



ТЕРПЕНЫ И СТЕРОИДЫ

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Kazan State
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Тмин



Мята перечная

Department of chemistry

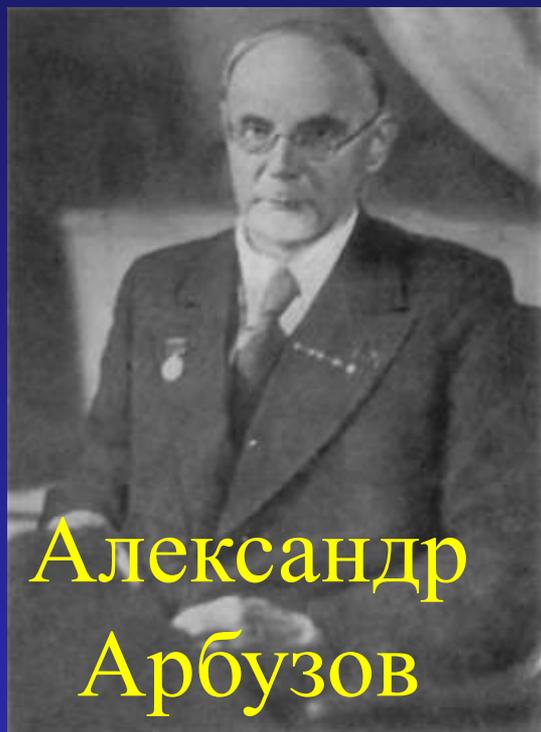
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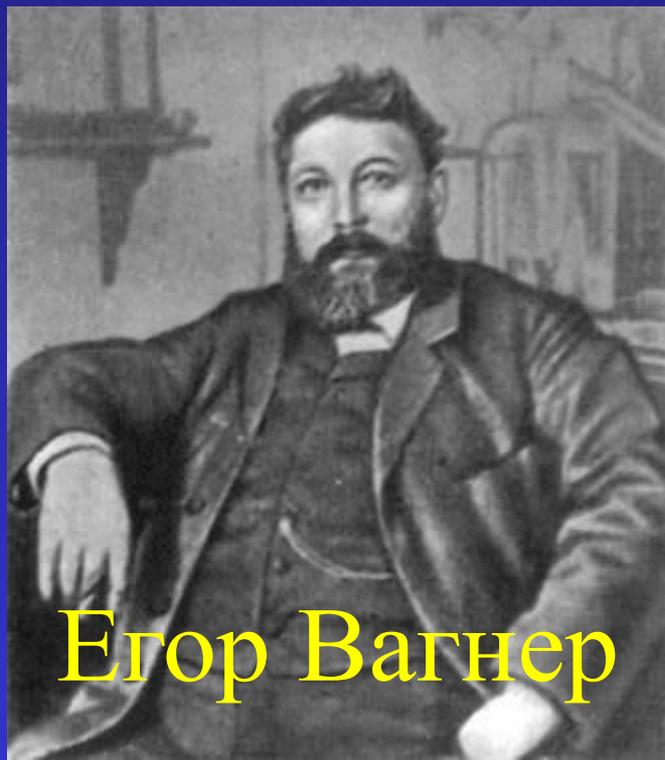
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Medical University





Александр
Арбузов



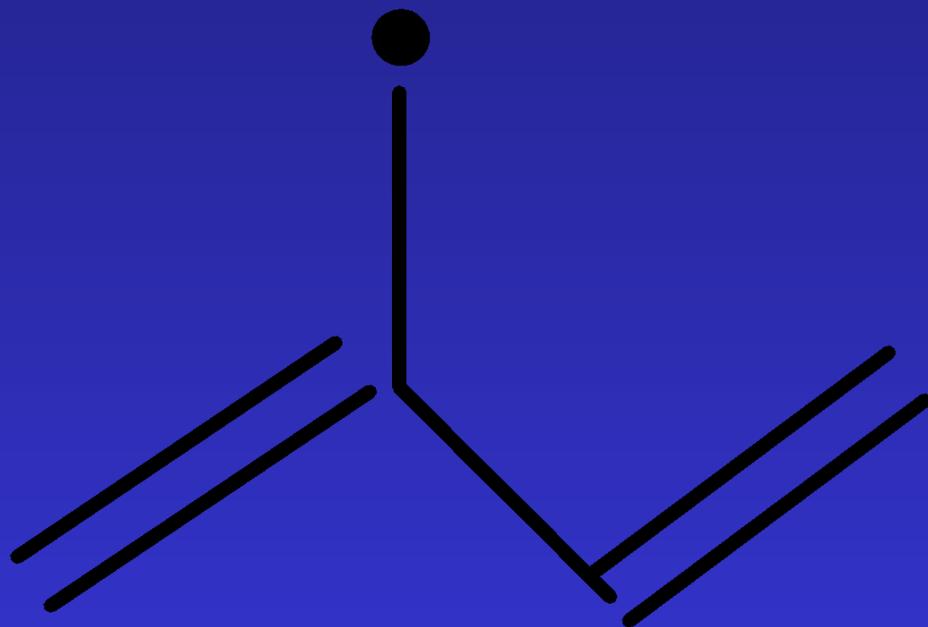
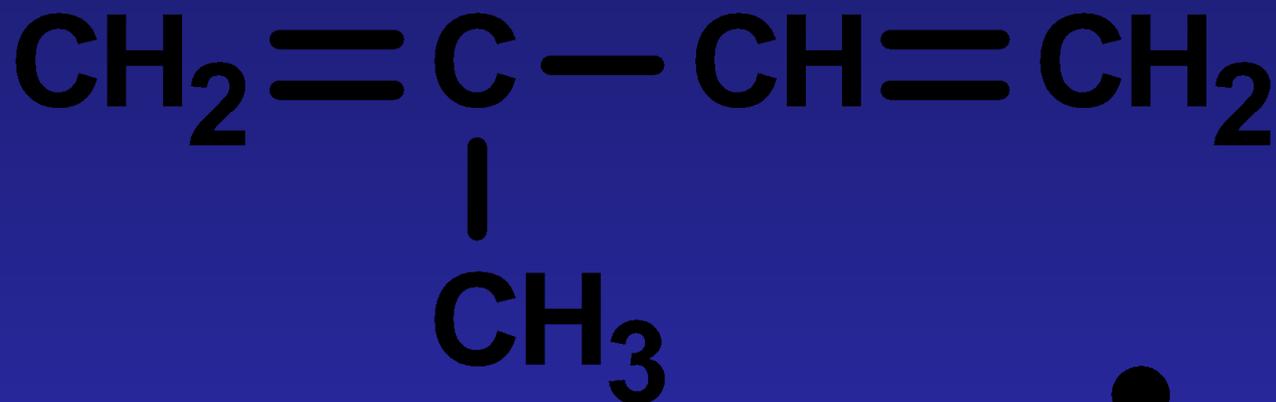
Егор Вагнер



