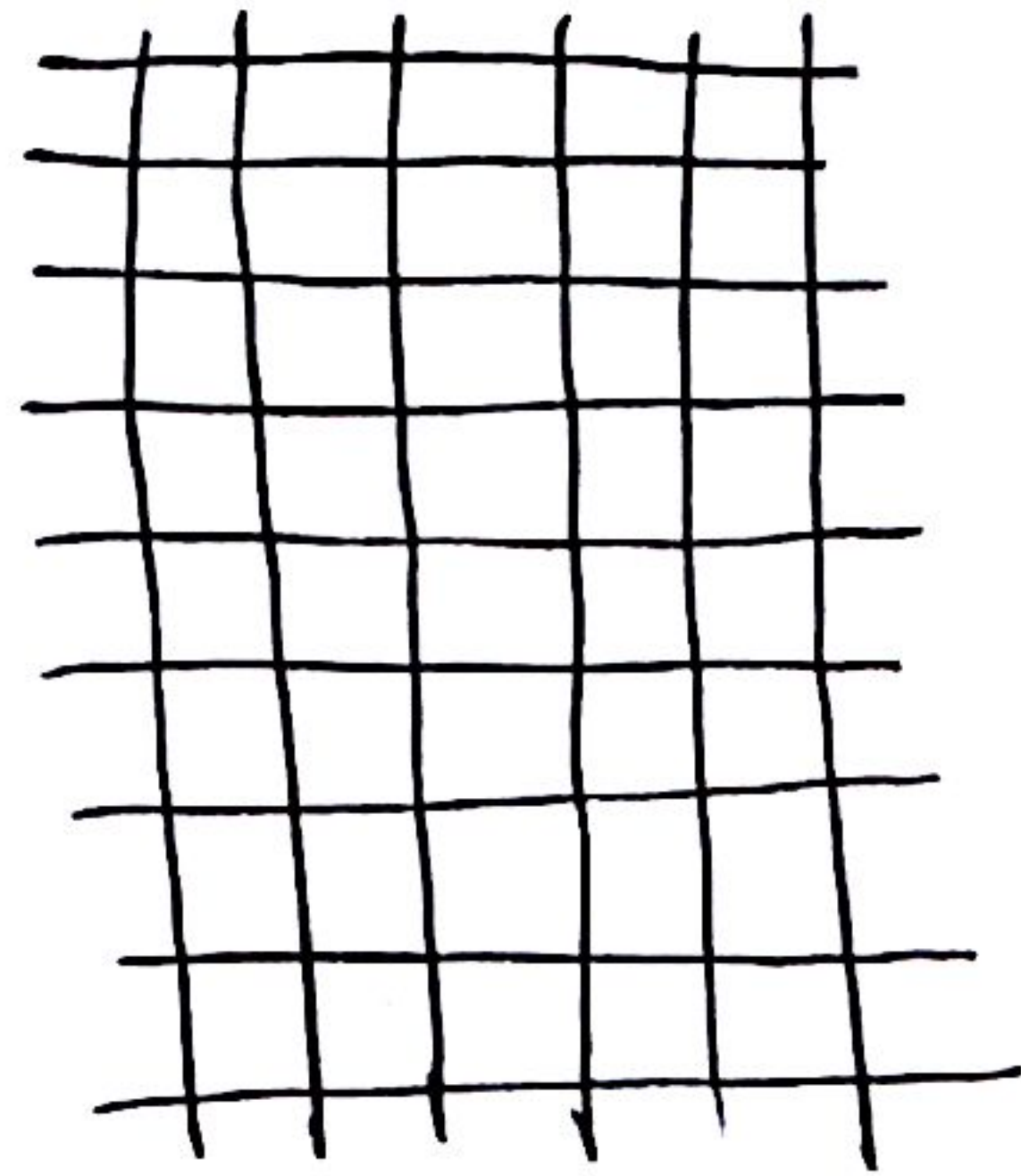


137억년 우주 진화 14강

2013. 07. 28.

