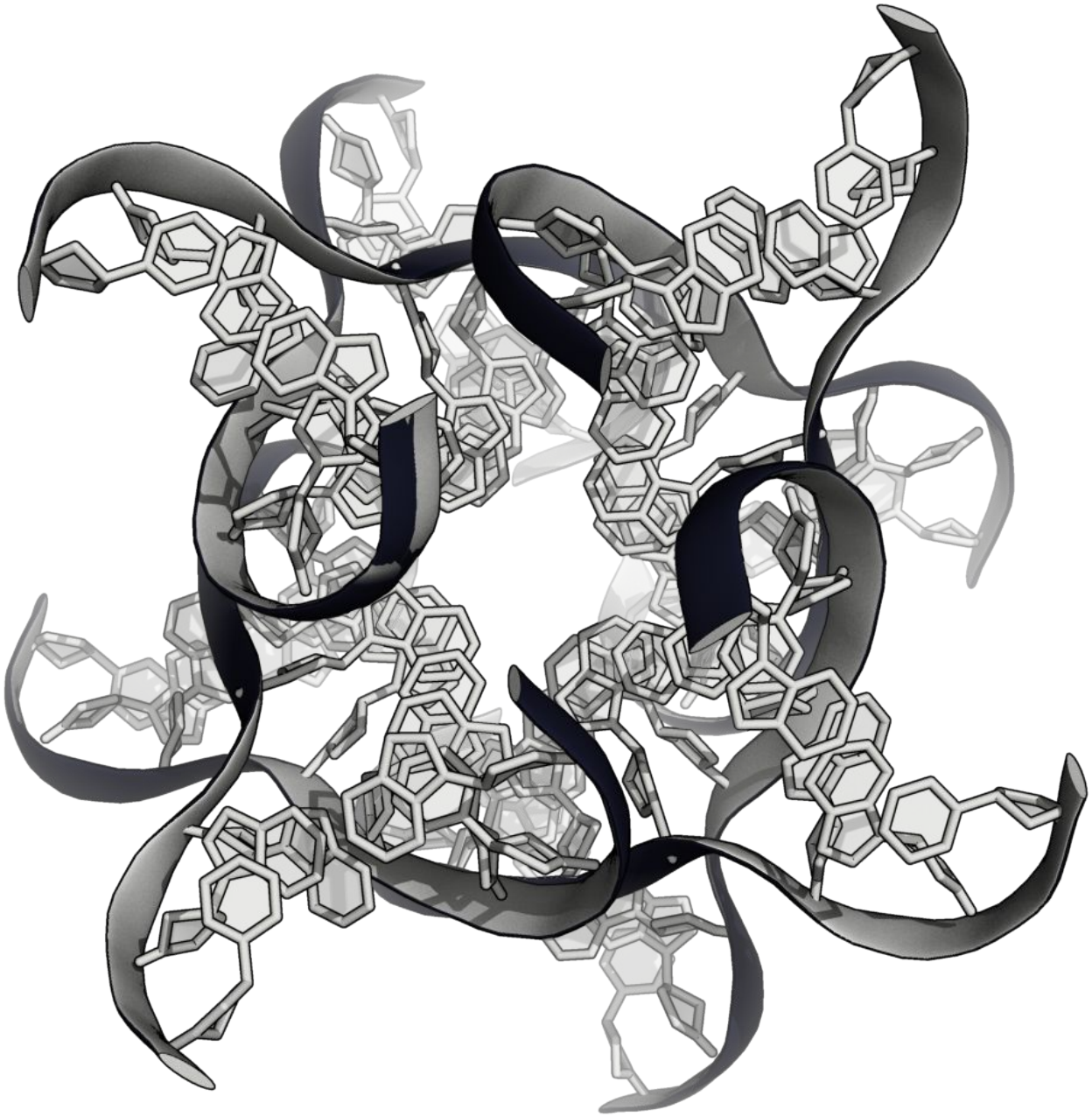
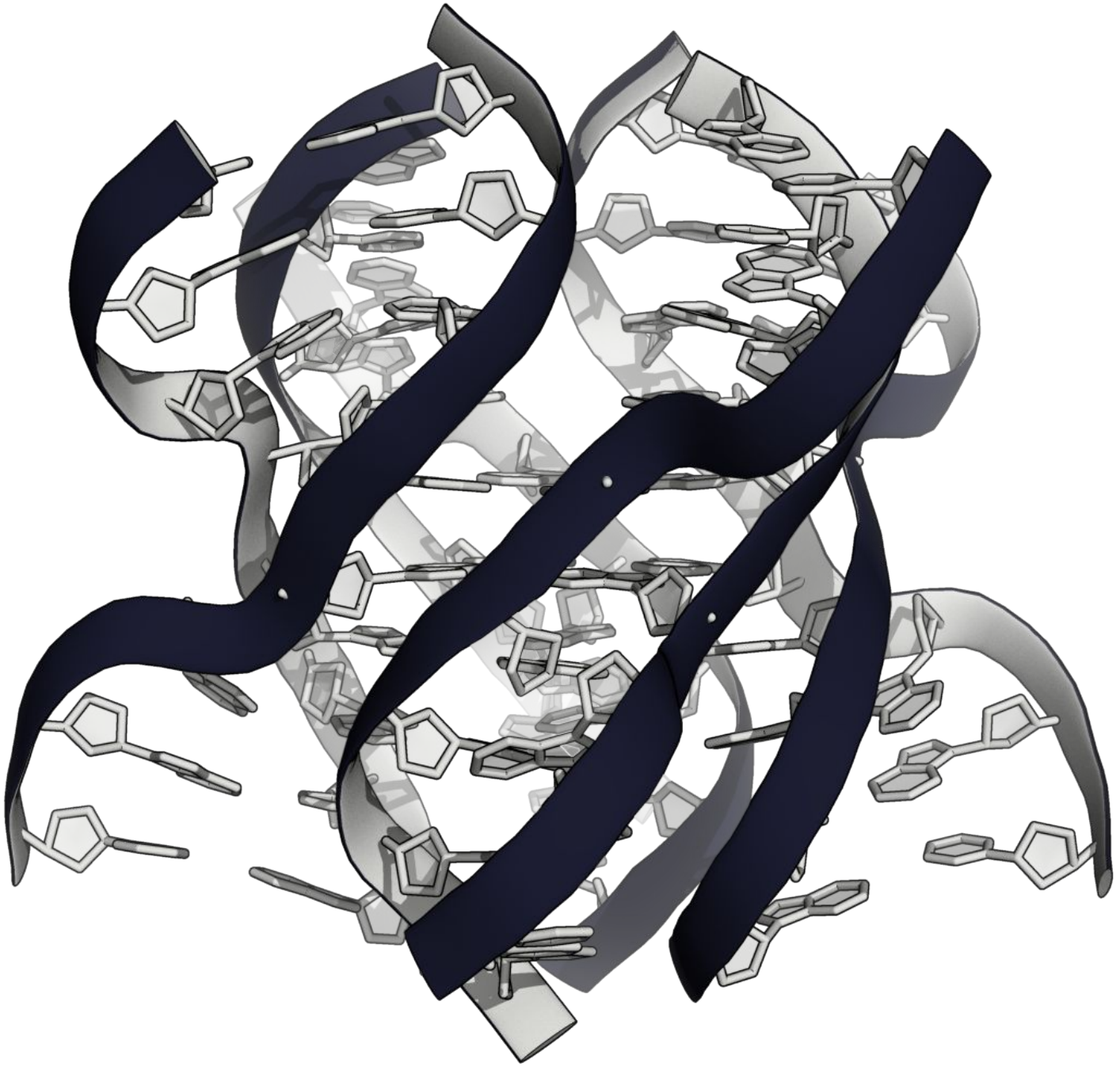