Борис
Арбузов



2-метилбутадиен-1,3 (IUPAC) или изопрен





Монотерпены



Сесквитерпены



Дитерпены



Тритерпены



Тетратерпены

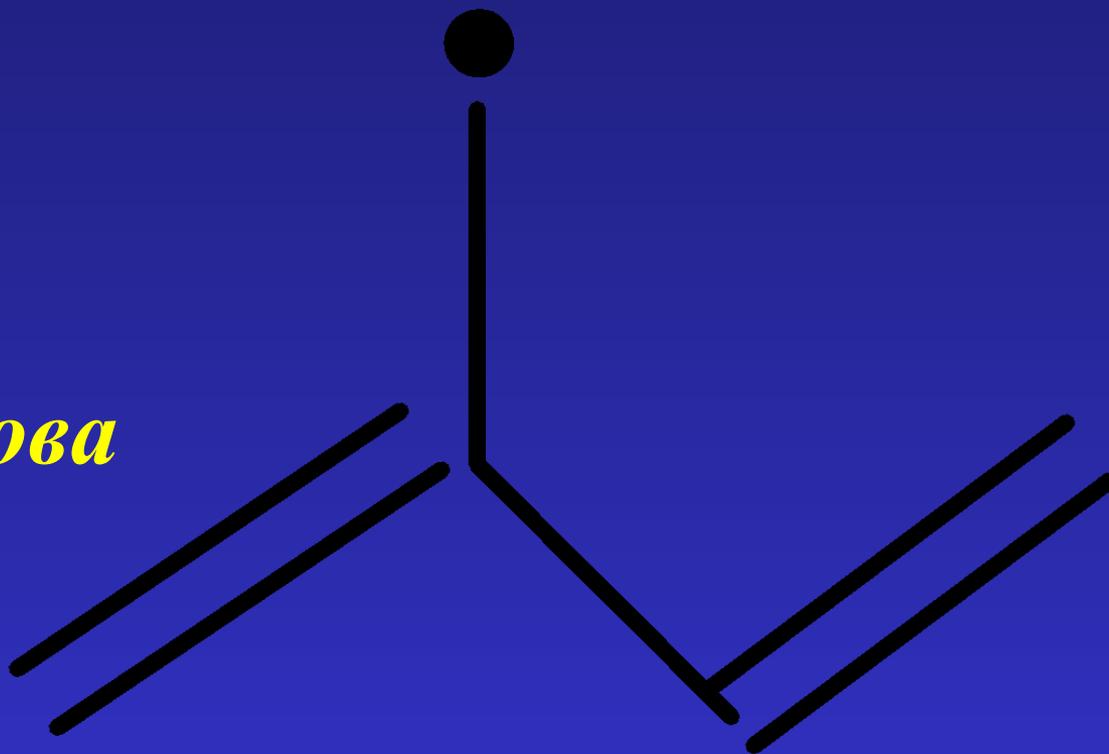


Политерпены





голова

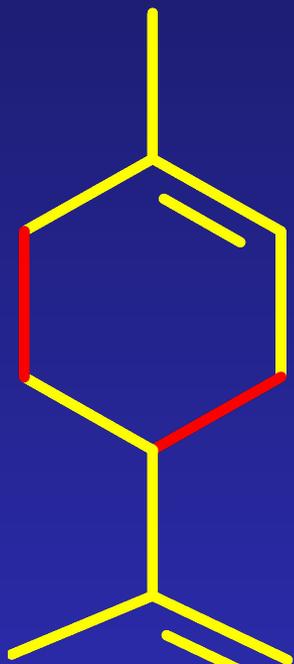


хвост

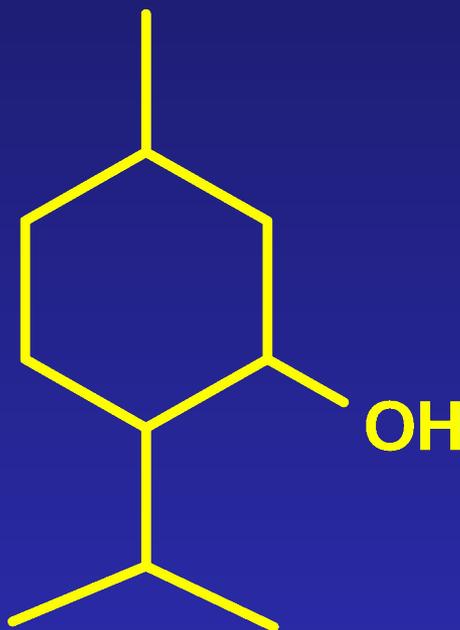




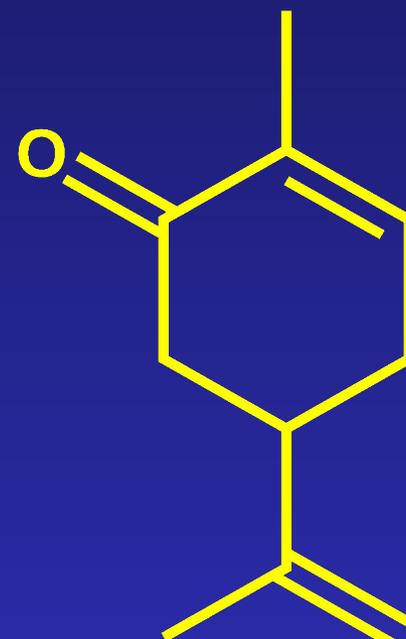
Лимонен



Ментол



Карвон



Тмин



Ментол



наиболее устойчивый из
оптических изомеров с
экваториальным расположением
всех заместителей