복합 탄수화물 대사

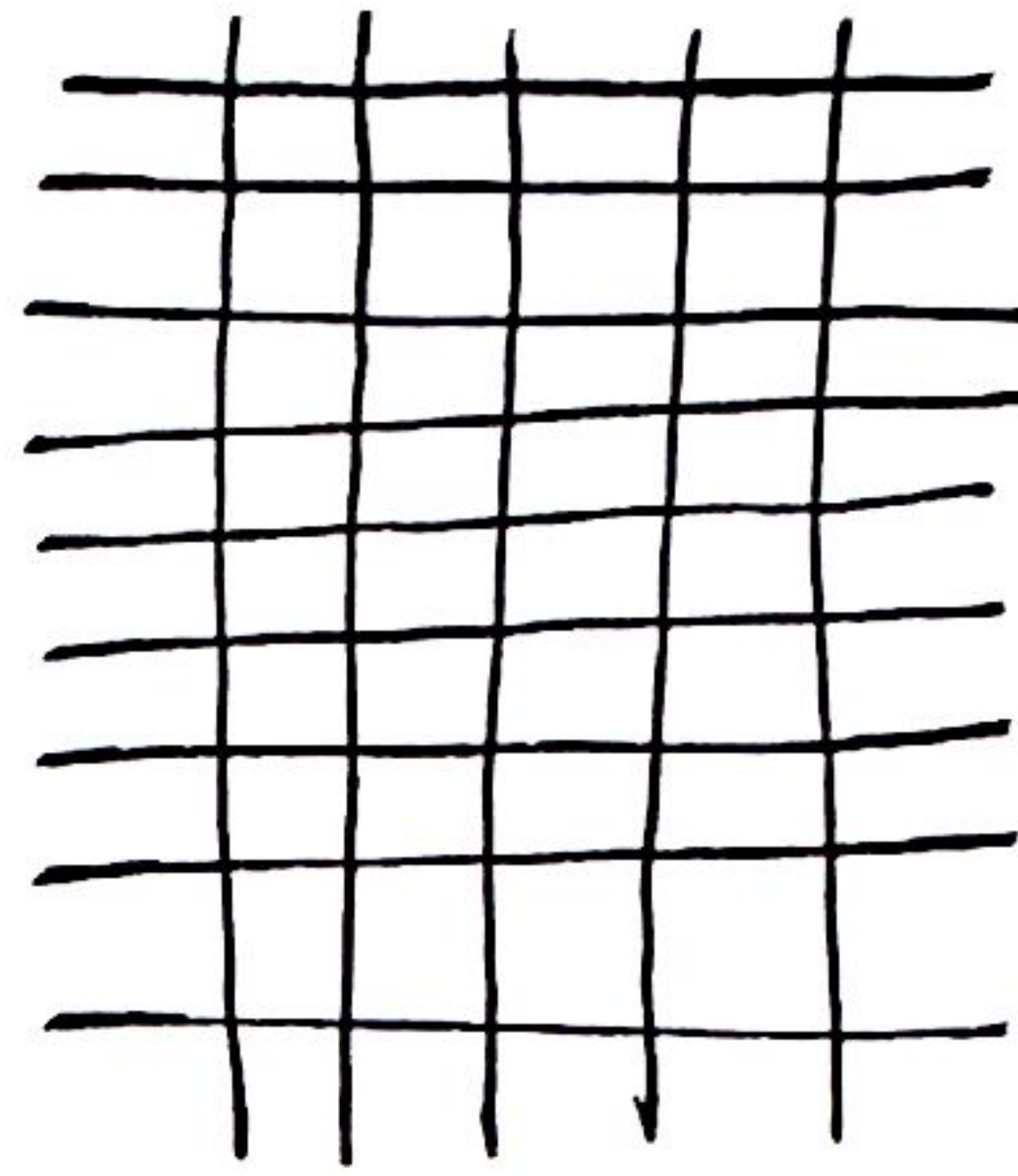


•  
은

해  
당  
작  
용

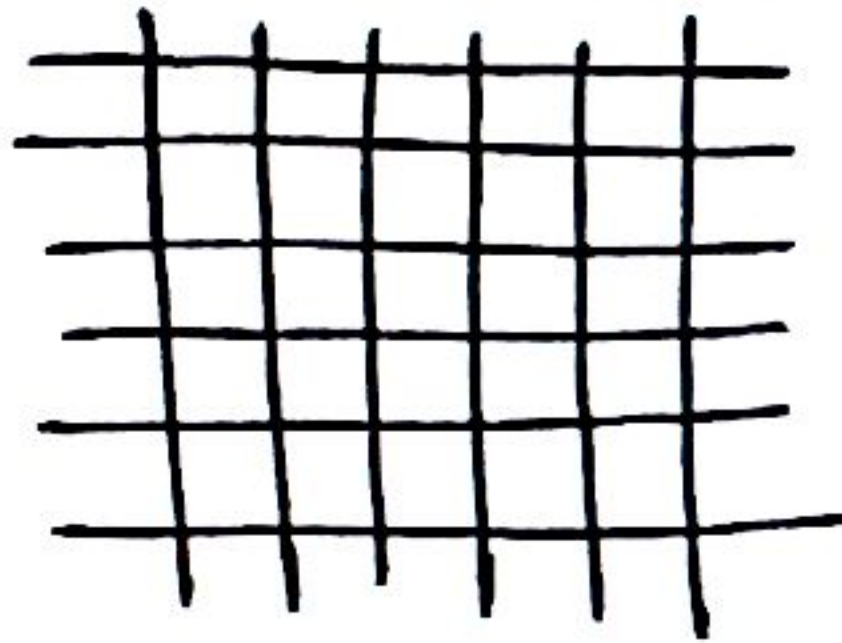
핵산 대사 -

DNA. RNA. 등

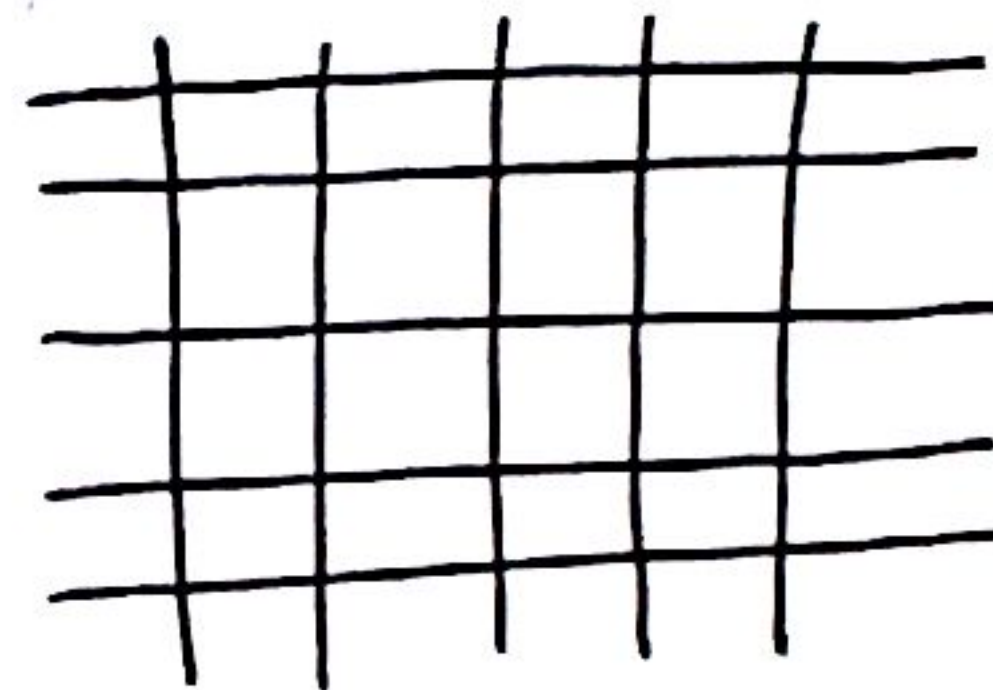


탄수화물  
대사