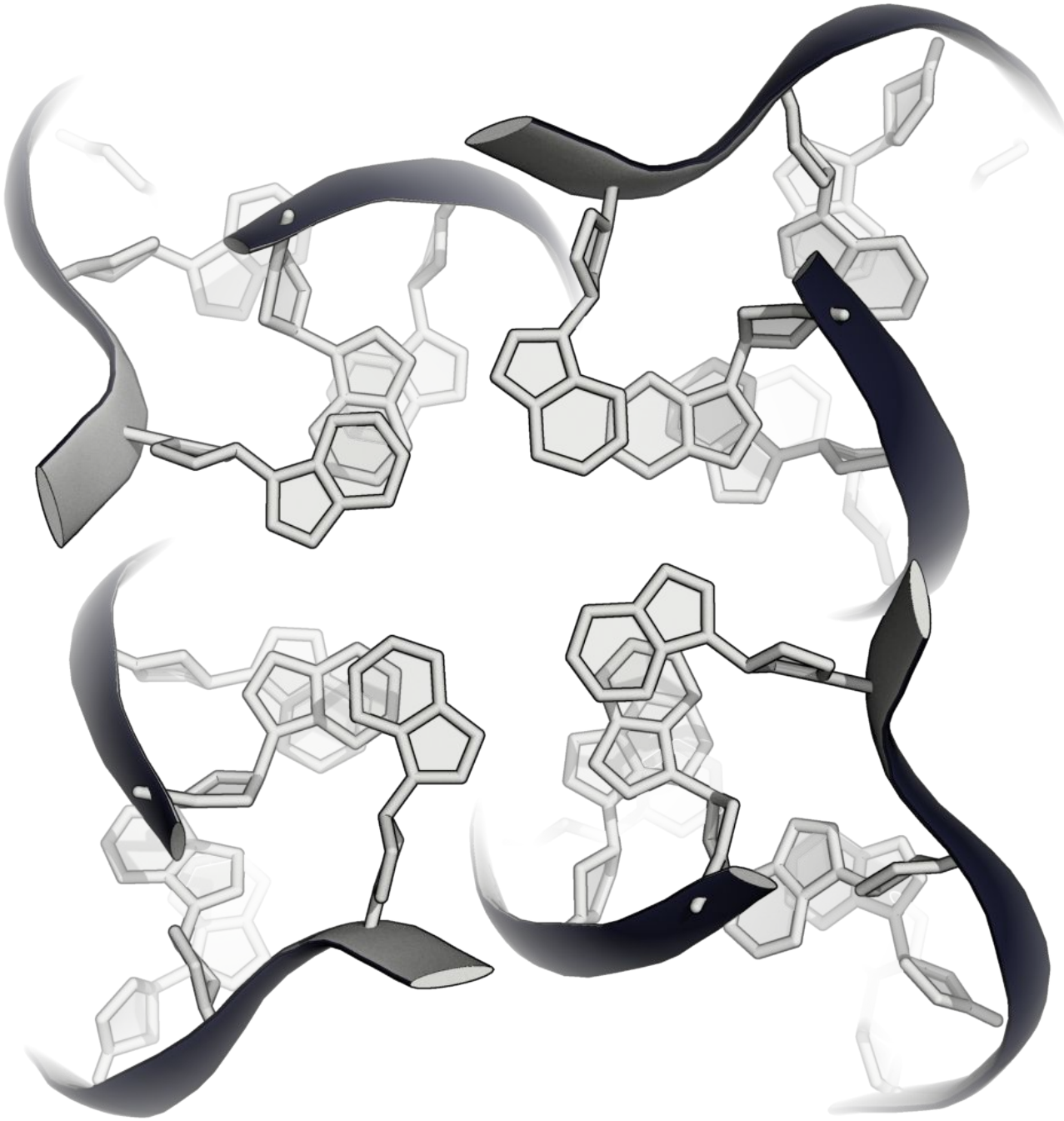
?-плекс

Гексаплекс

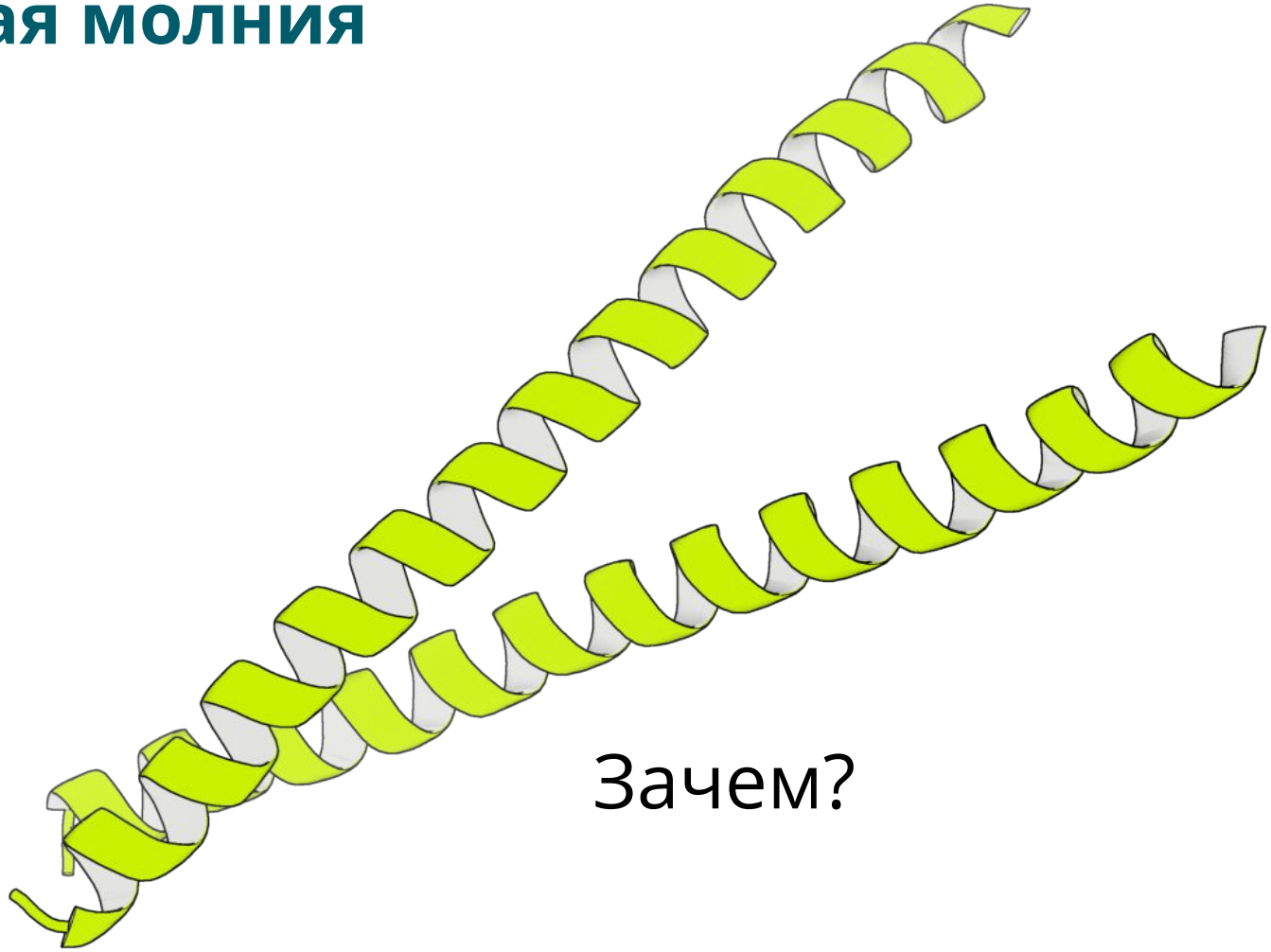






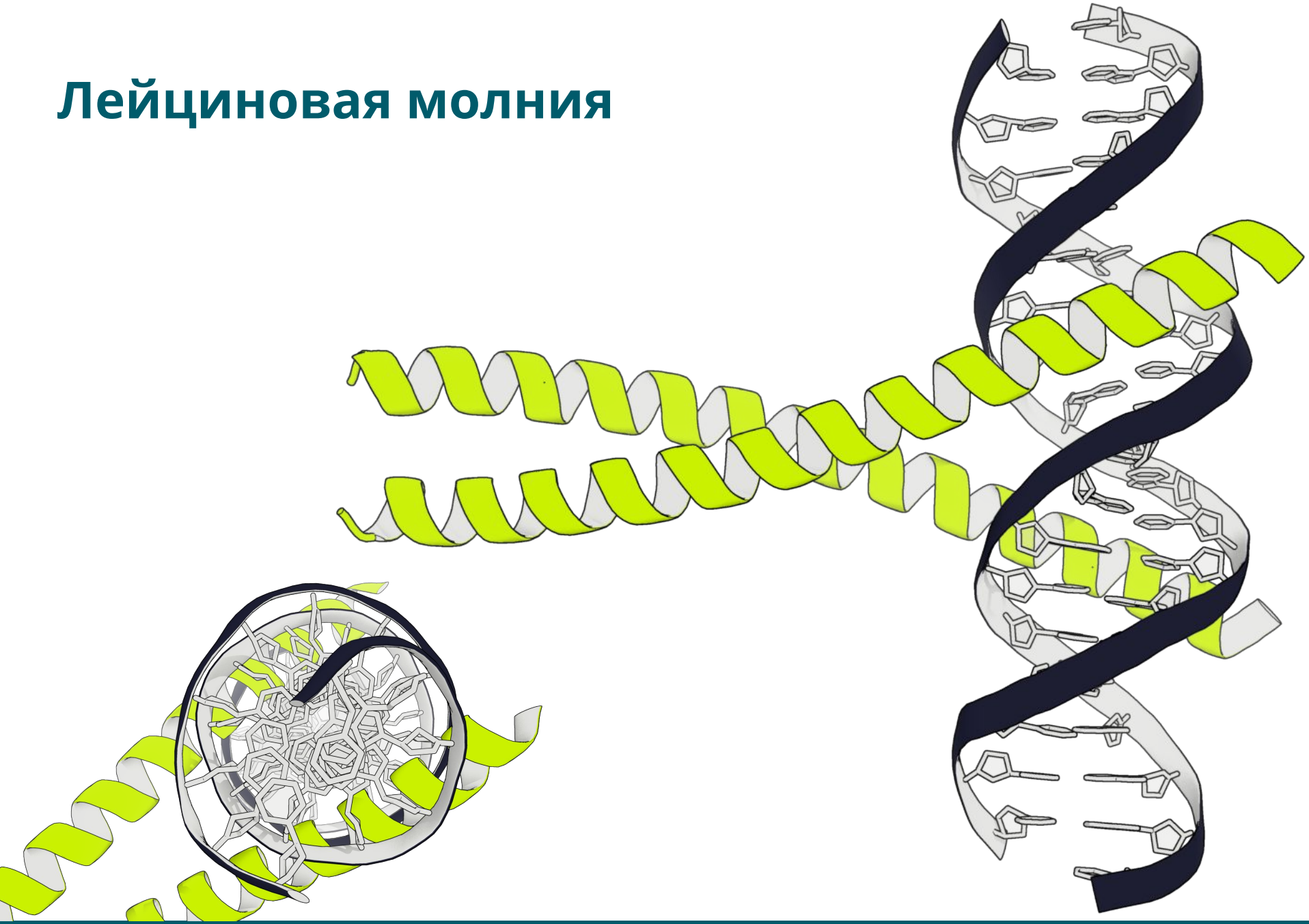


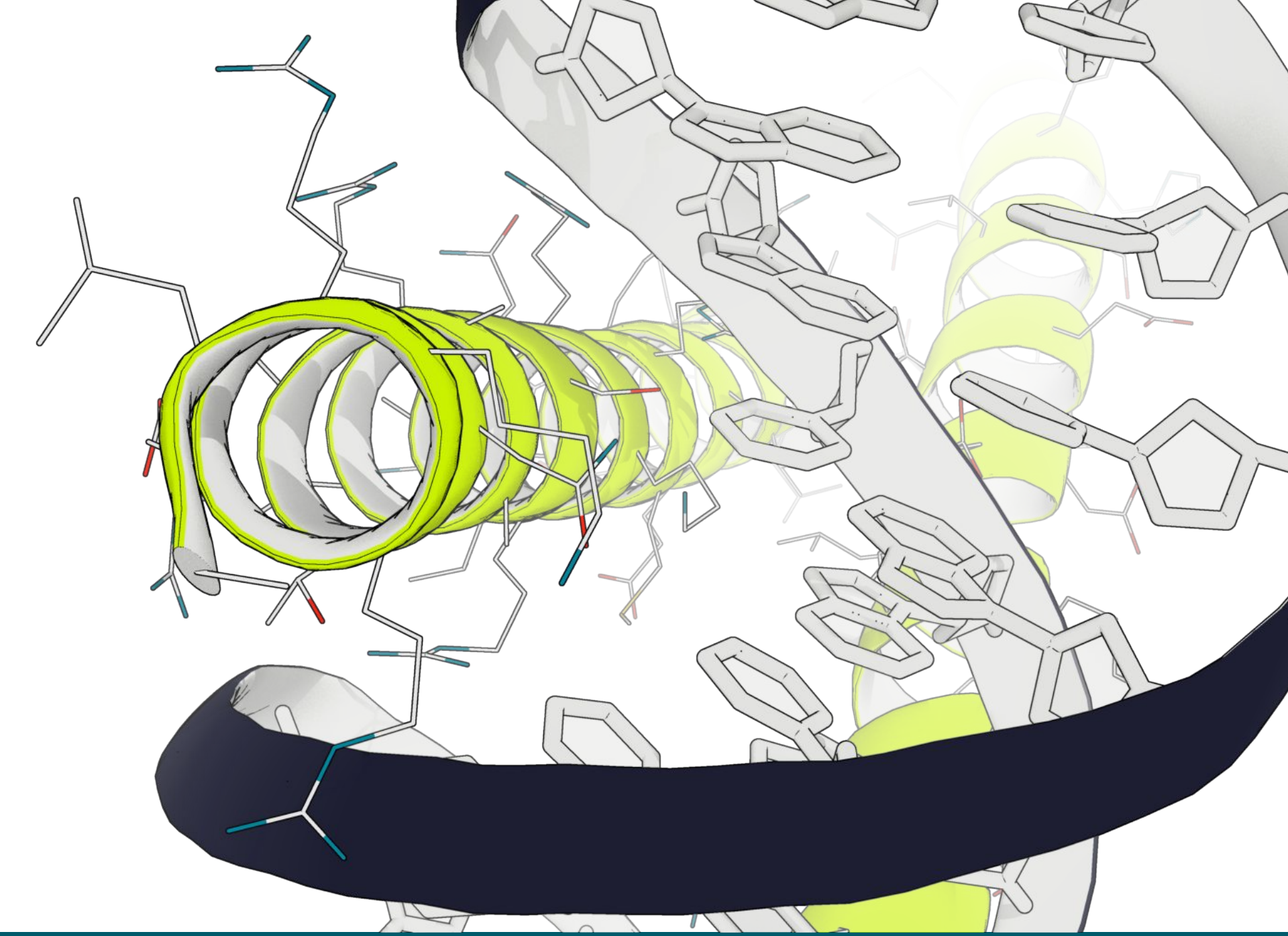
Лейциновая молния



Зачем?

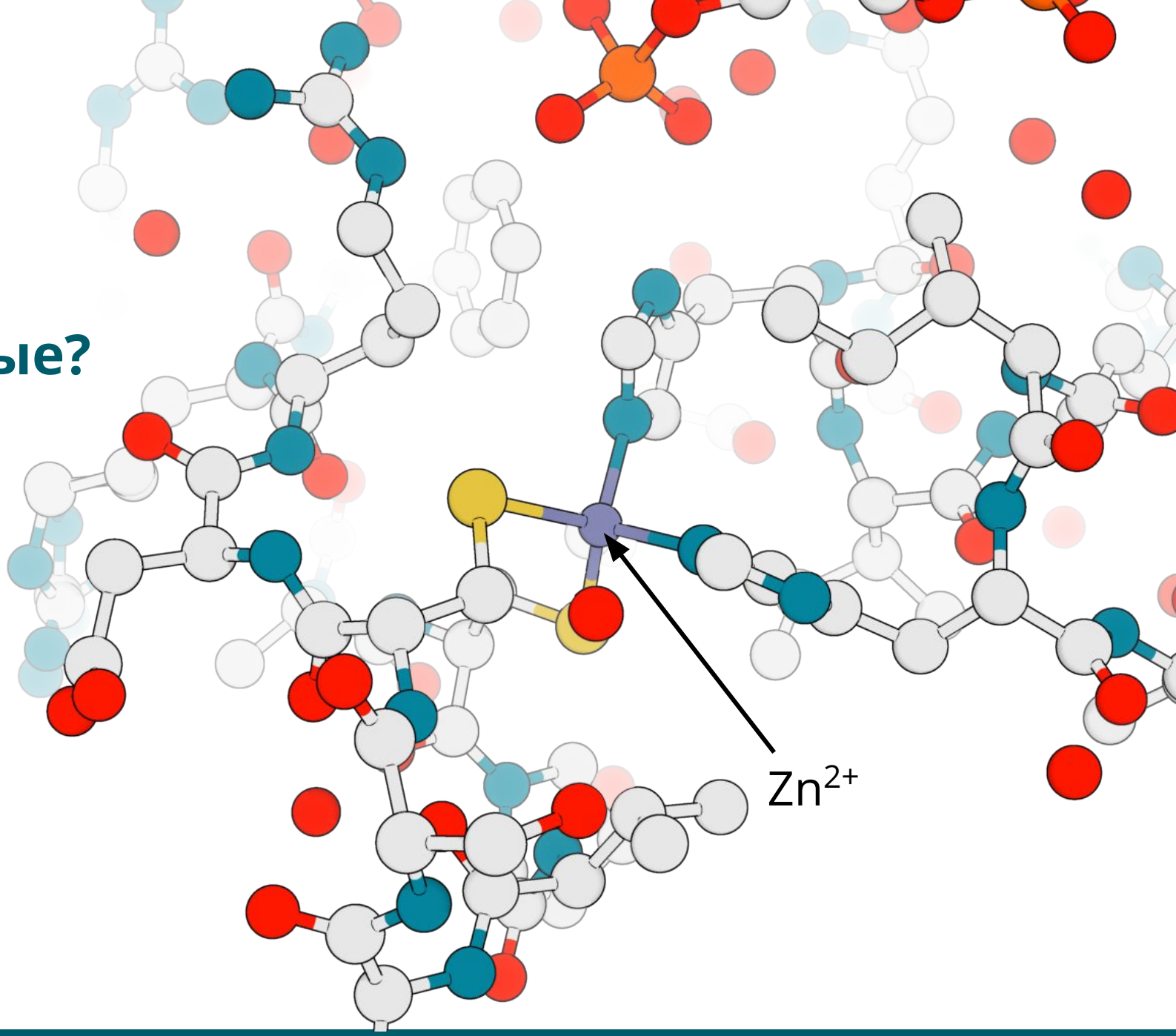
Лейциновая молния



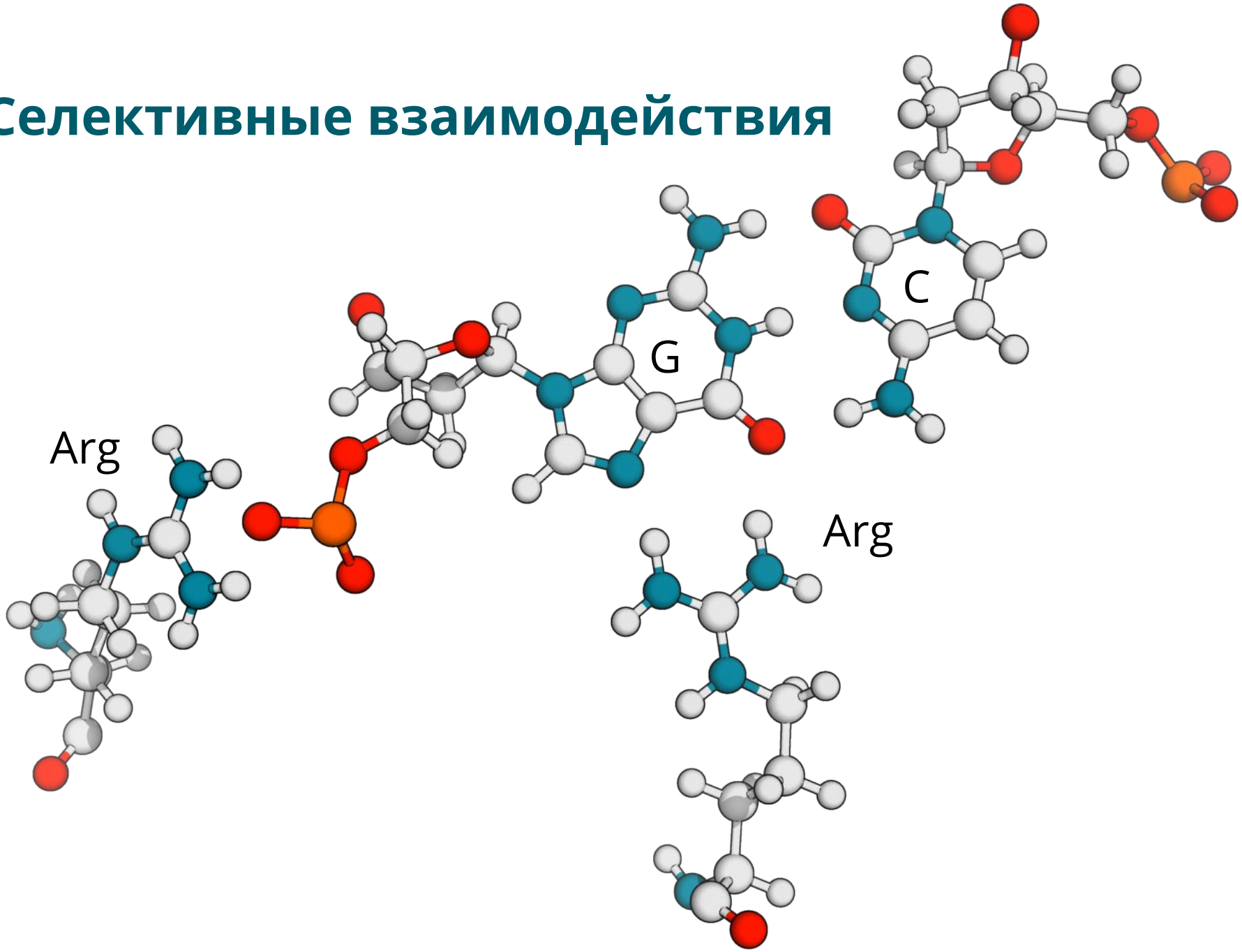


Цинковые пальцы

Почему цинковые?



Селективные взаимодействия



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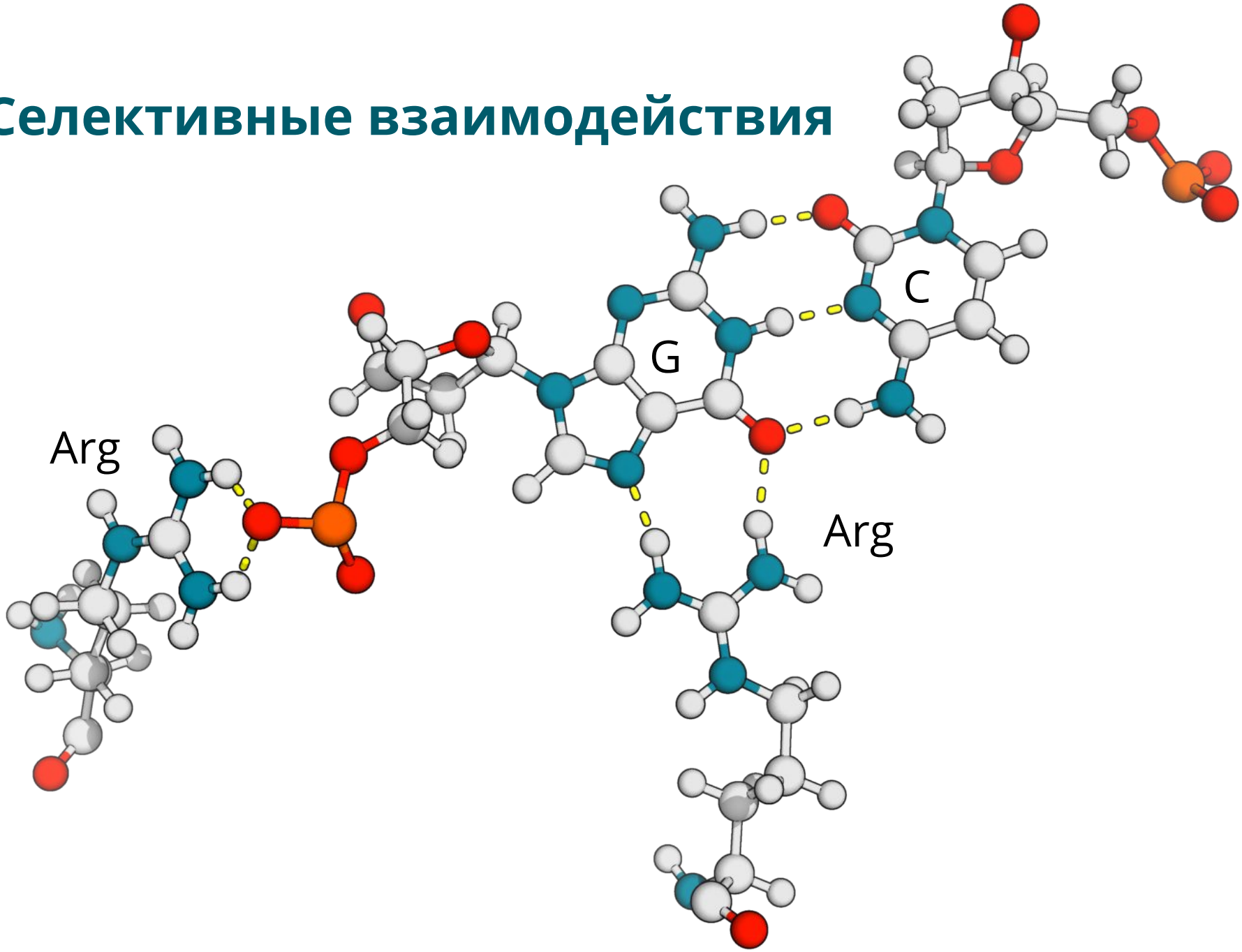