Количество
ВОЗМОЖНЫХ
ОПТИЧЕСКИХ ИЗОМЕРОВ

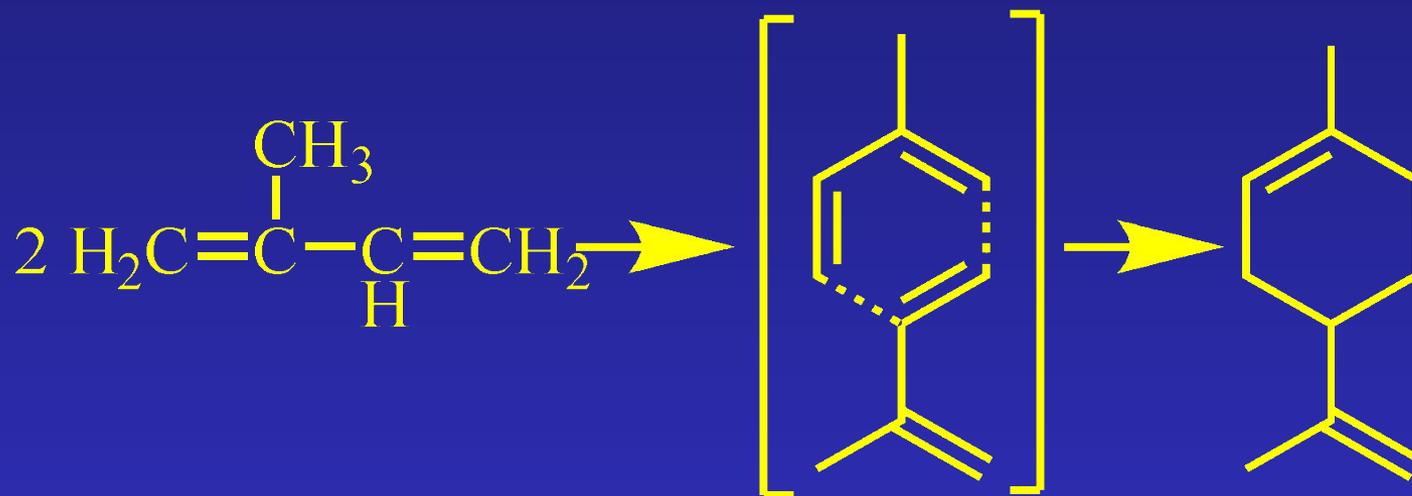
равно 2^n

$$n=3$$

Следовательно,

$$2^3 = 8$$

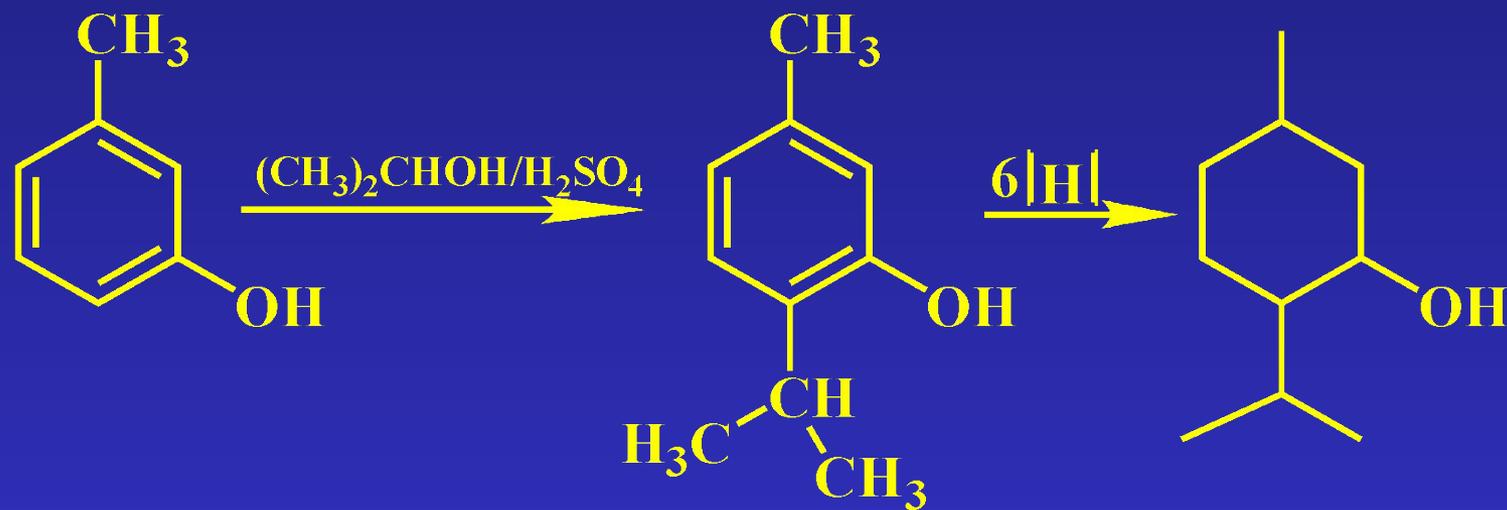
Диеновый синтез

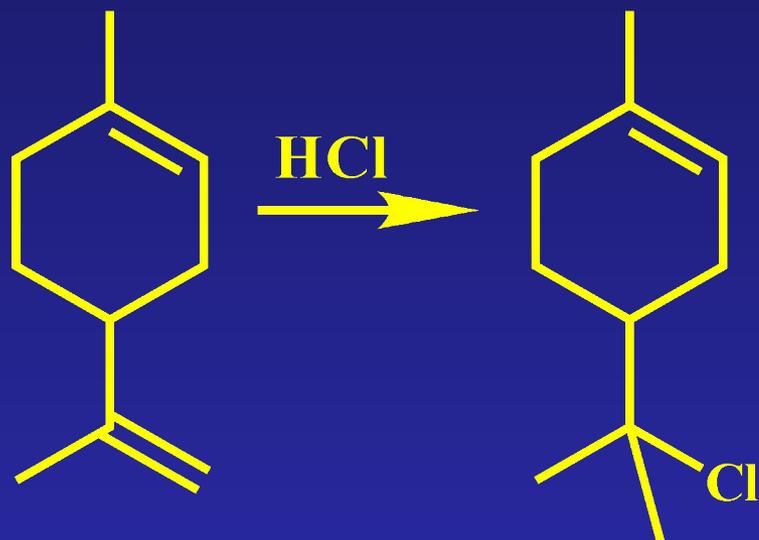


Дипентен



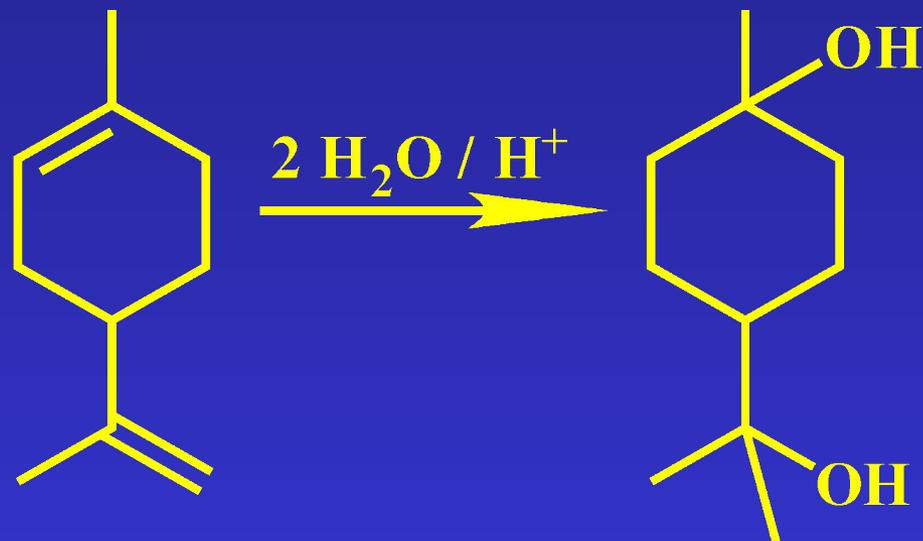
Получение рацемического ментола в промышленности





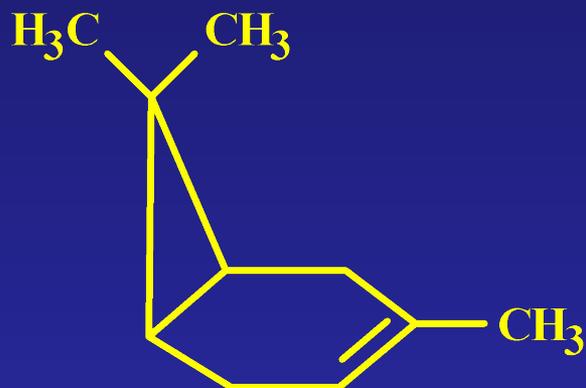
Химические свойства моноциклических монотерпенов