지질 대사 지방산

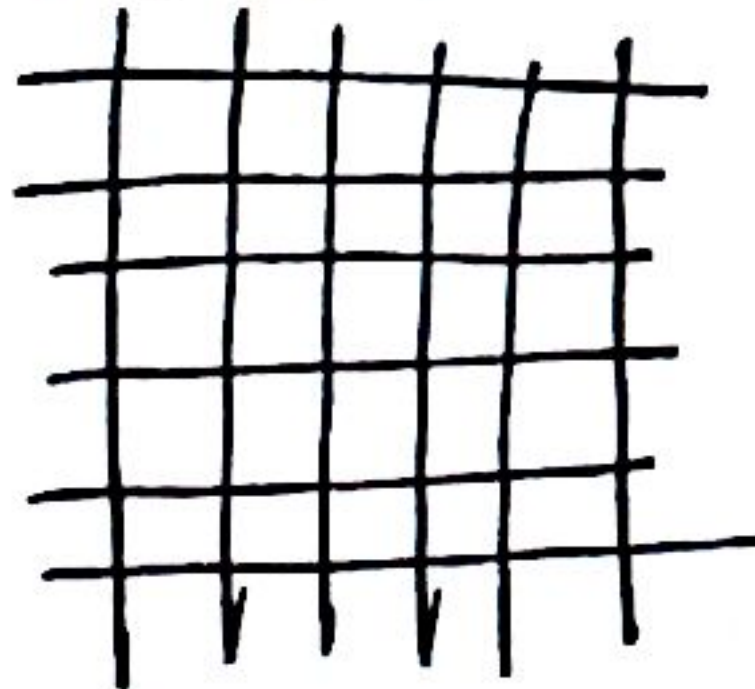


아미노산 대사



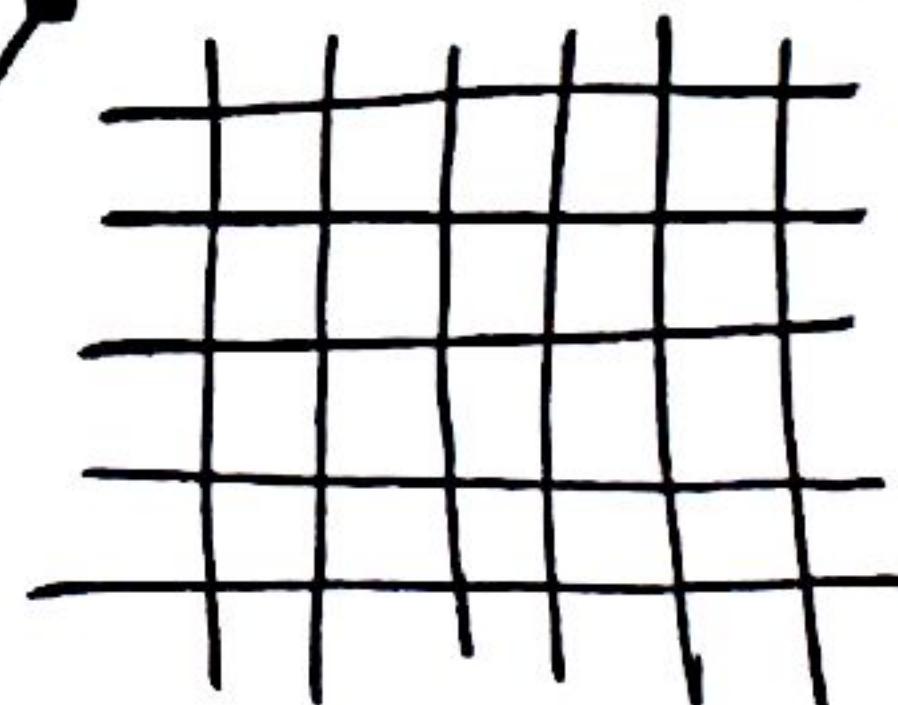
TCA

에너지 대사



비타민 대사

효소 작용





G6P  $\Rightarrow$  glucose 6-phosphate