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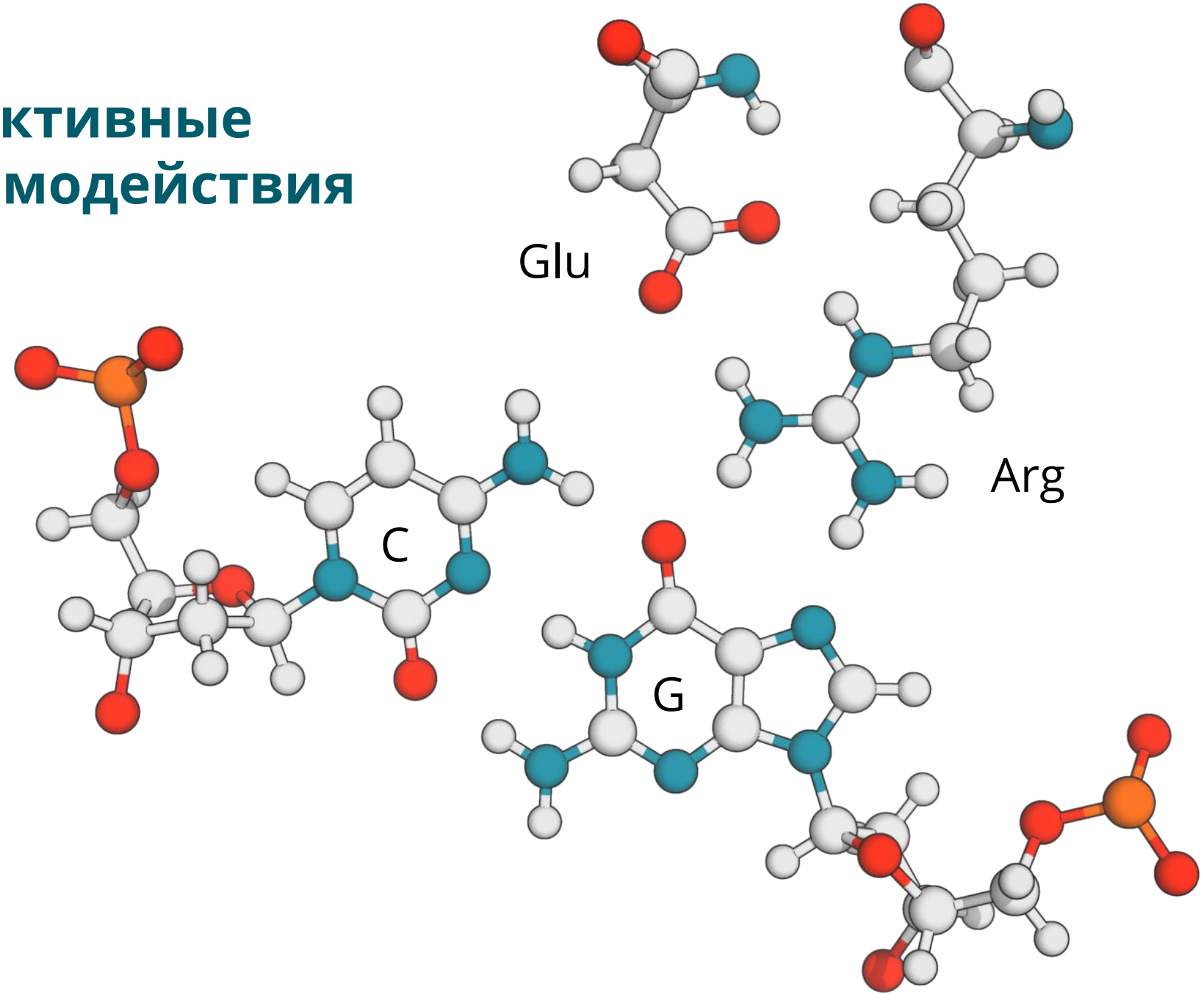

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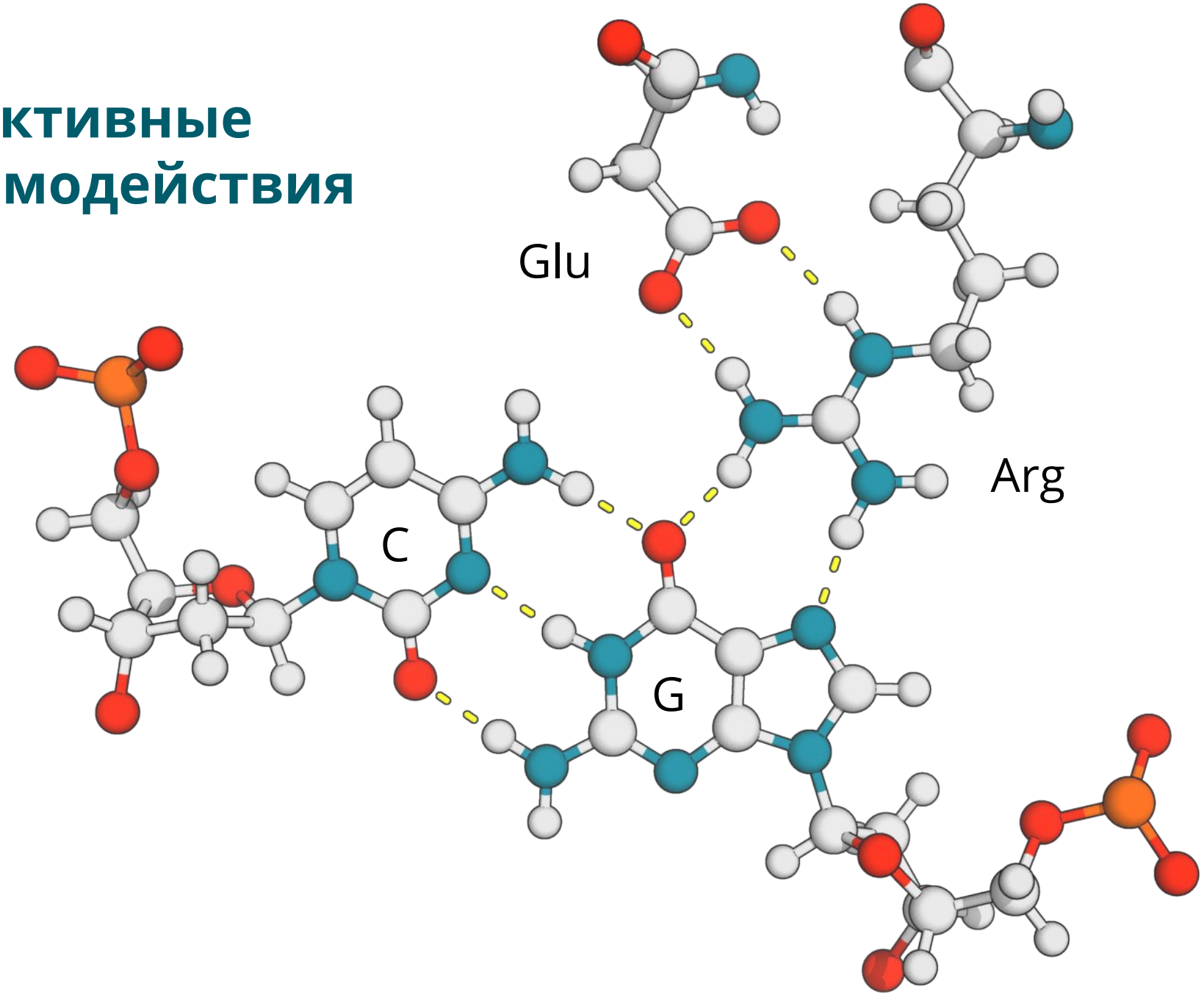

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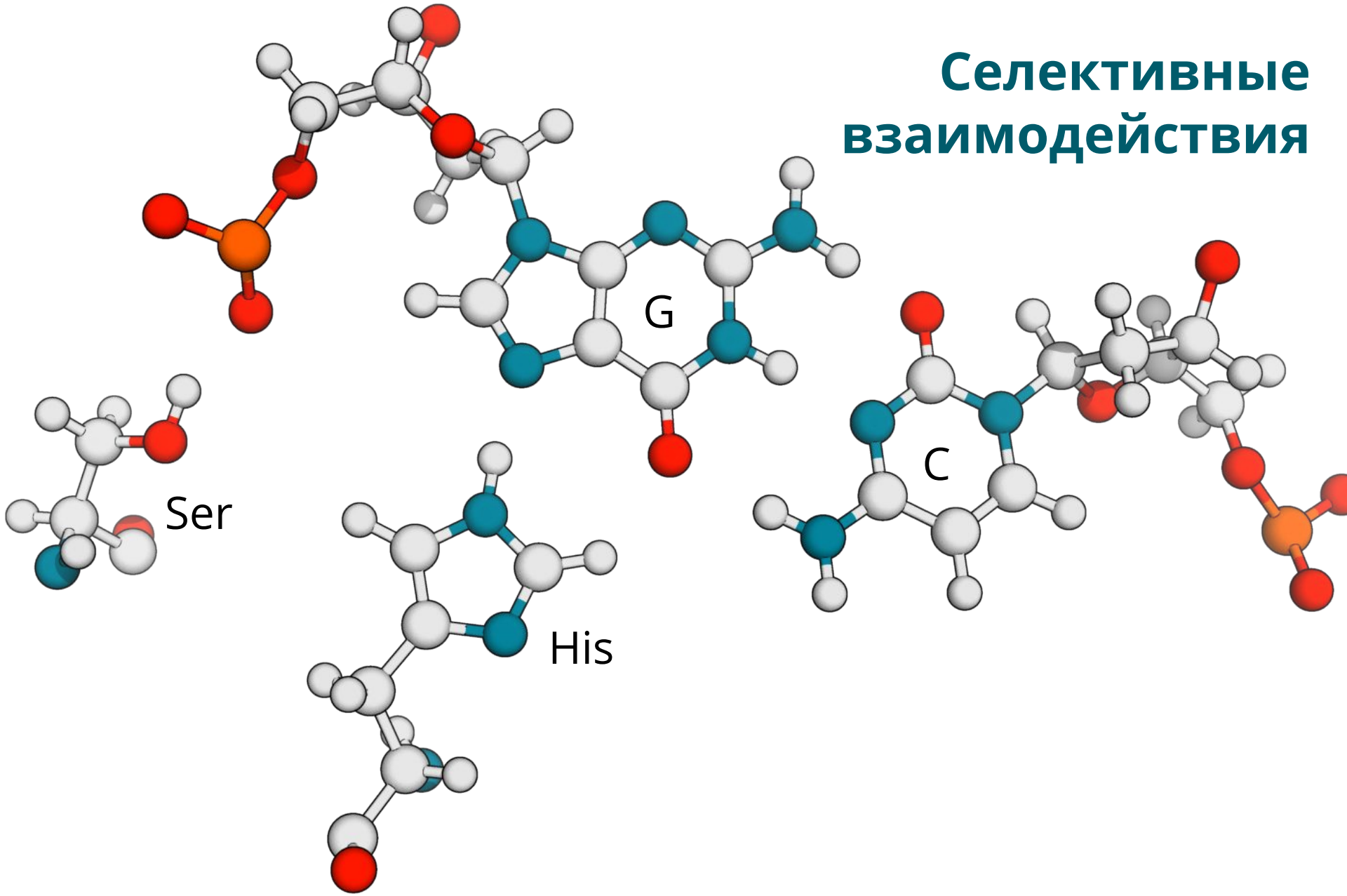

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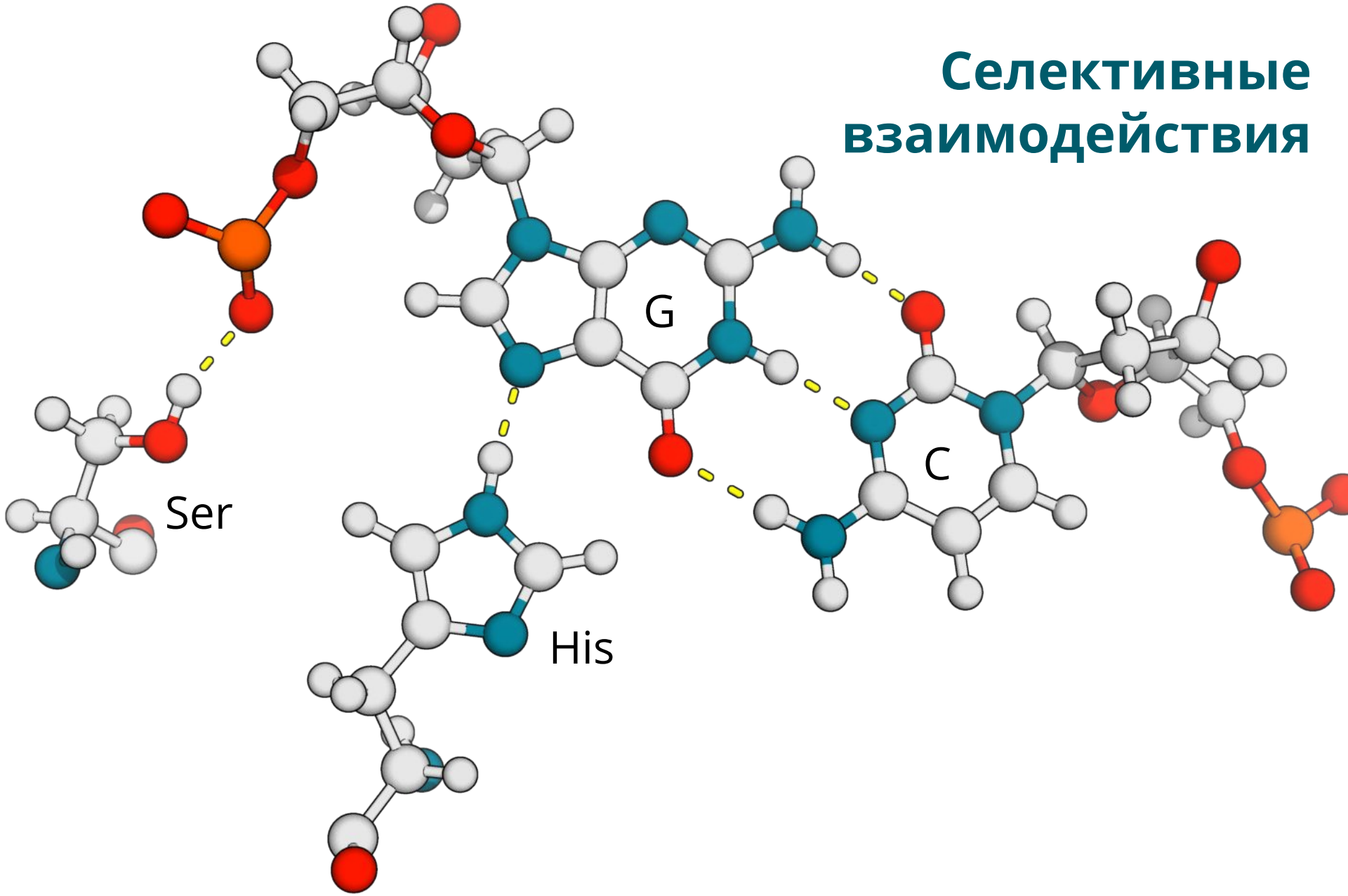