*в соответствии с
правилом
Марковникова*

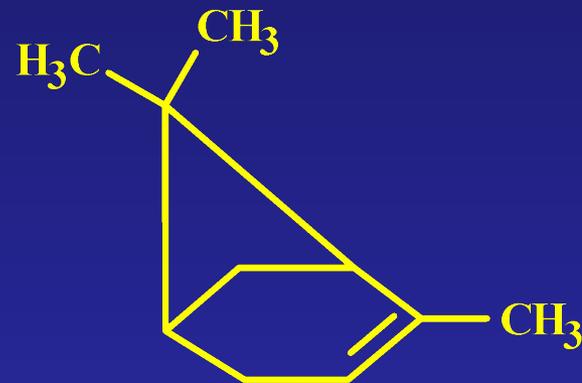




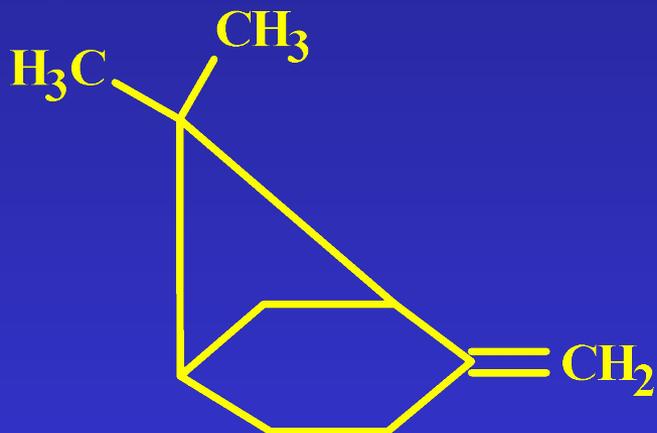
3 - карен



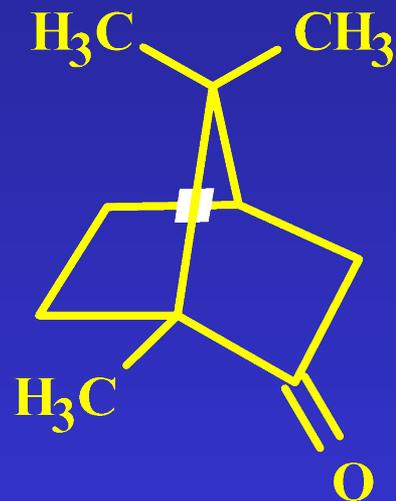
α - пинен



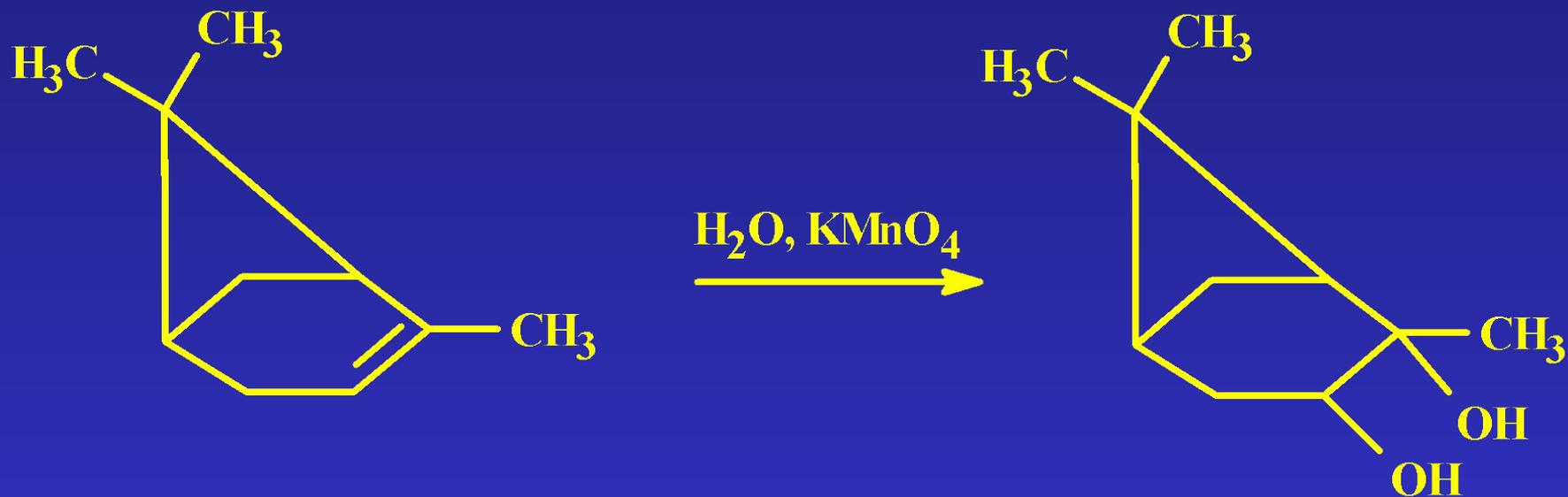
β - пинен



камфора

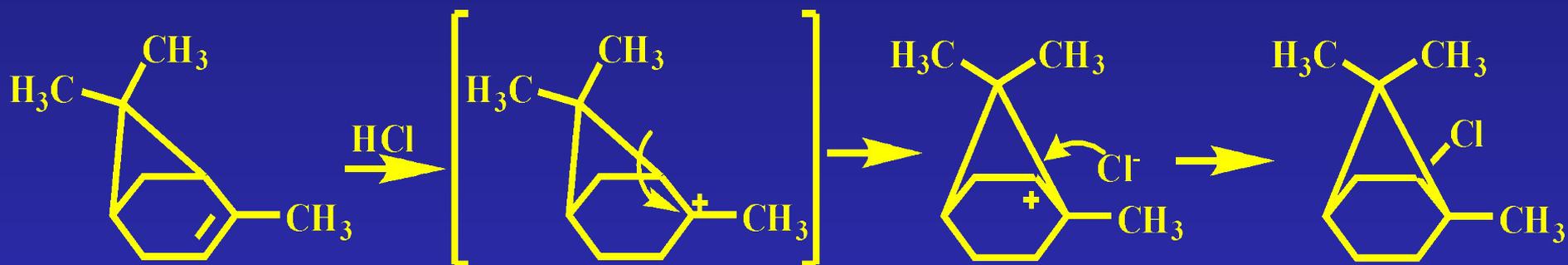


Реакция Вагнера



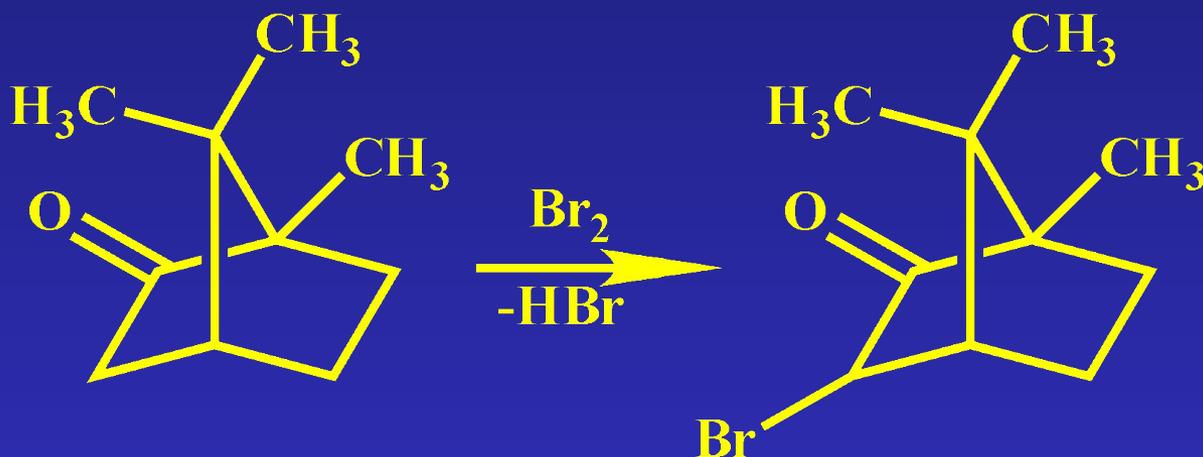


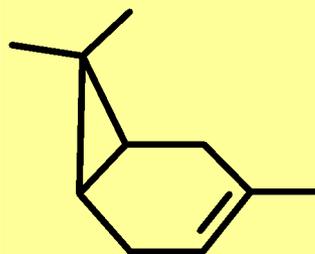
Перегруппировка Вагнера-Меервейна



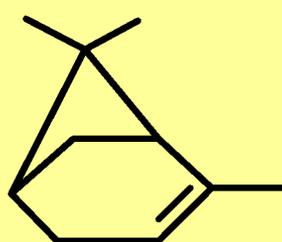


Бромирование камфоры

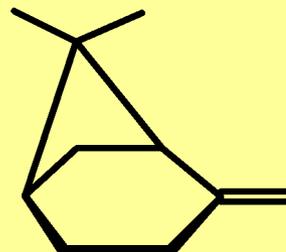




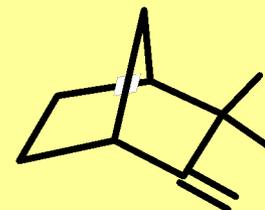