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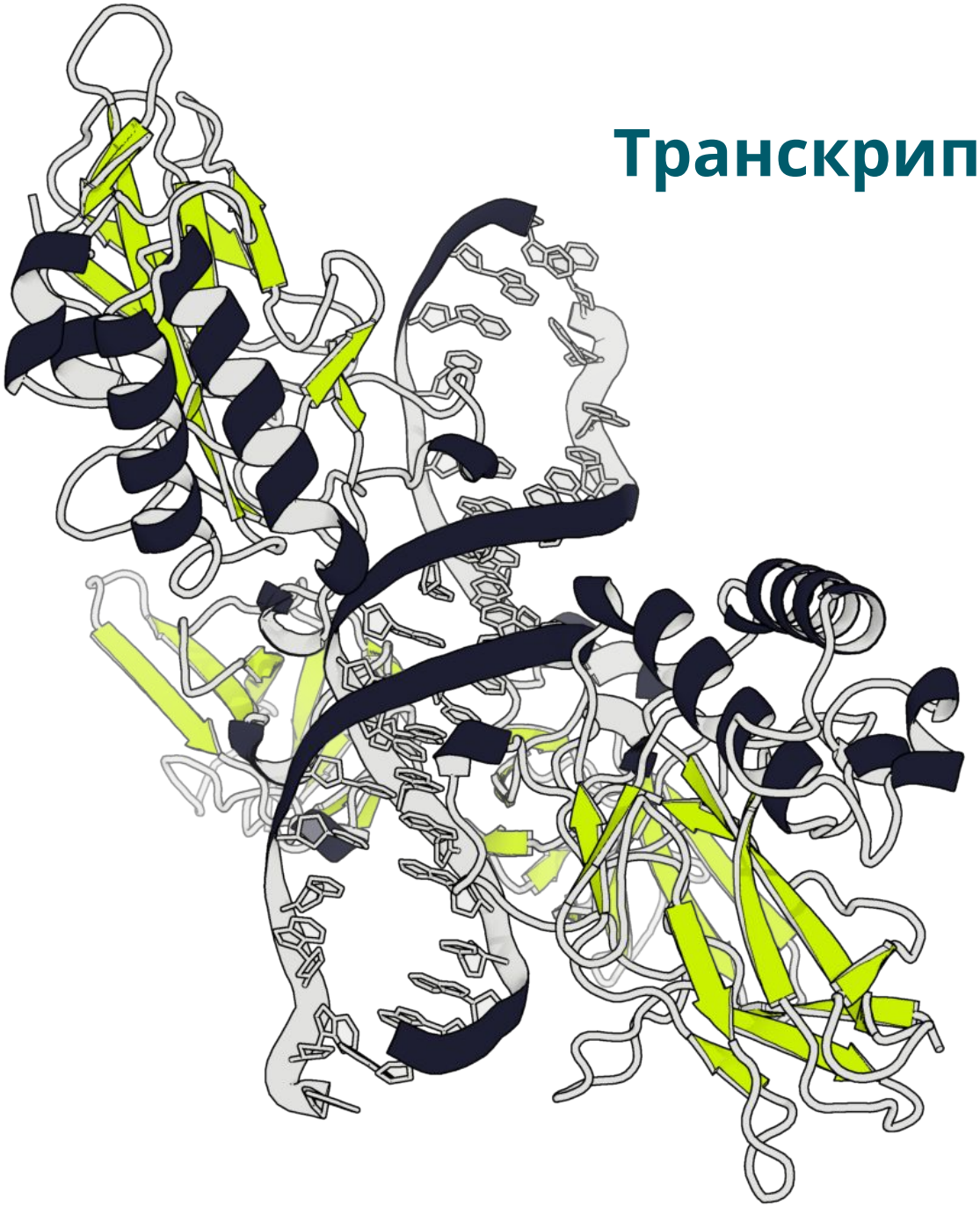
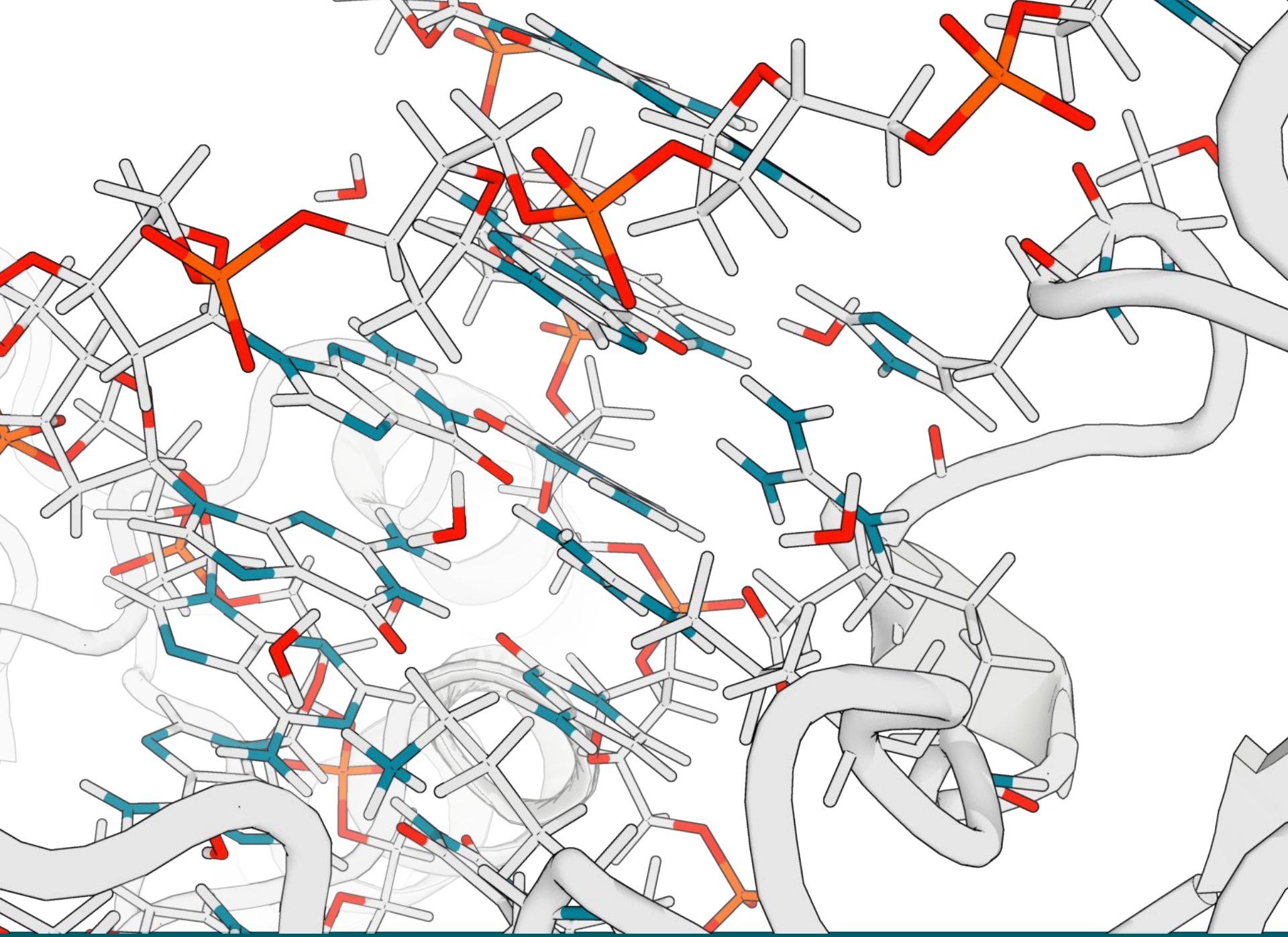


Что это такое?



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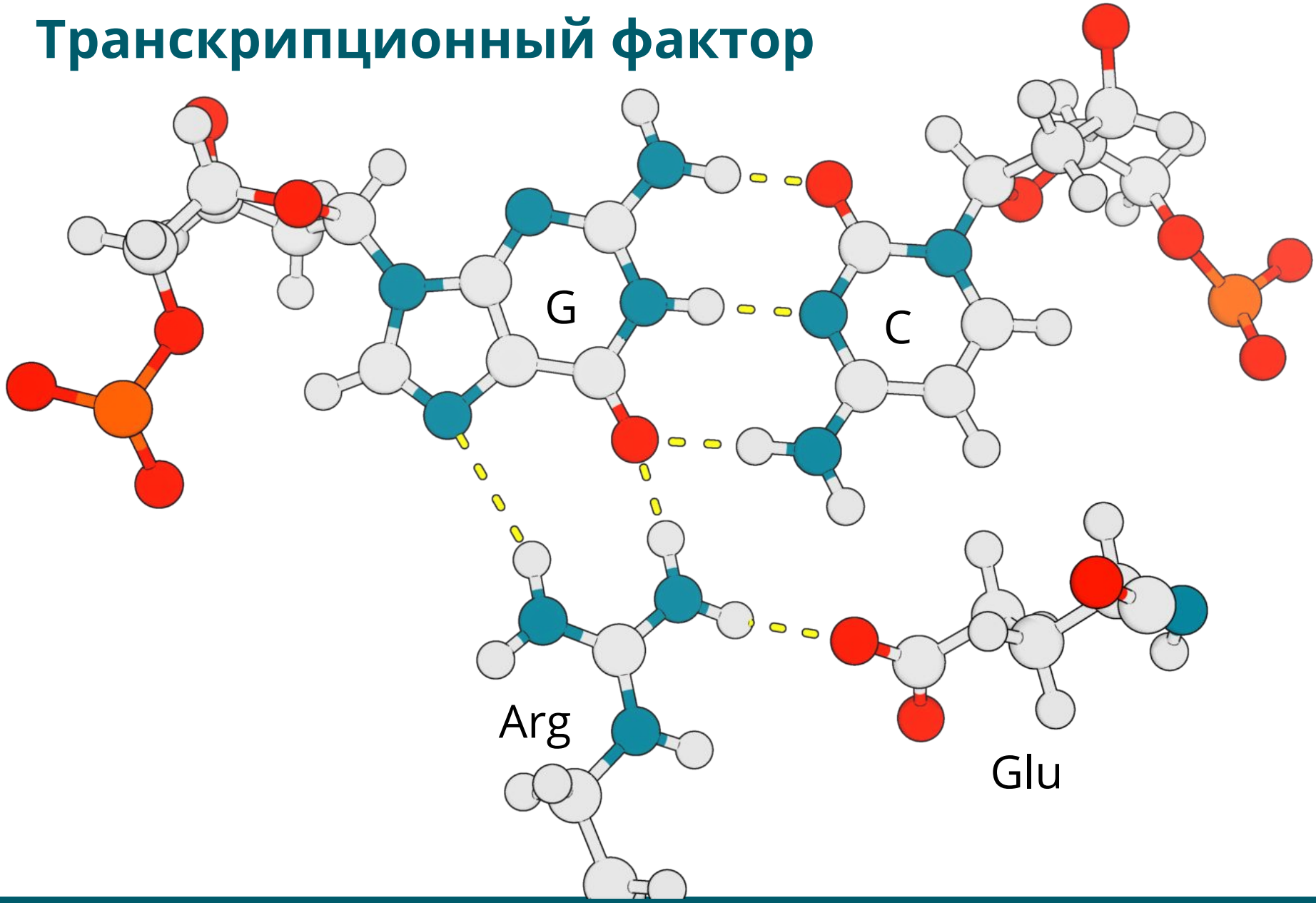

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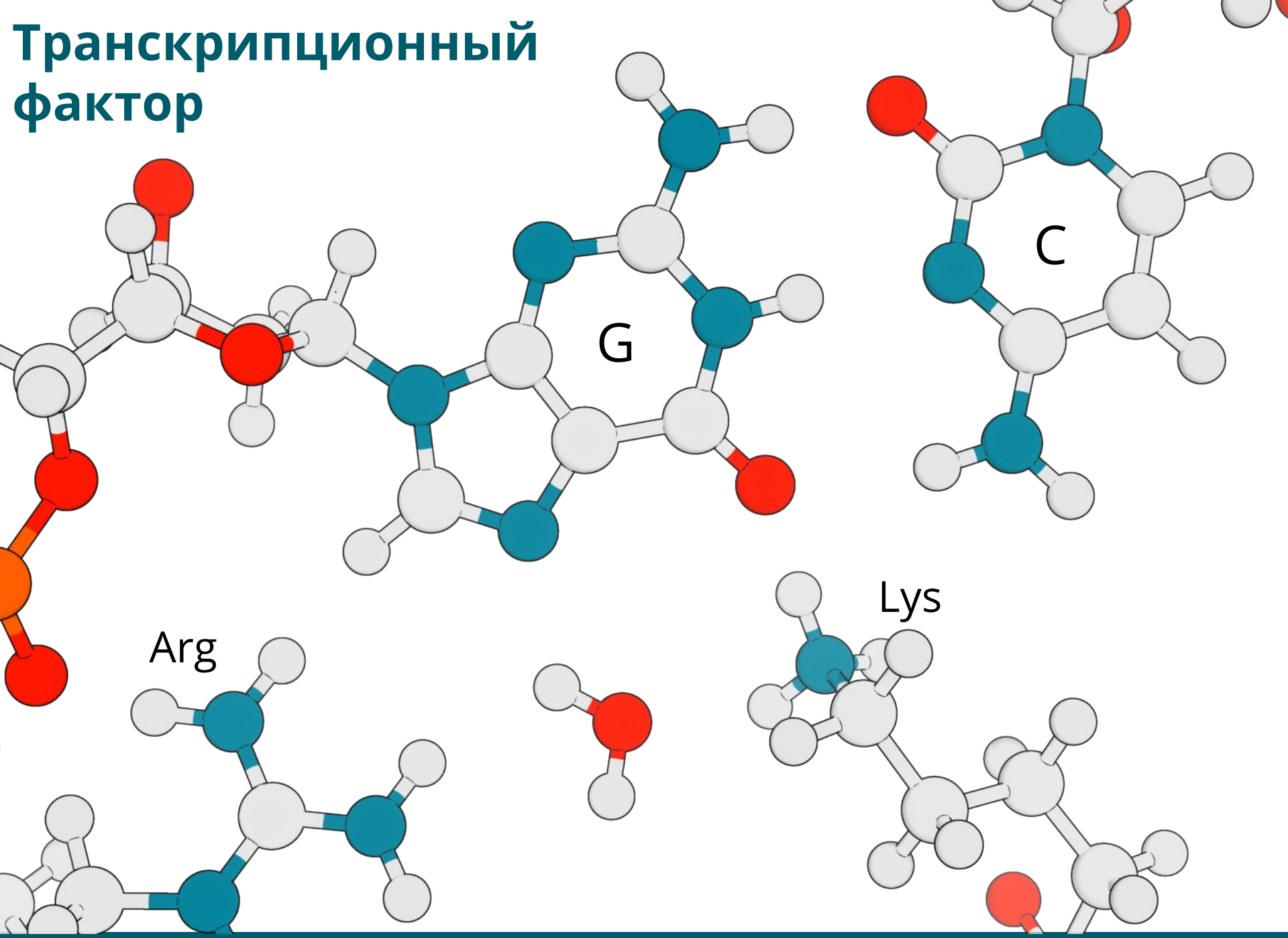

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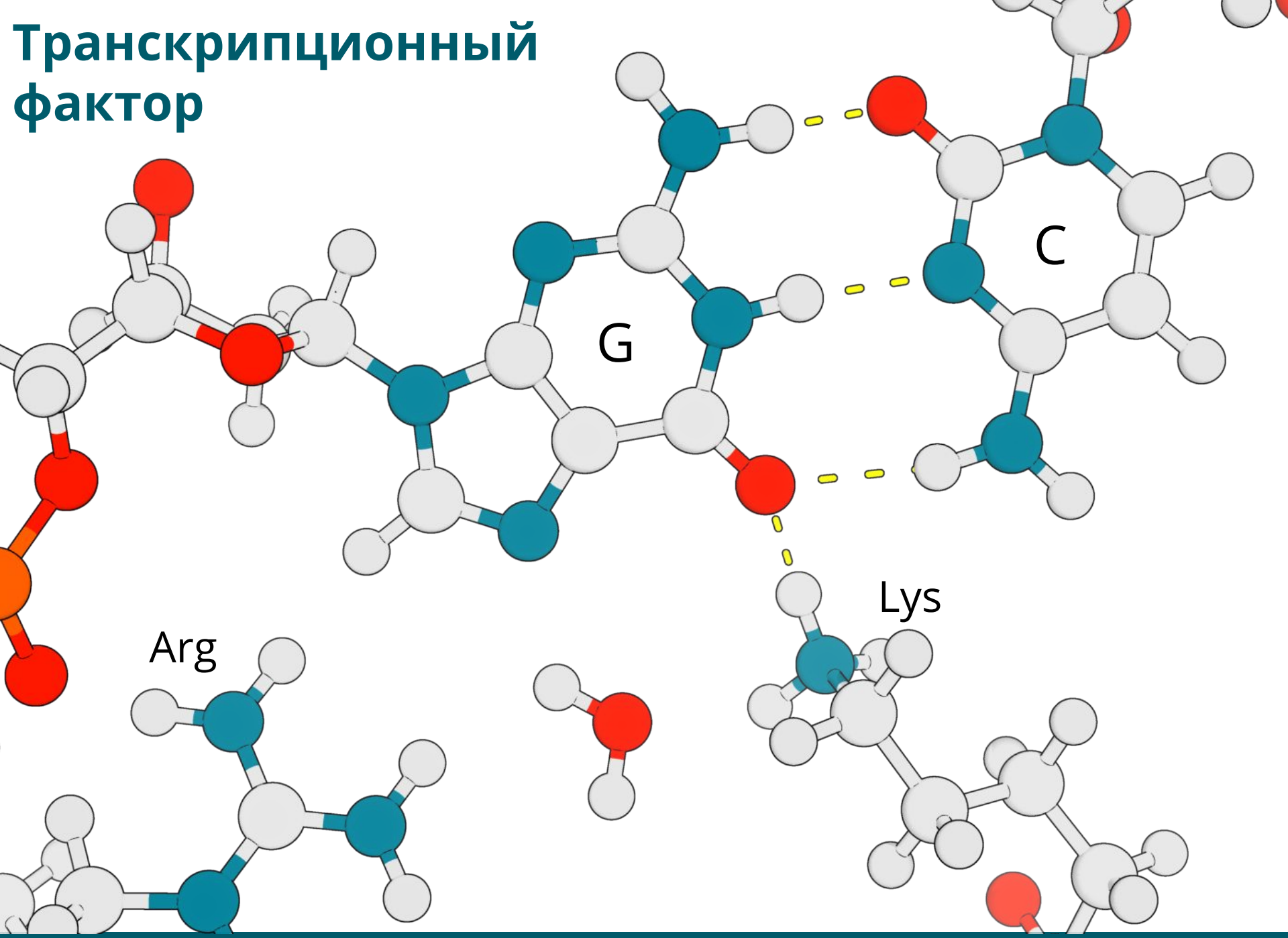
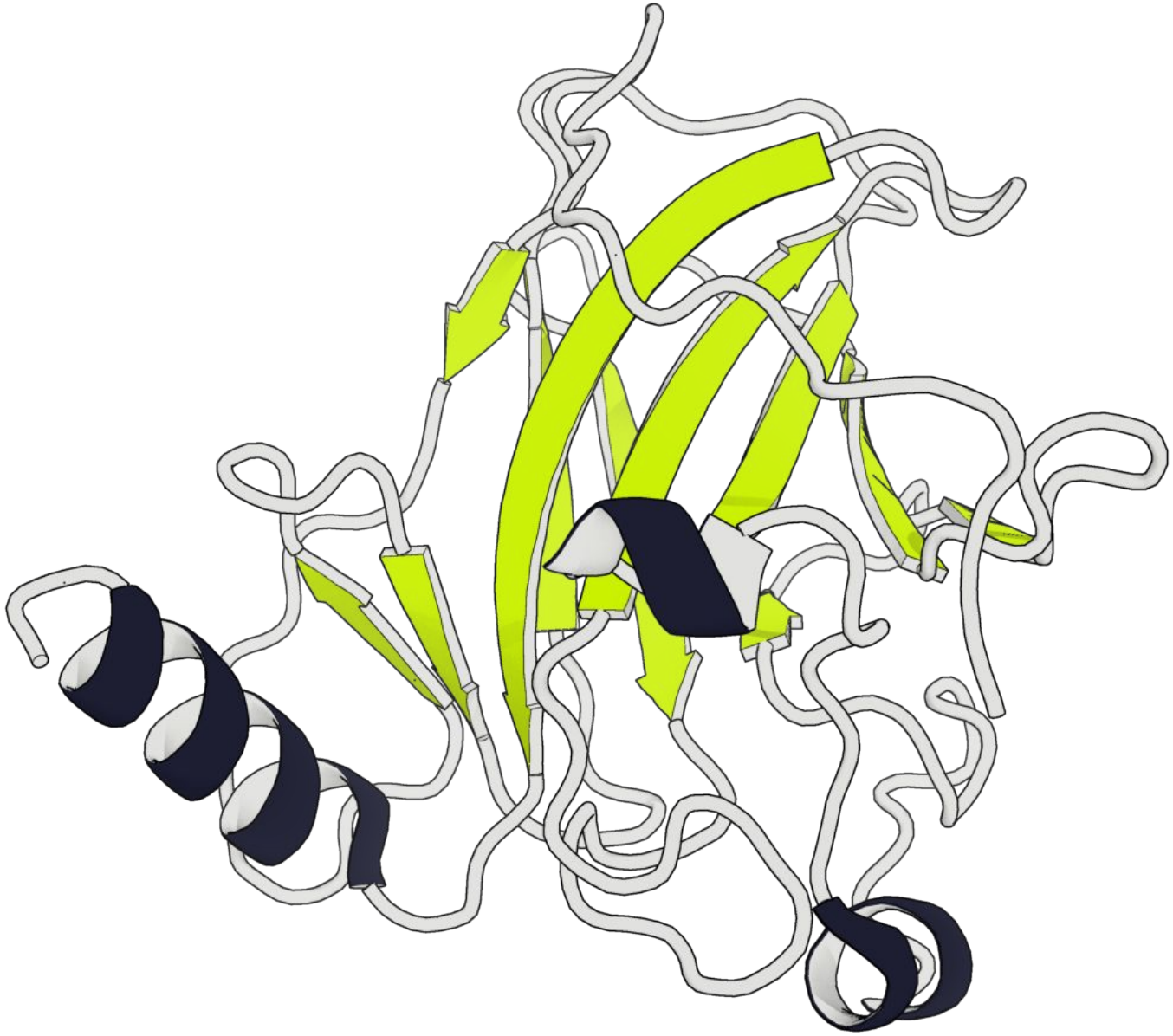


P53



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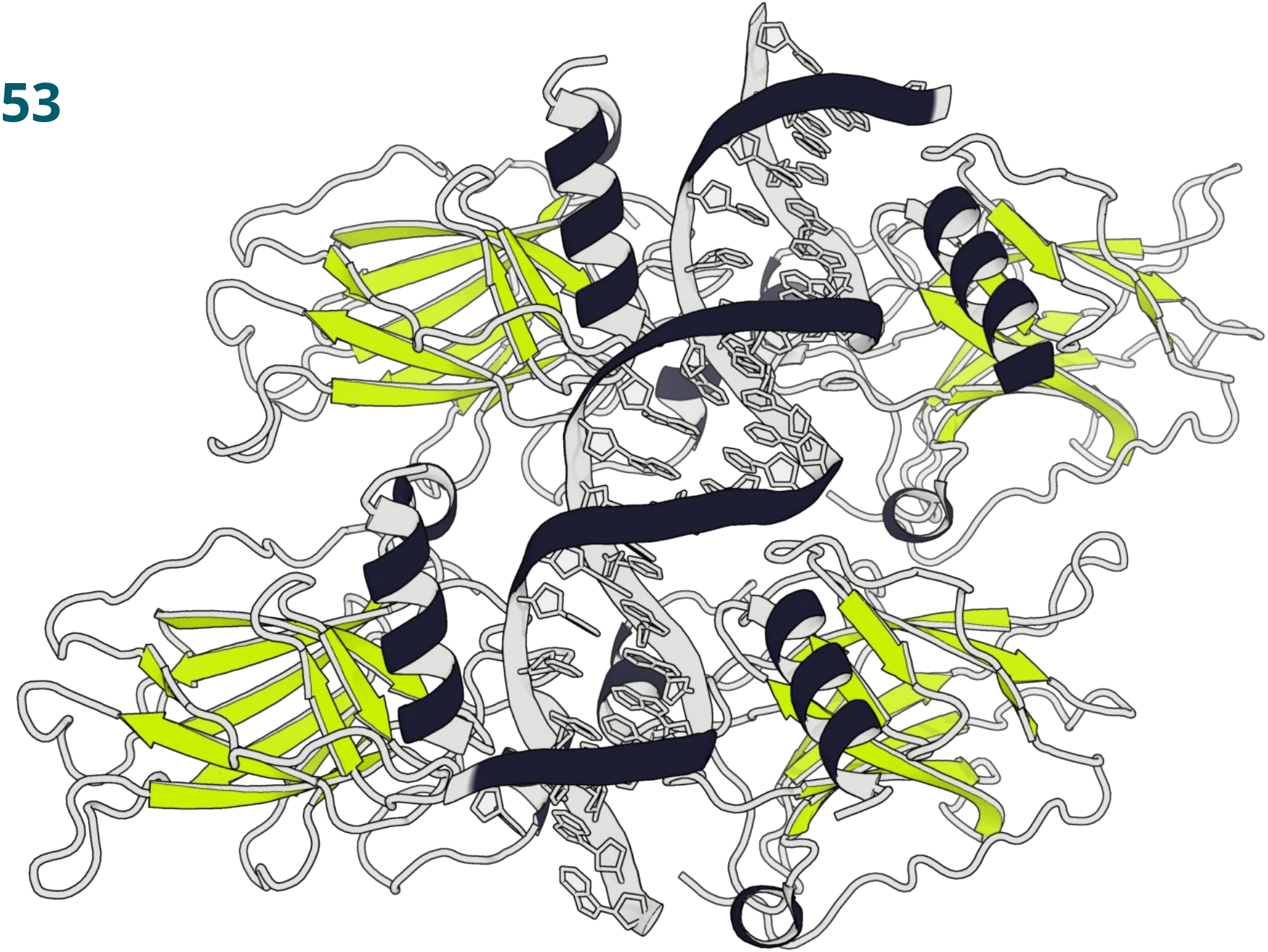
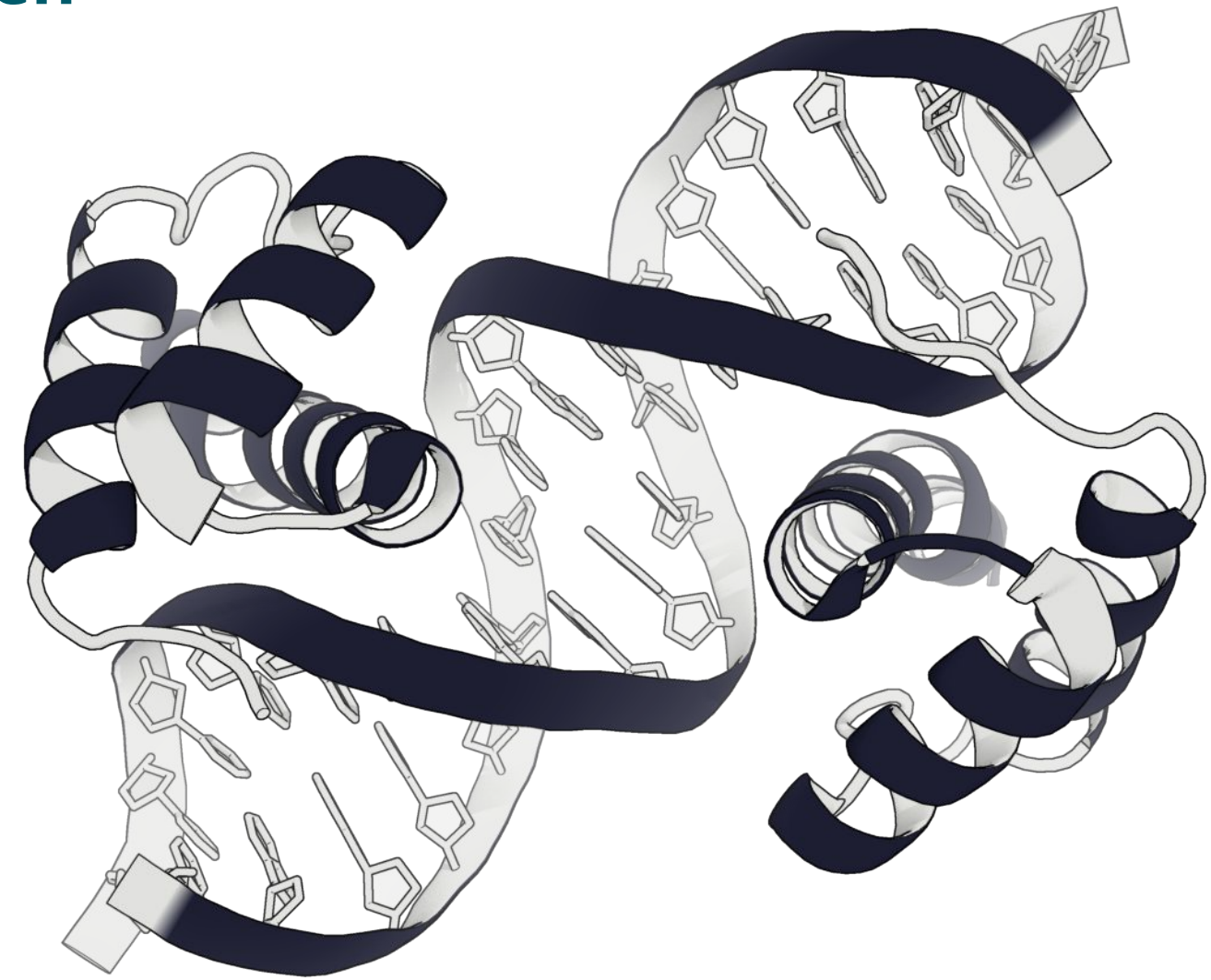
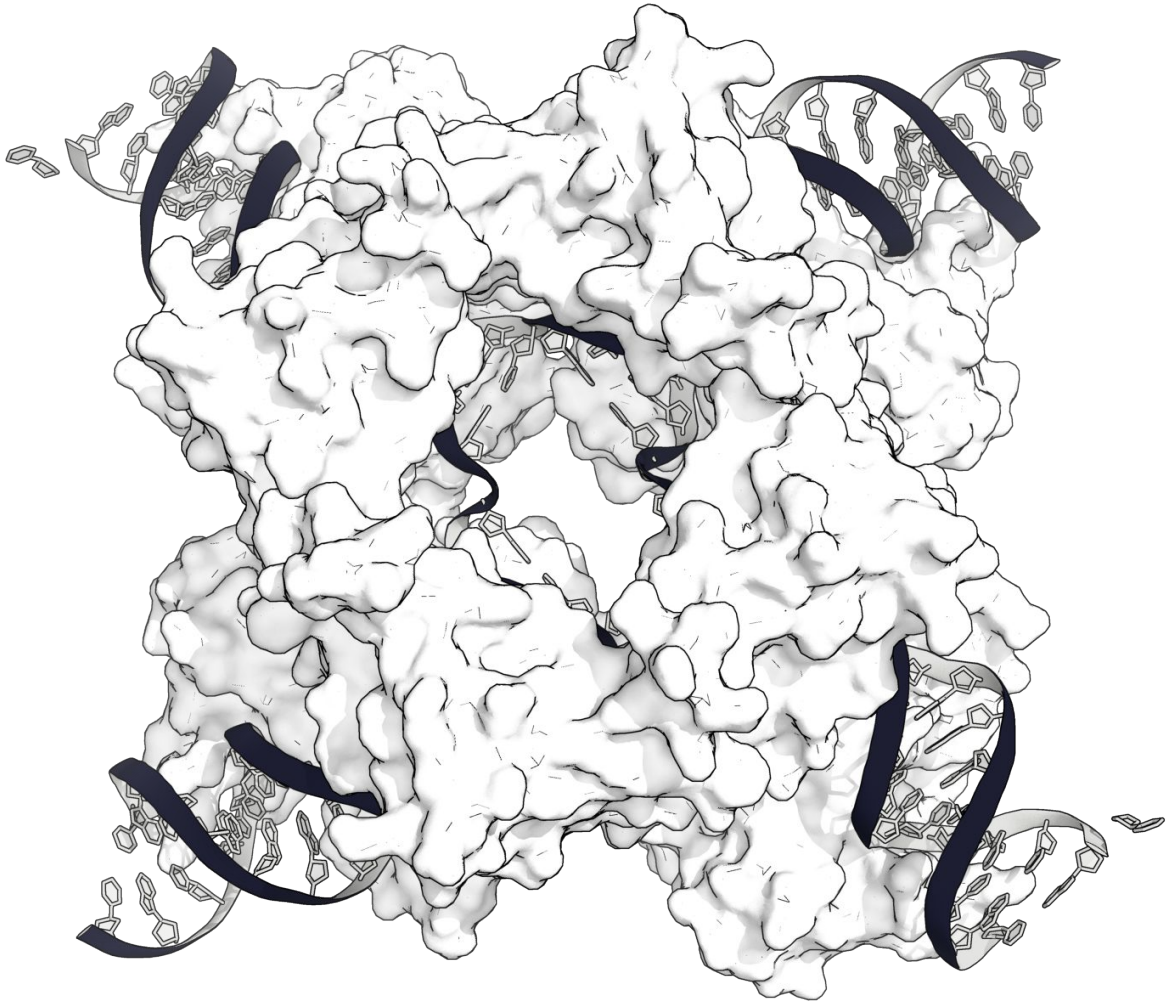


Гомеодомен



Кроссинговер: структура Холлидея



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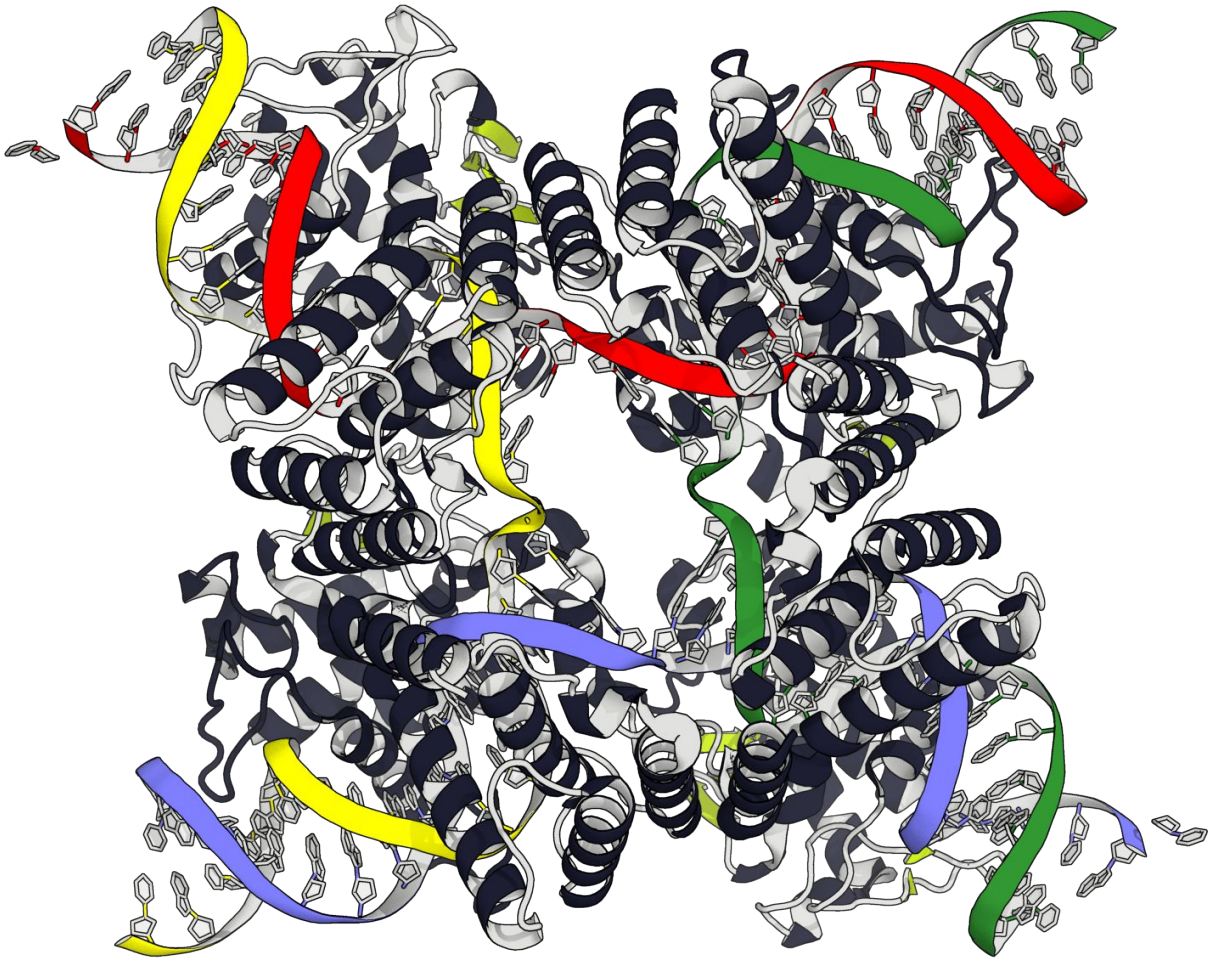