3-карен



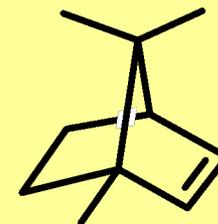
α -пинен



β -пинен



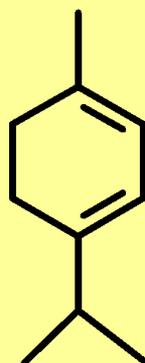
камфен



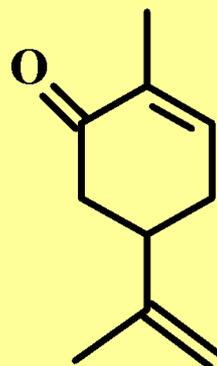
борнилен



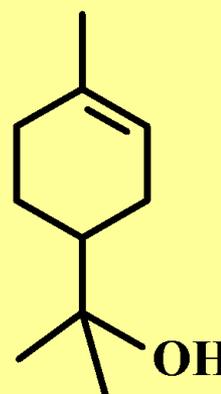
лимонен



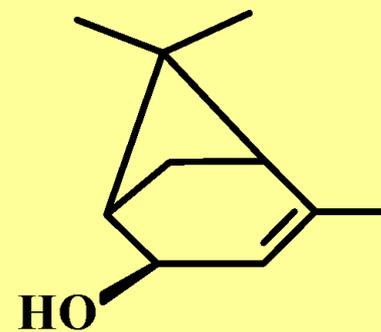
α -терпинен



карвон



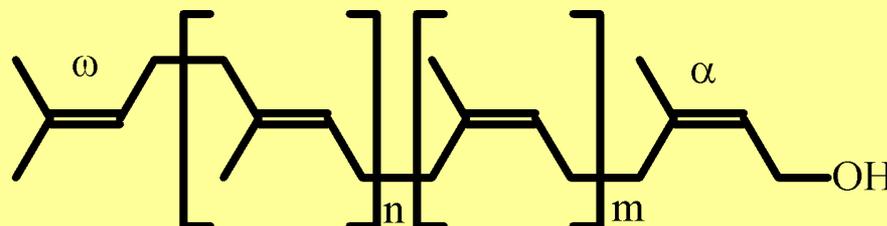
α -терпениол



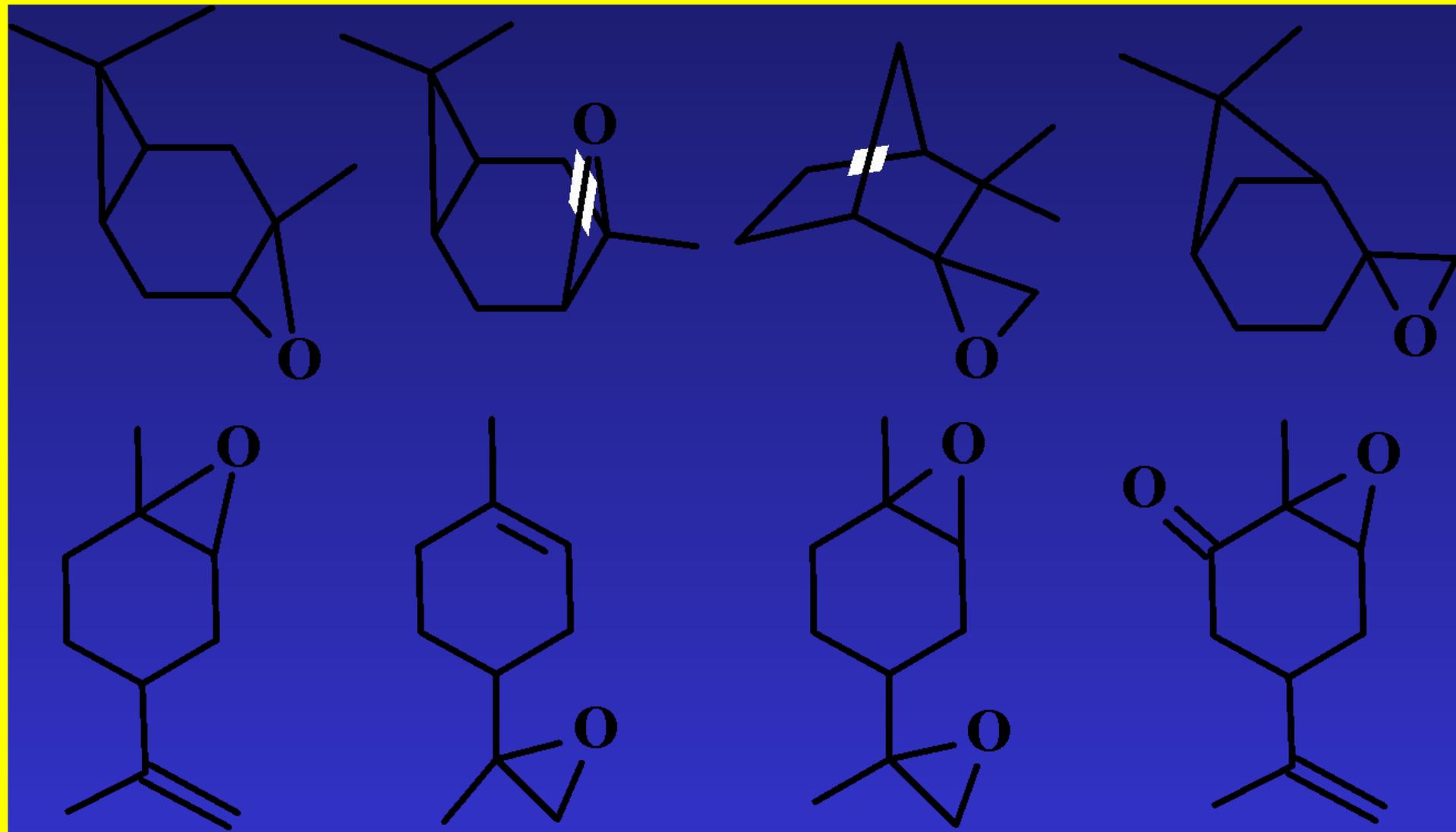
цис-вербенол

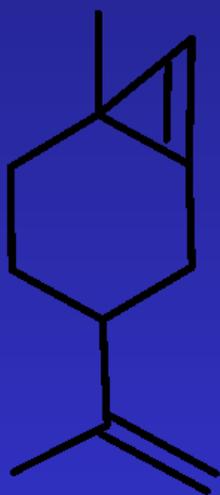
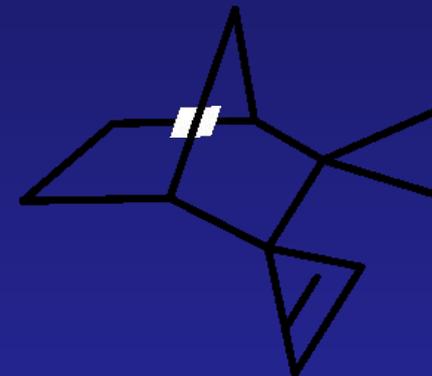
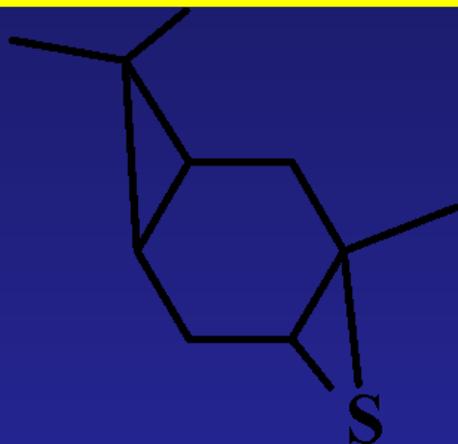
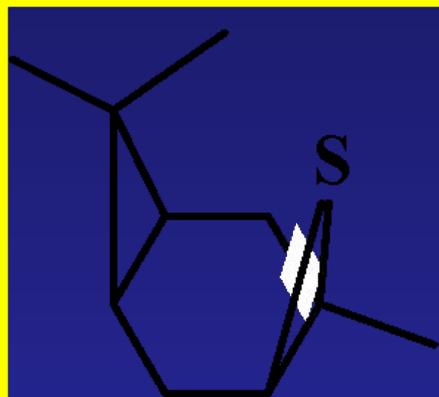


аллоцимен

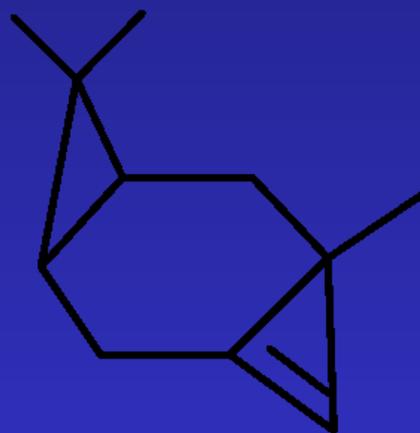


полипренол

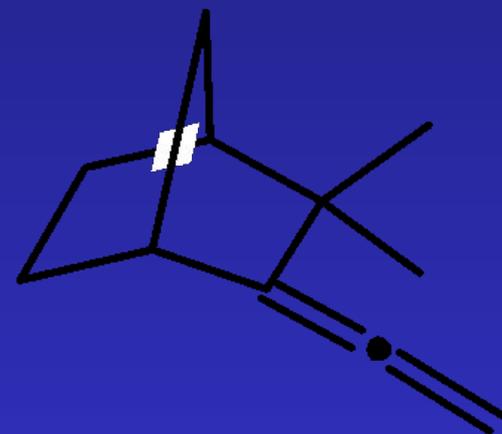


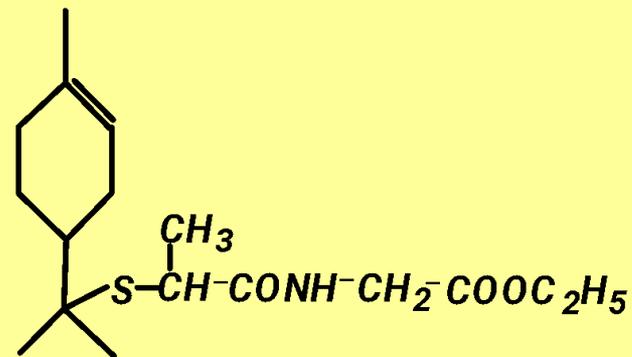
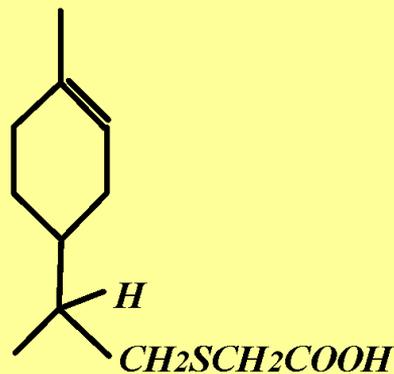
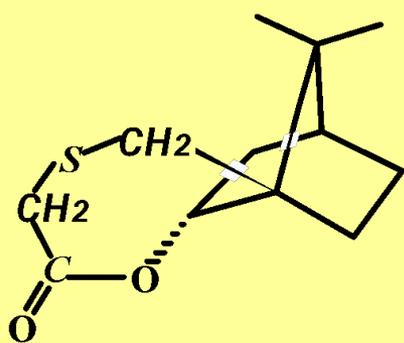
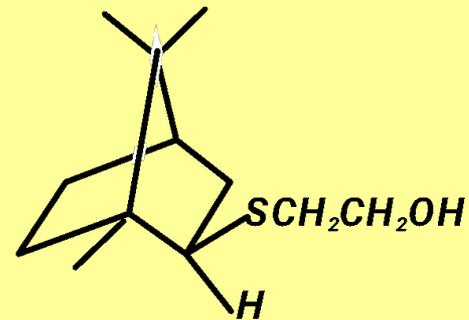
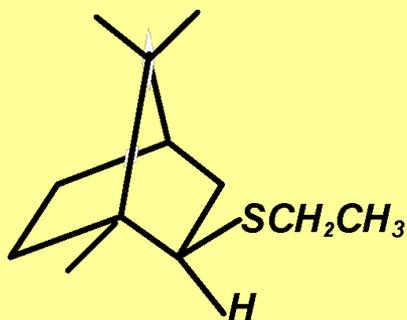
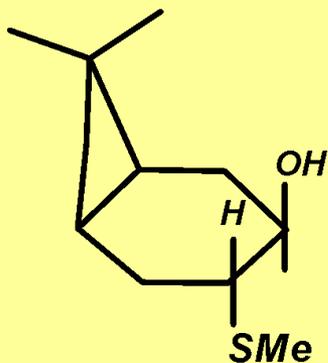
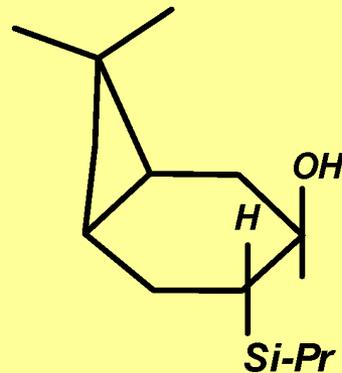
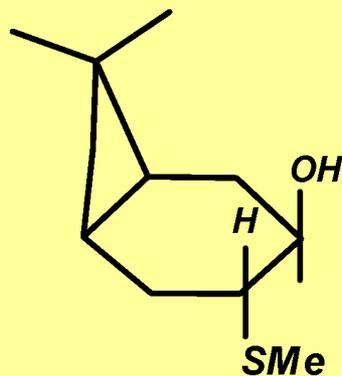


in situ



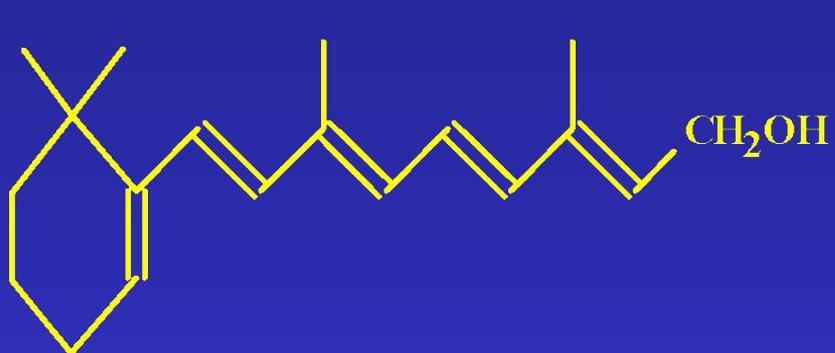
in situ



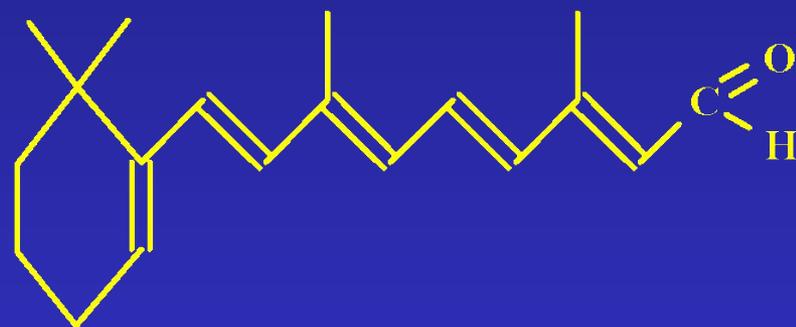




β - каротин



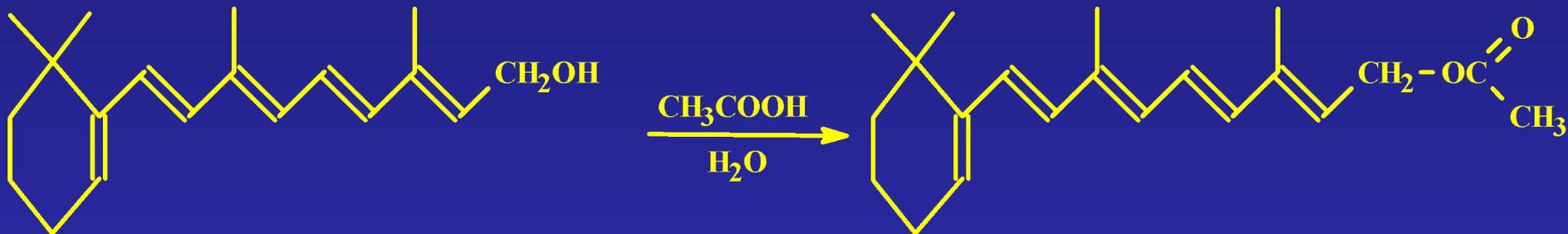
ретинол (витамин А)