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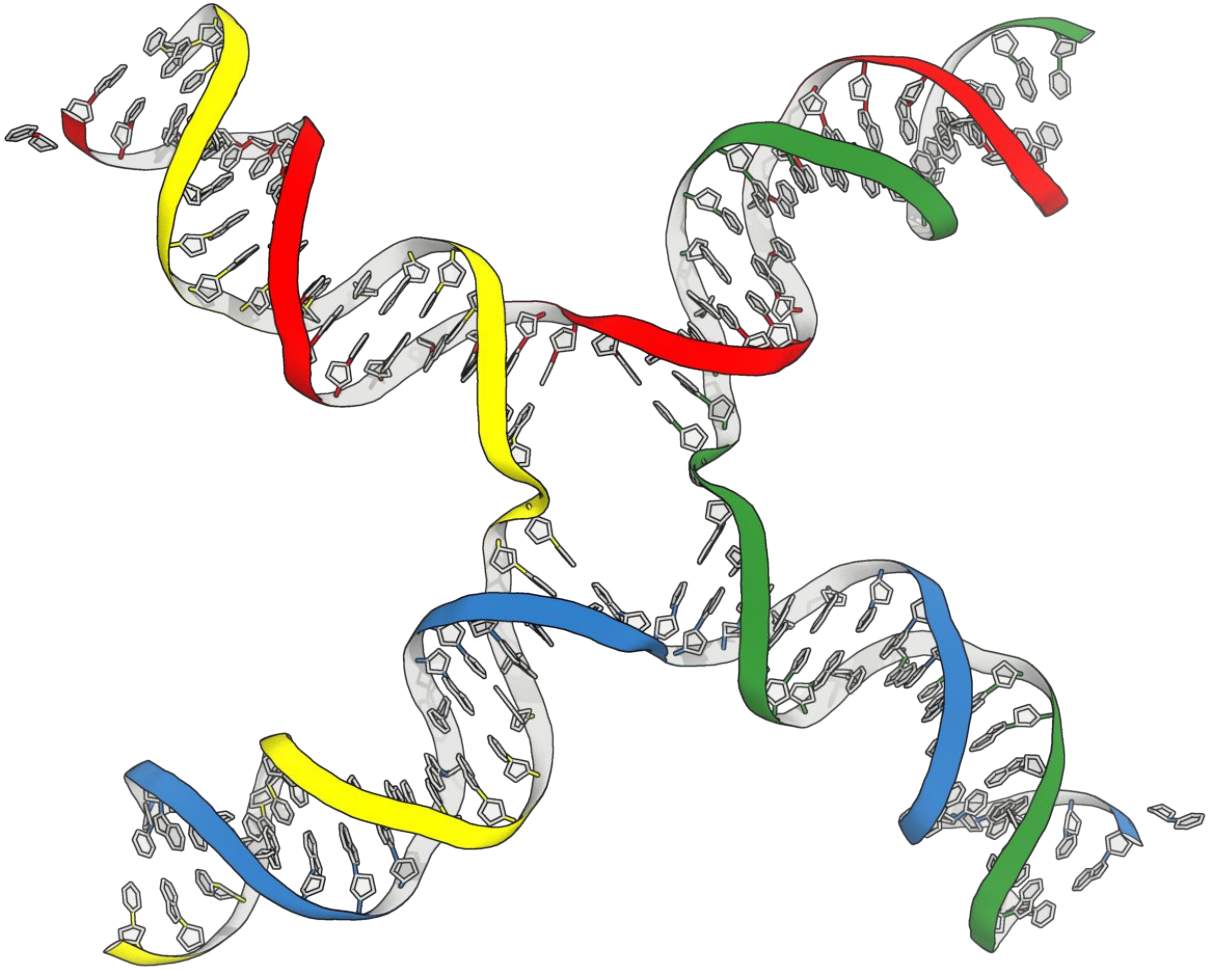
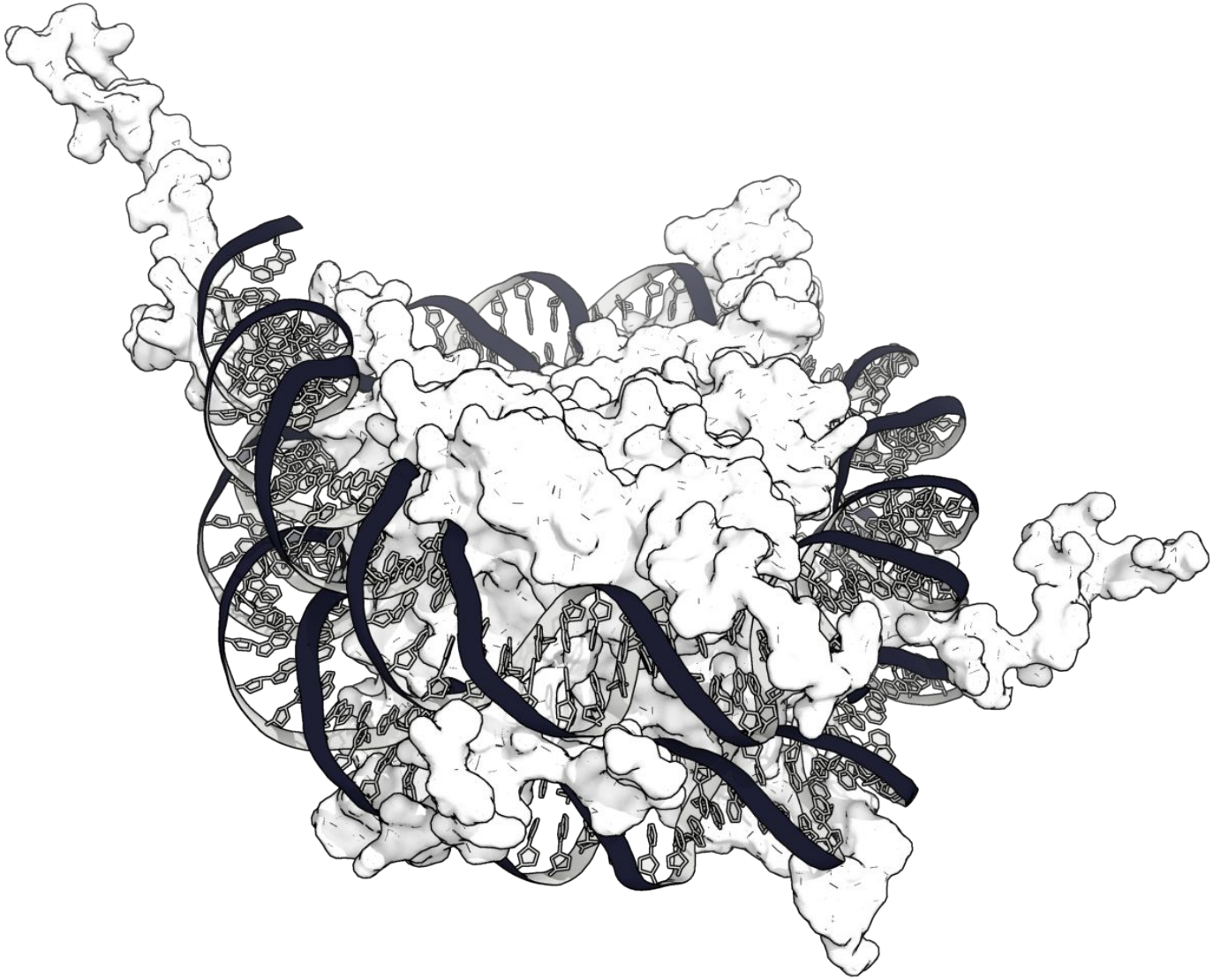
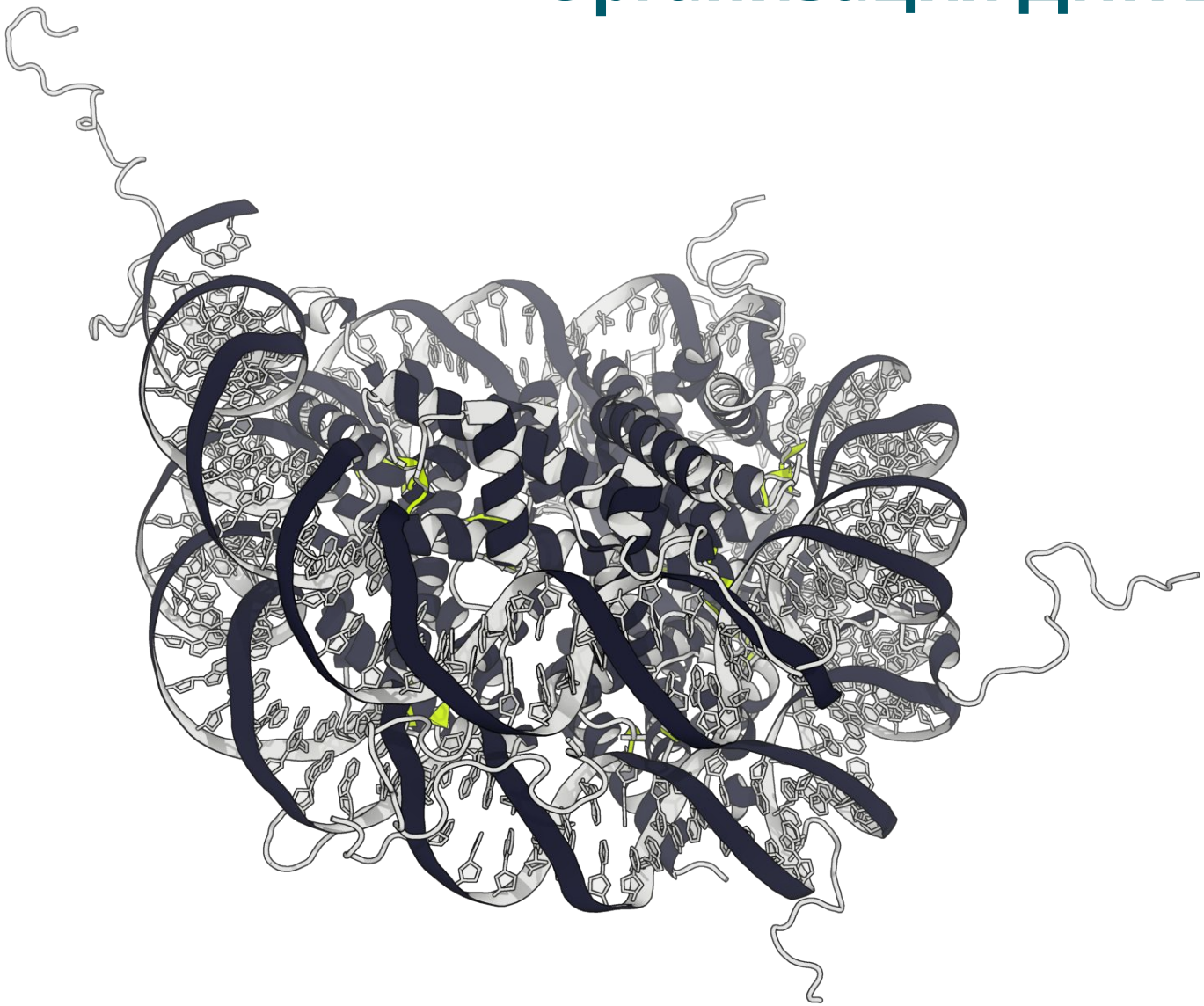


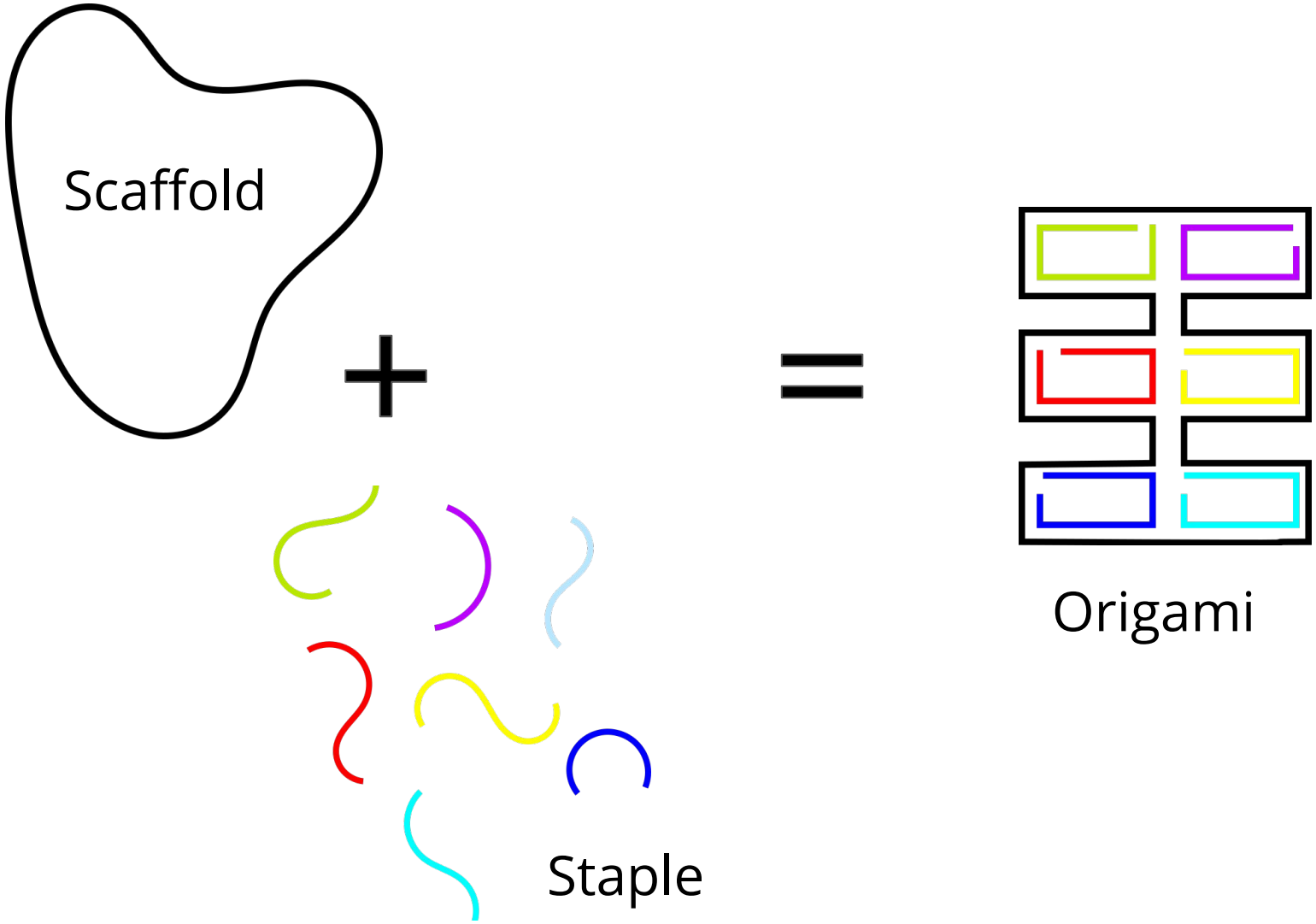
Организация ДНК в клетке



Организация ДНК в клетке



ДНК-оригами



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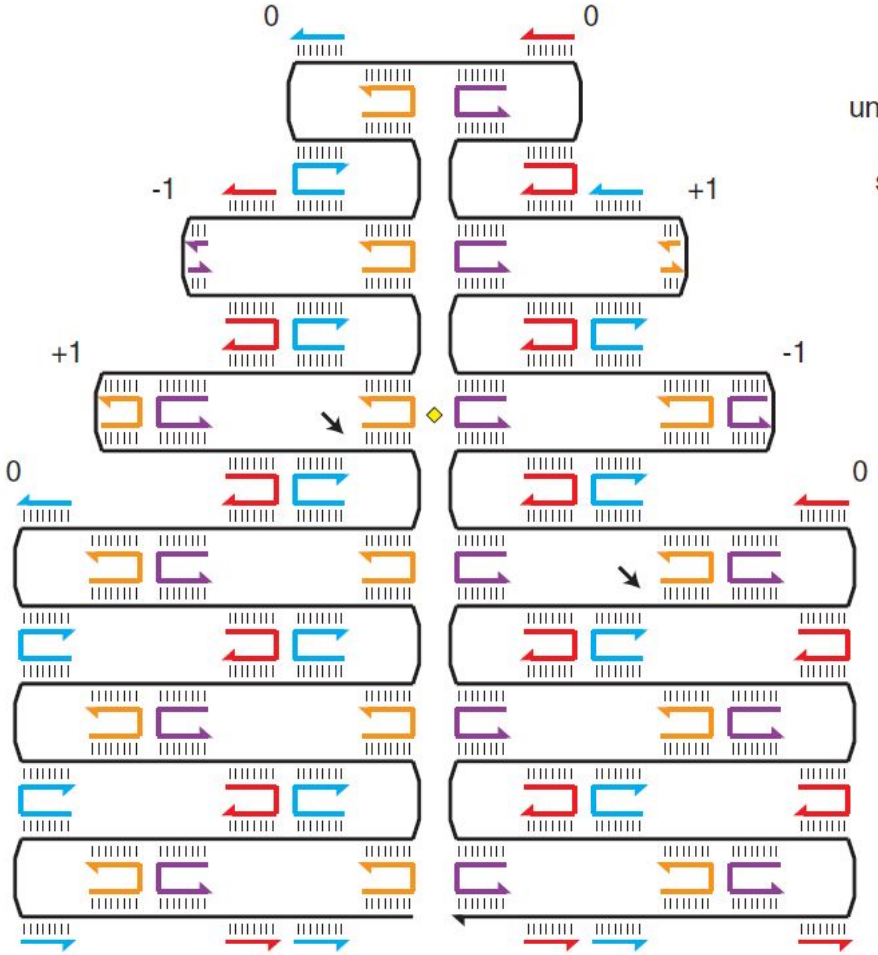