ретиналь

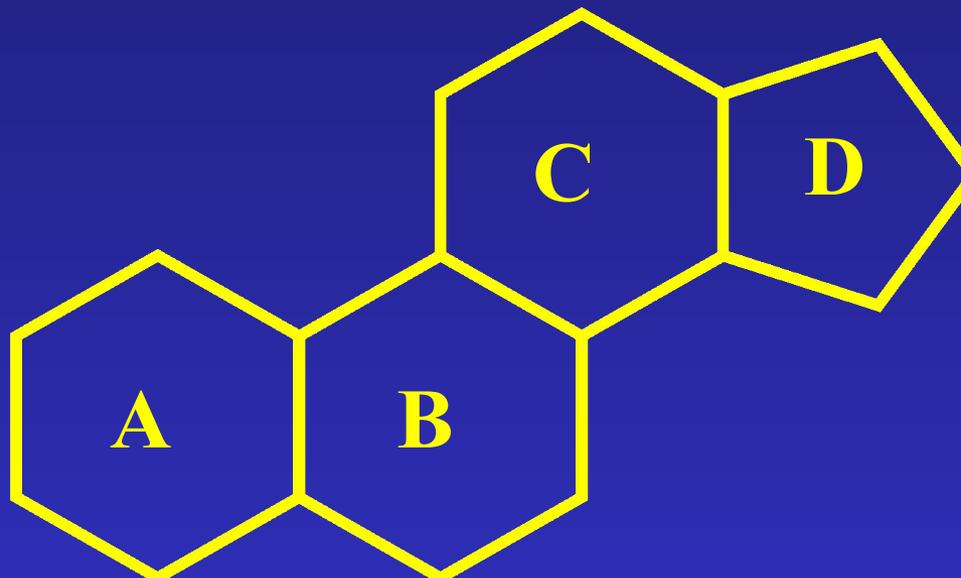


ретинолацетат



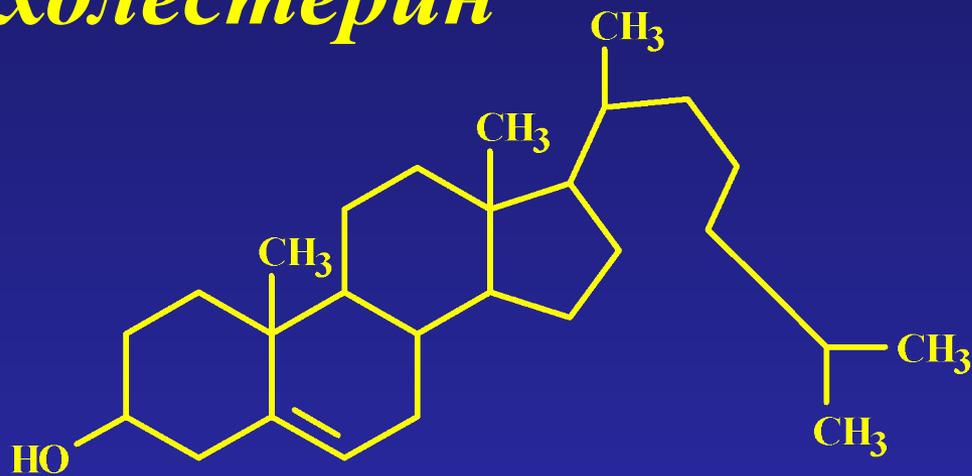


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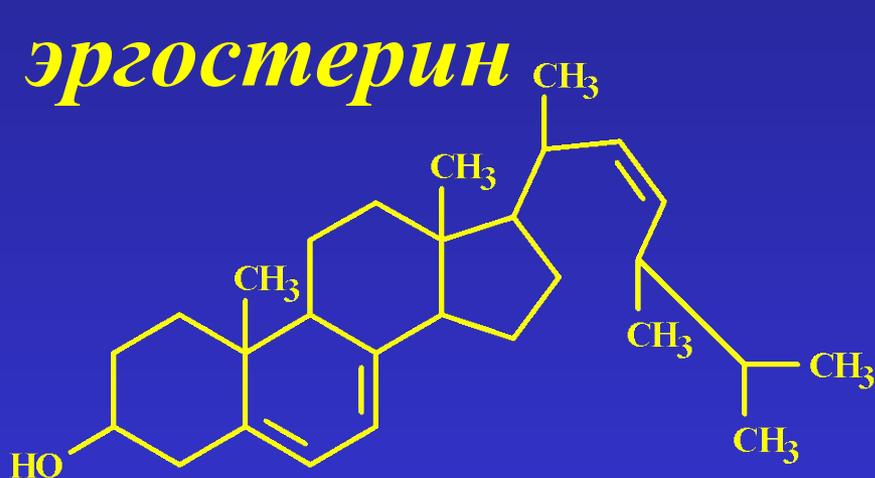




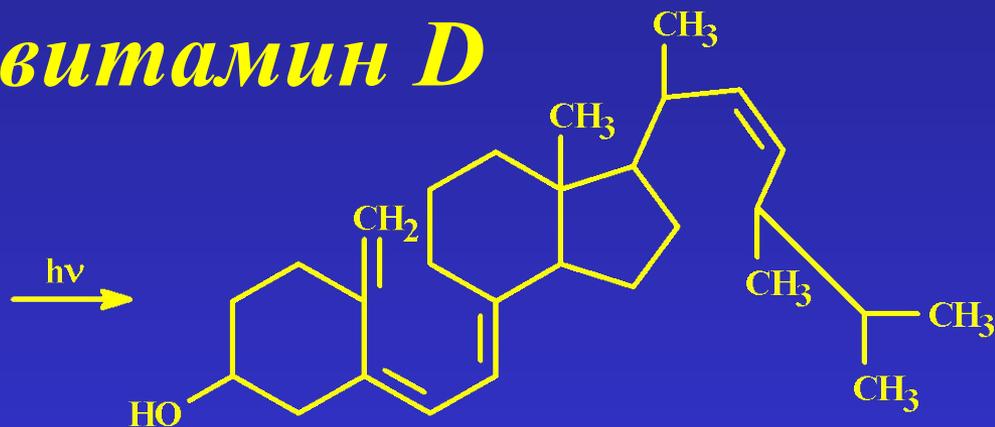
холестерин



эргостерин



витамин D





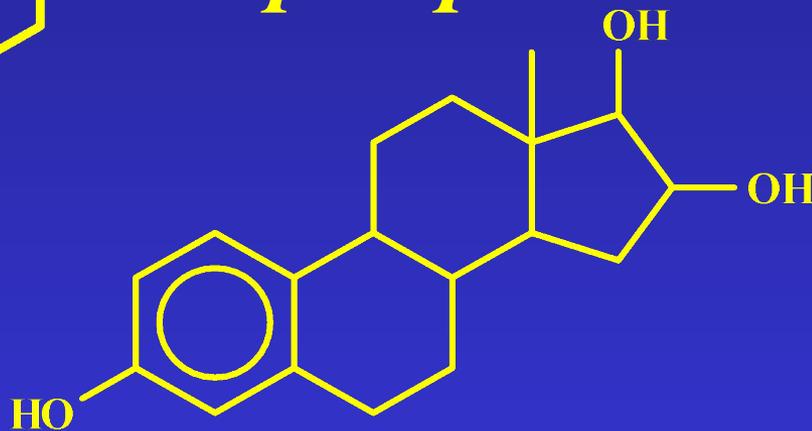
эстрон



эстрадиол

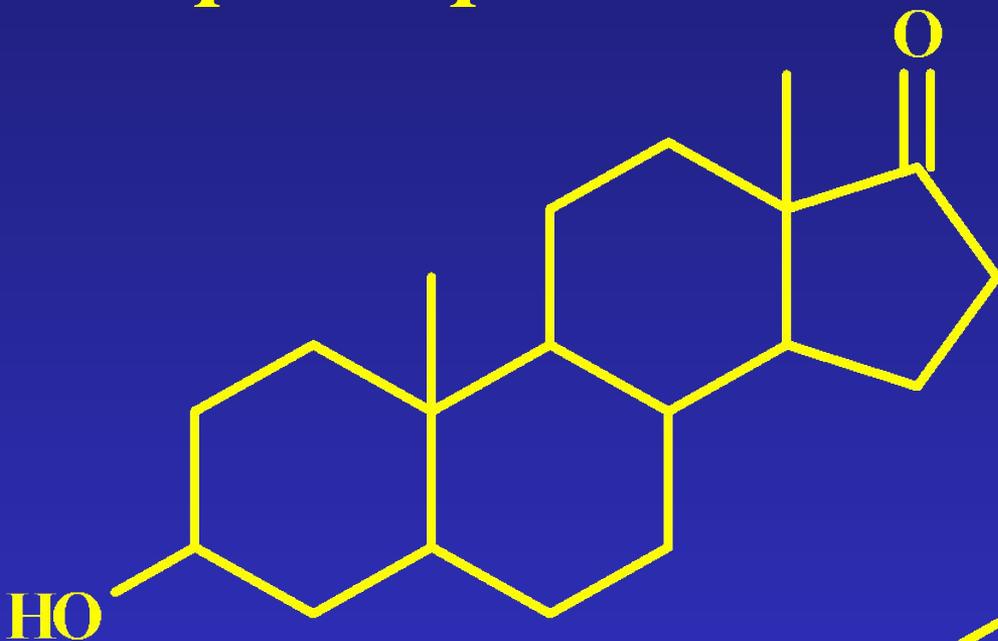


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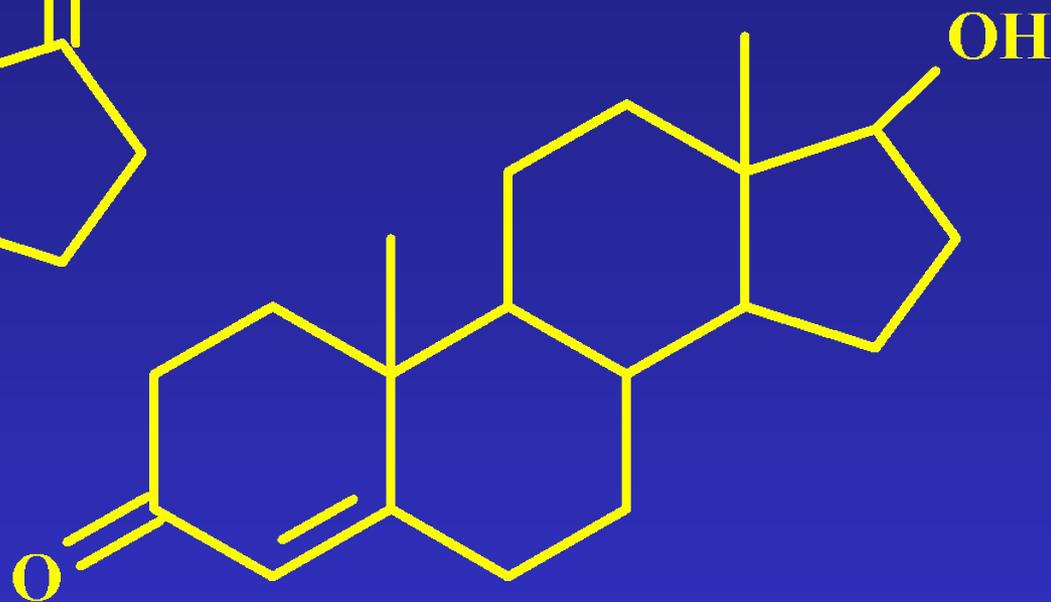


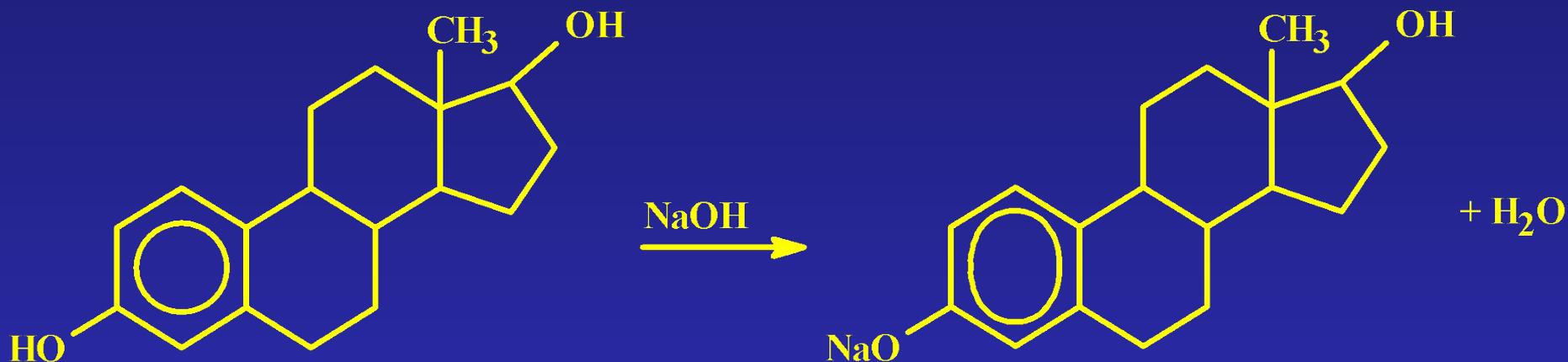


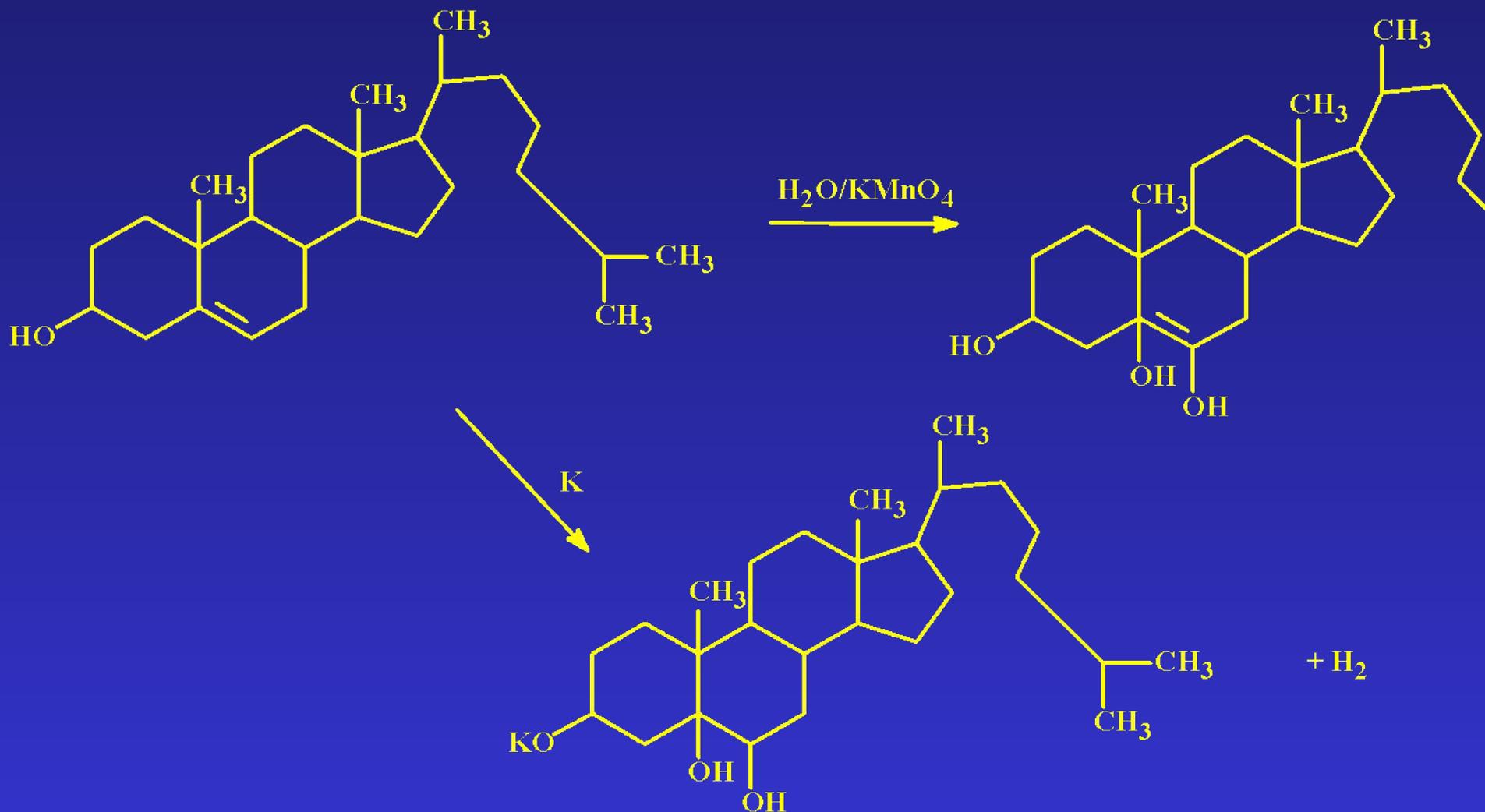
андростерон

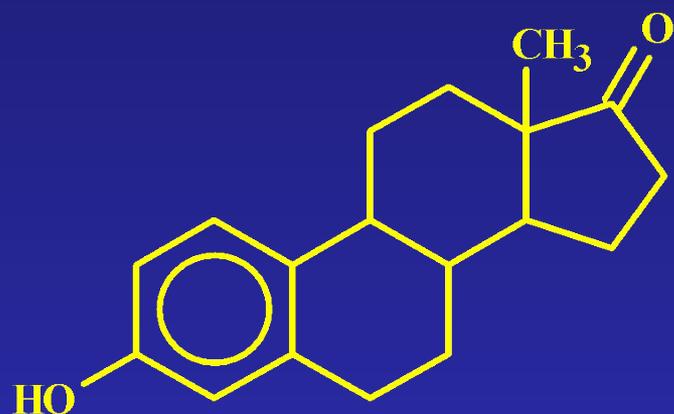


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