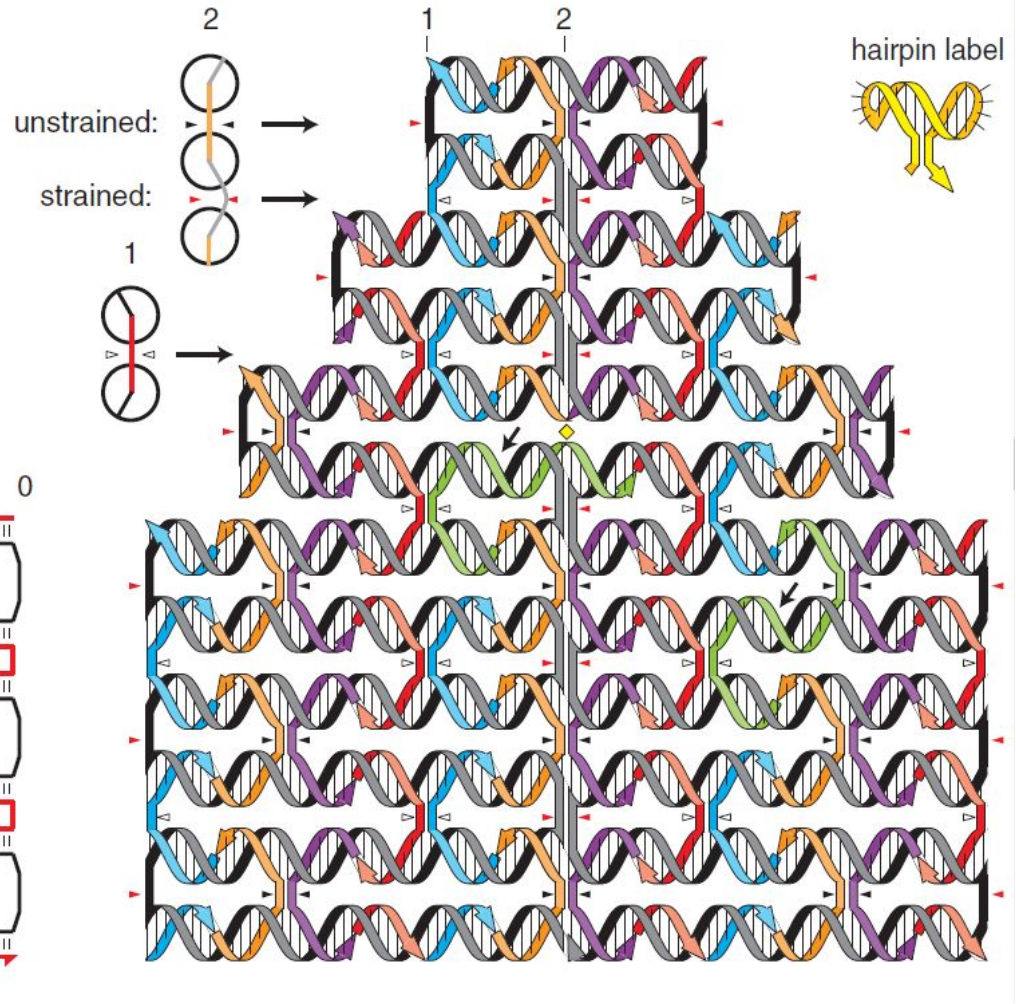

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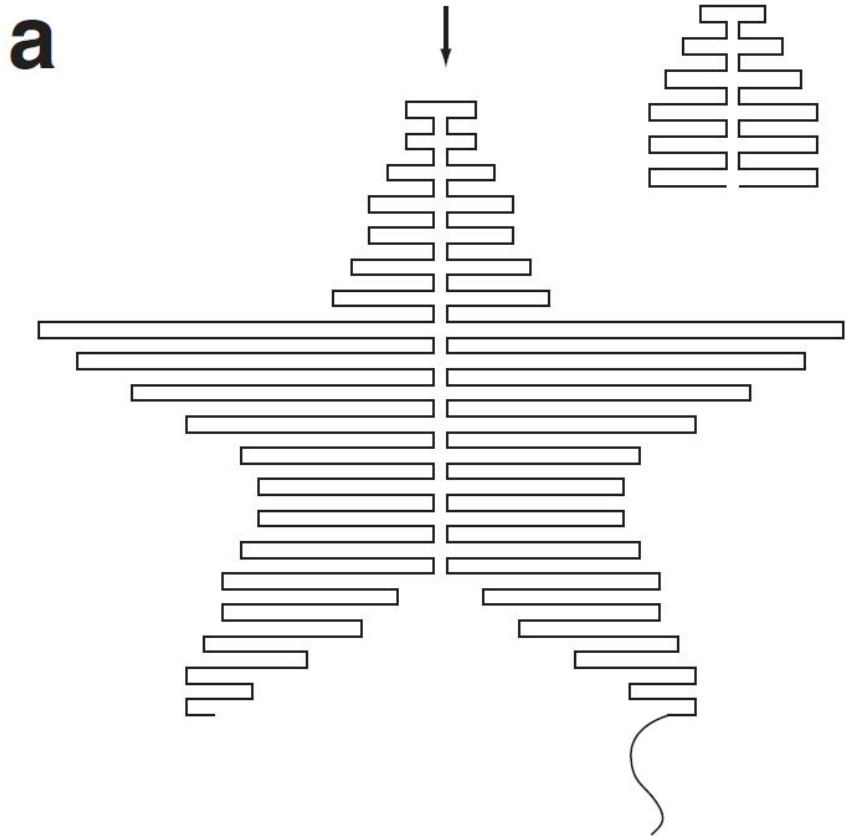

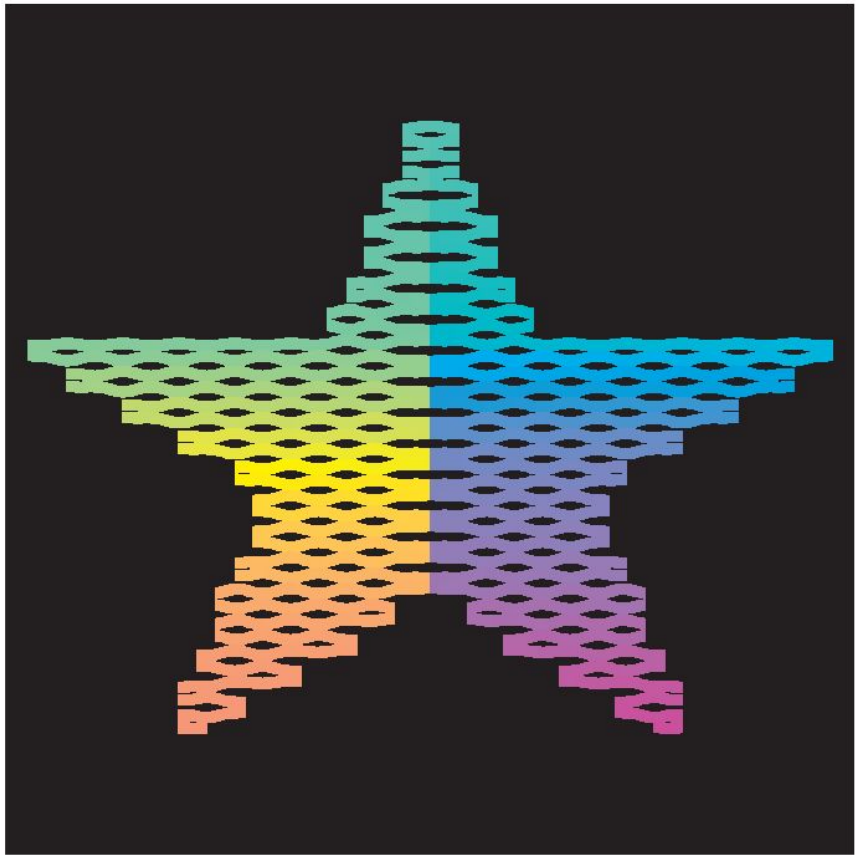

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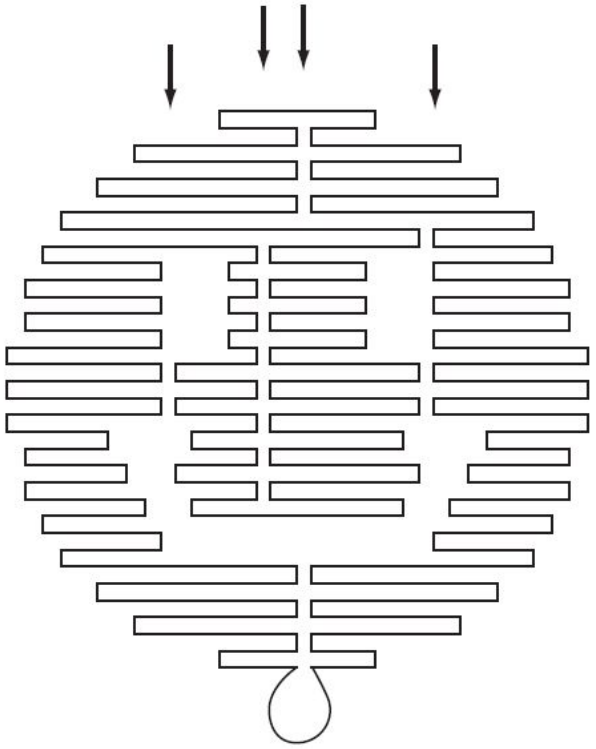

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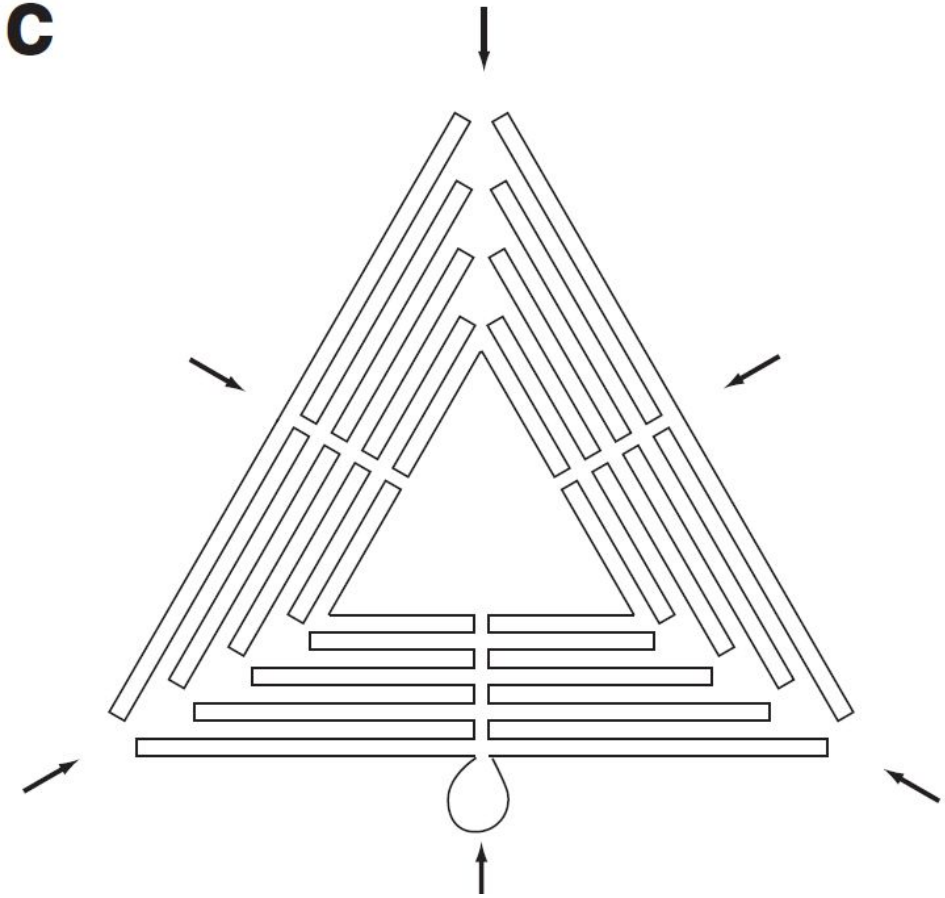

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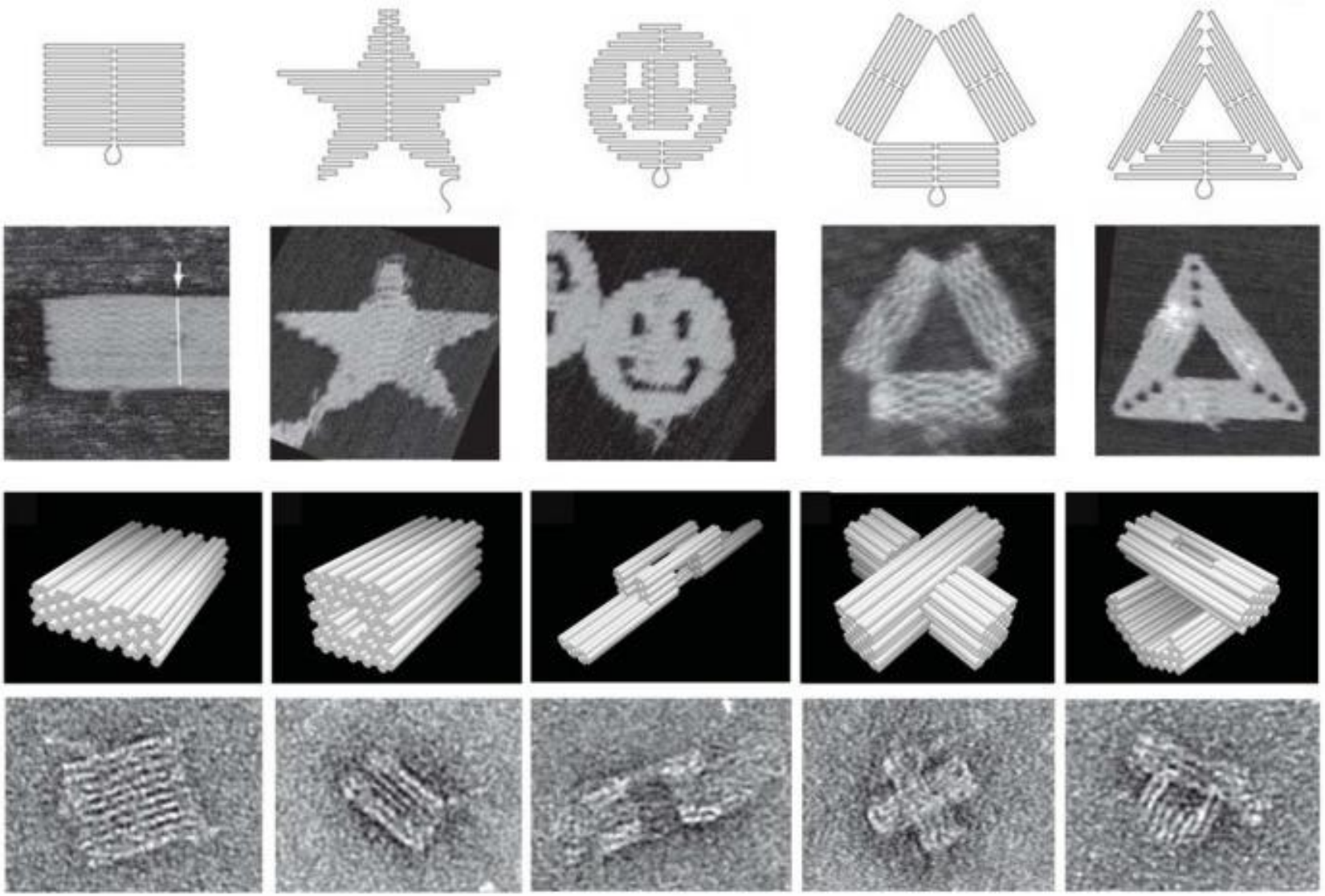

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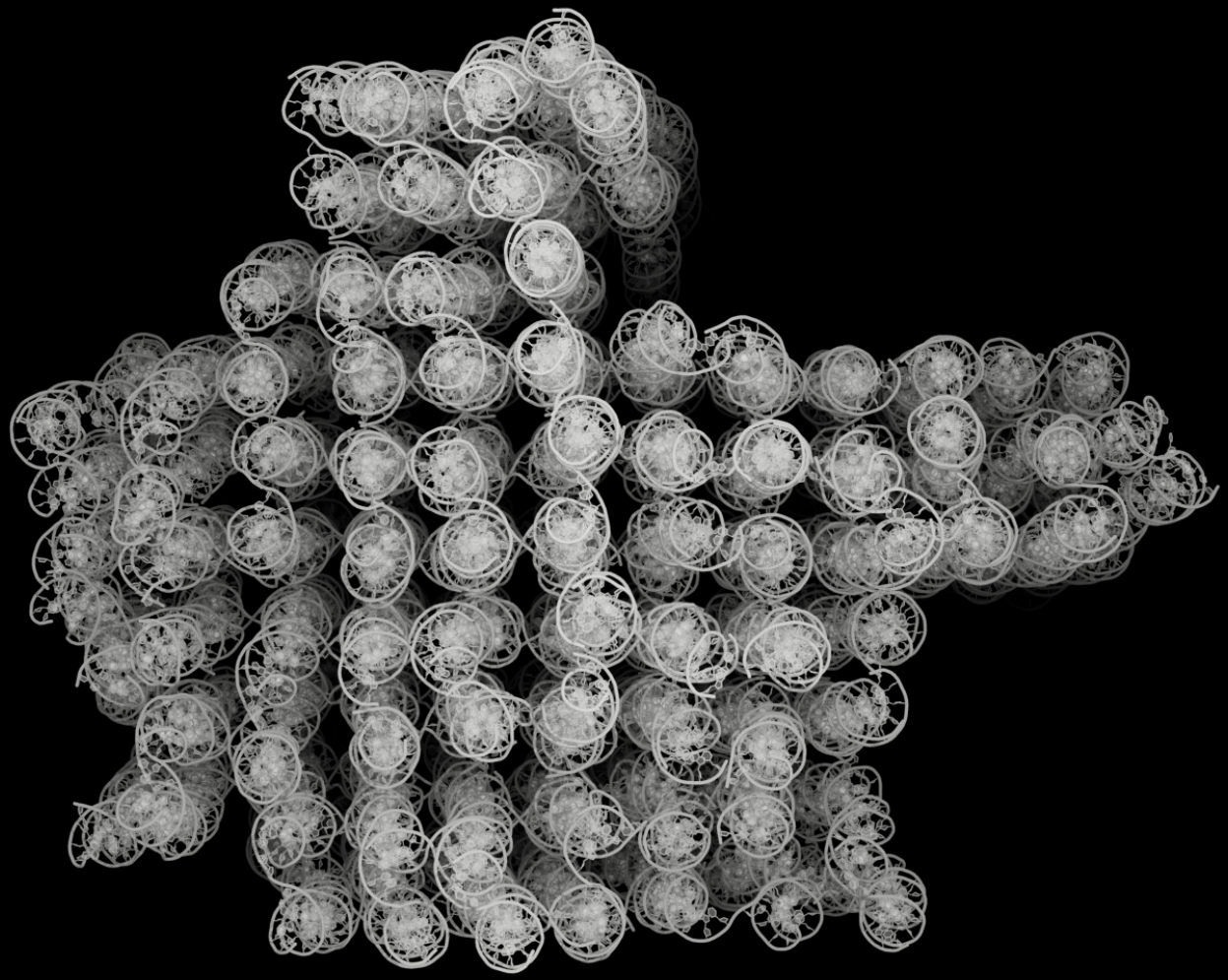
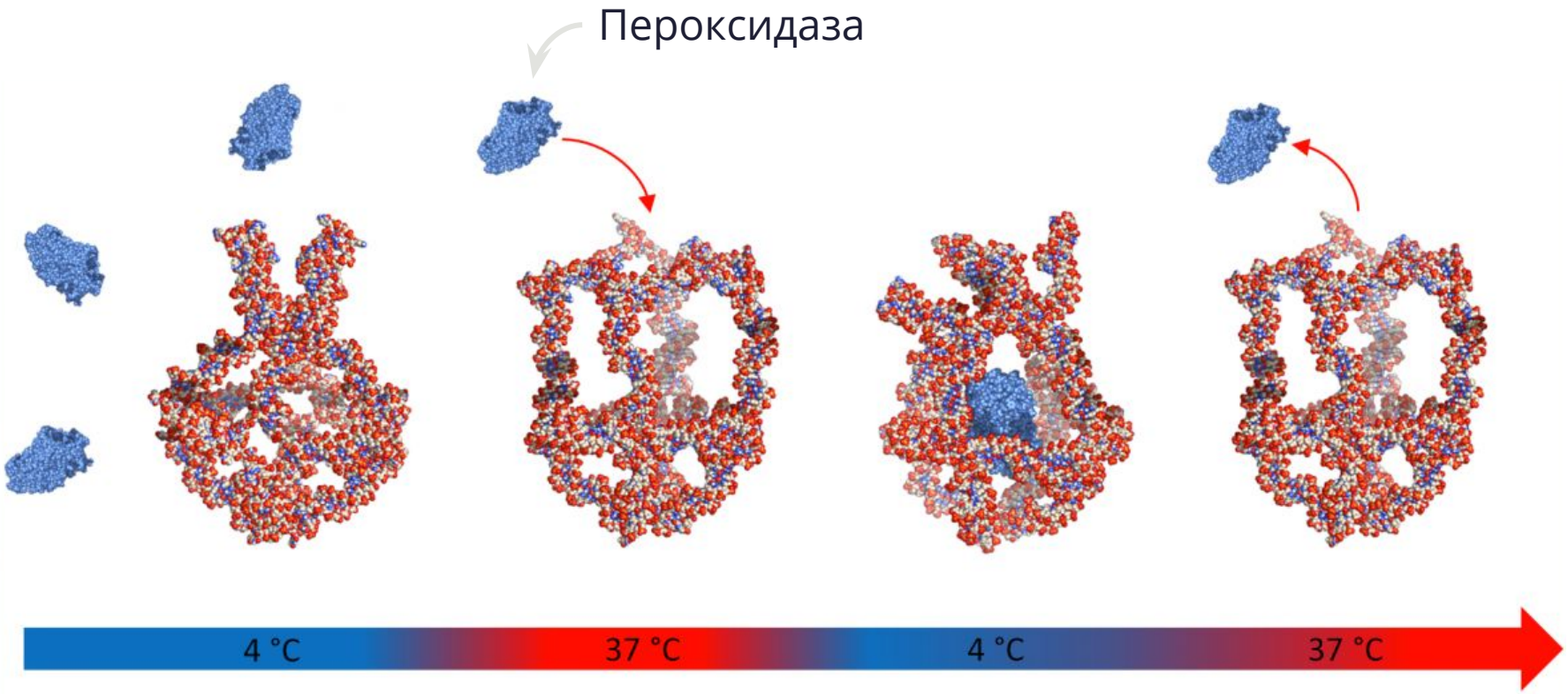
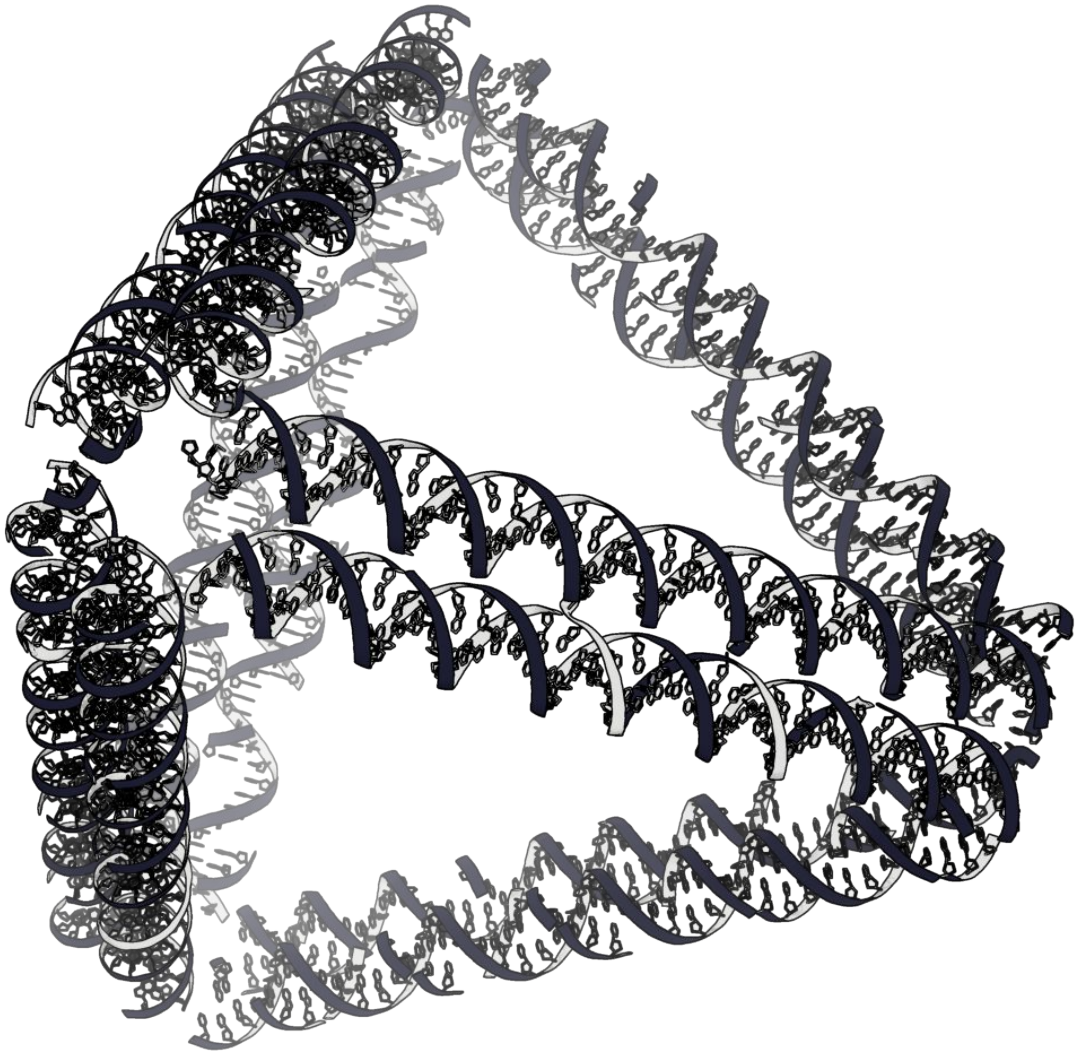


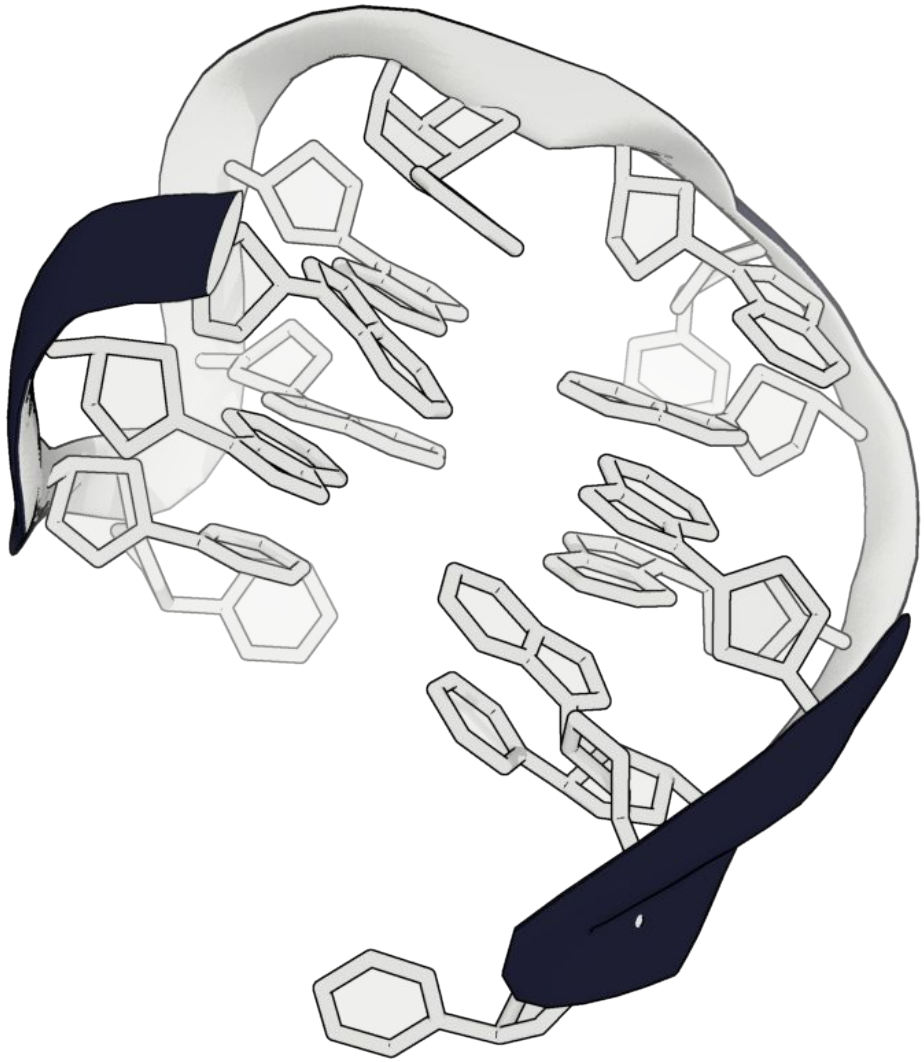
ДНК-наноклетки



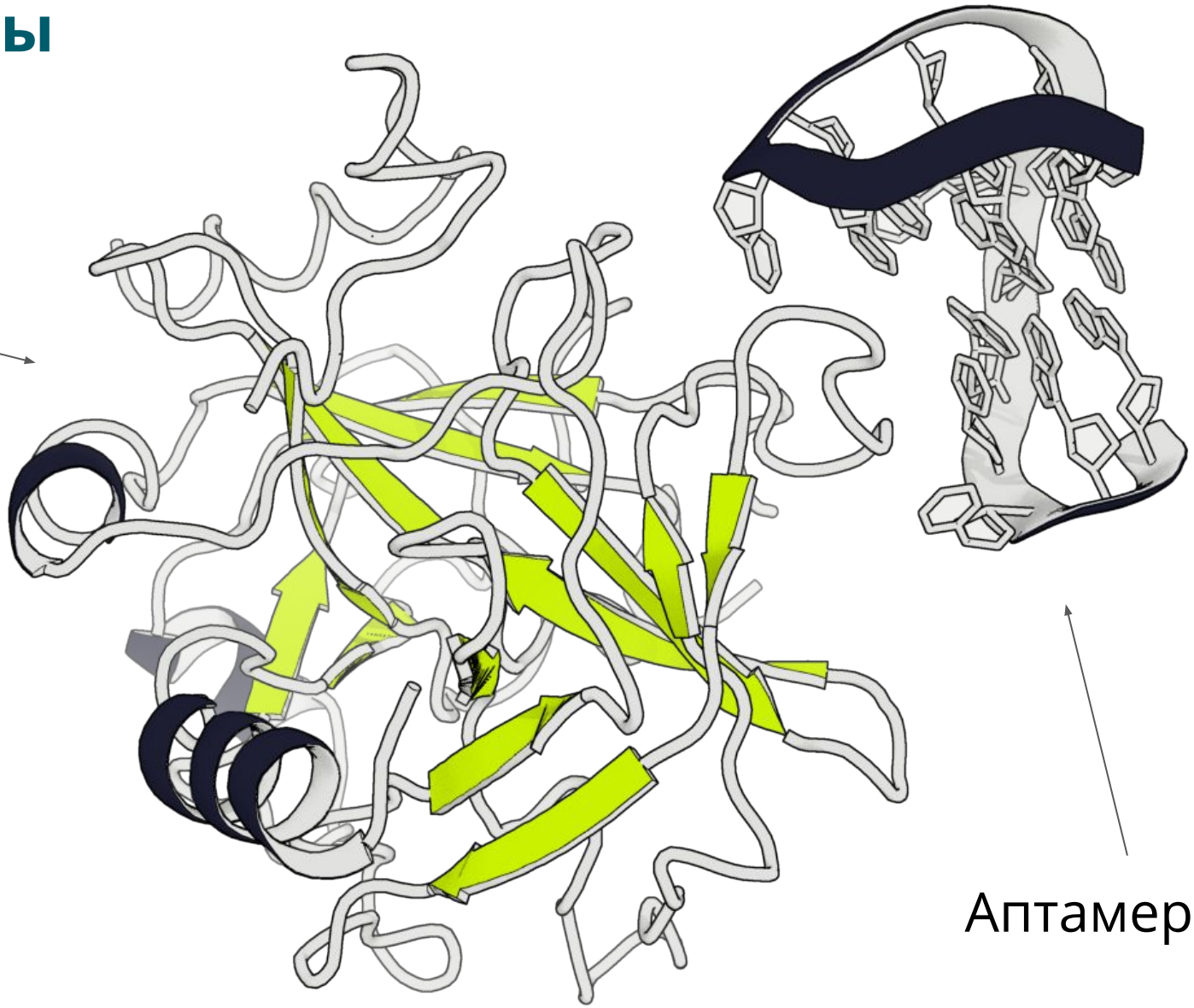
ДНК-оригамми *in silico*



Аптамеры



Аптамеры



Аптамеры