F6P  $\Rightarrow$  fructose 6-phosphate

FBP  $\Rightarrow$  fructose 1,6-bisphosphate

G3P  $\Rightarrow$  glyceraldehyde 3-phosphate

BPG  $\Rightarrow$  phosphoglycerate 1,3-bisphosphate

PEP  $\Rightarrow$  phosphoenolpyruvate

DHAP  $\Rightarrow$  dihydroxyacetone phosphate

3탄당 - triose

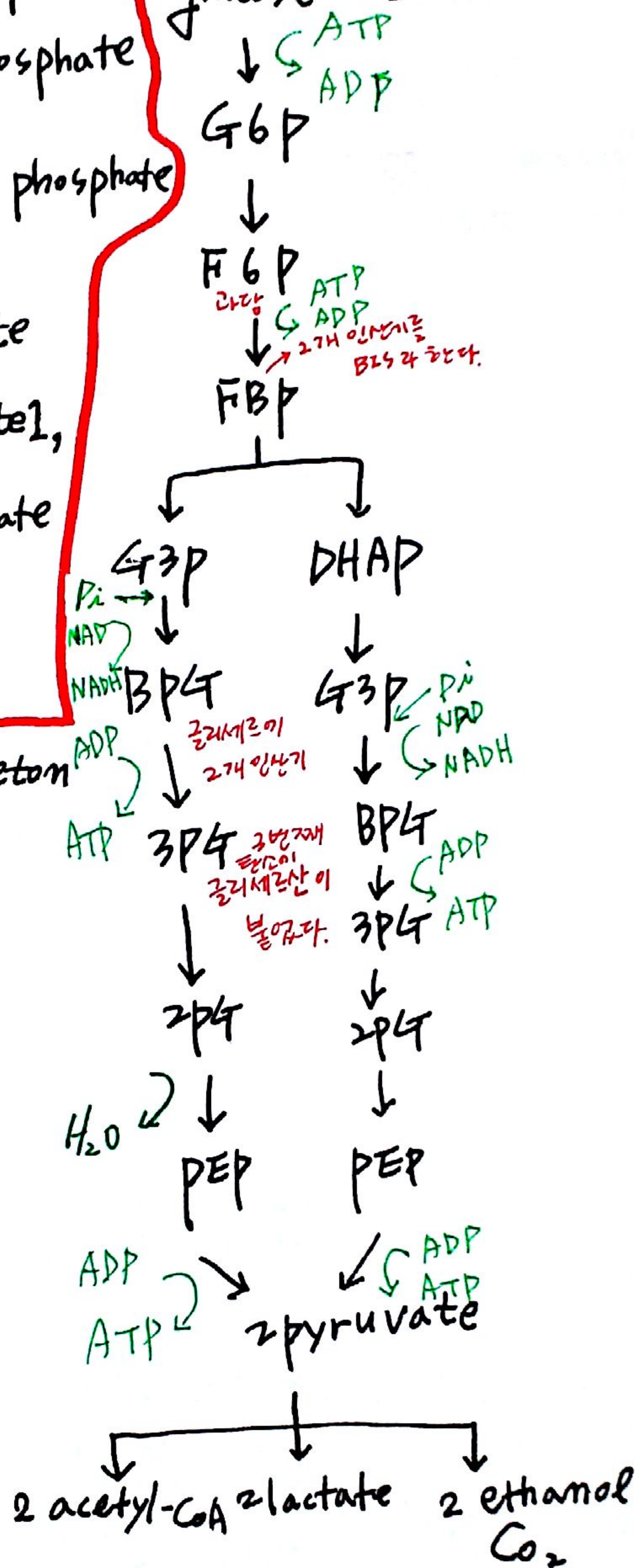
4탄당 - tetrose

5탄당 - pentose

6탄당 - hexose

7탄당 - heptose

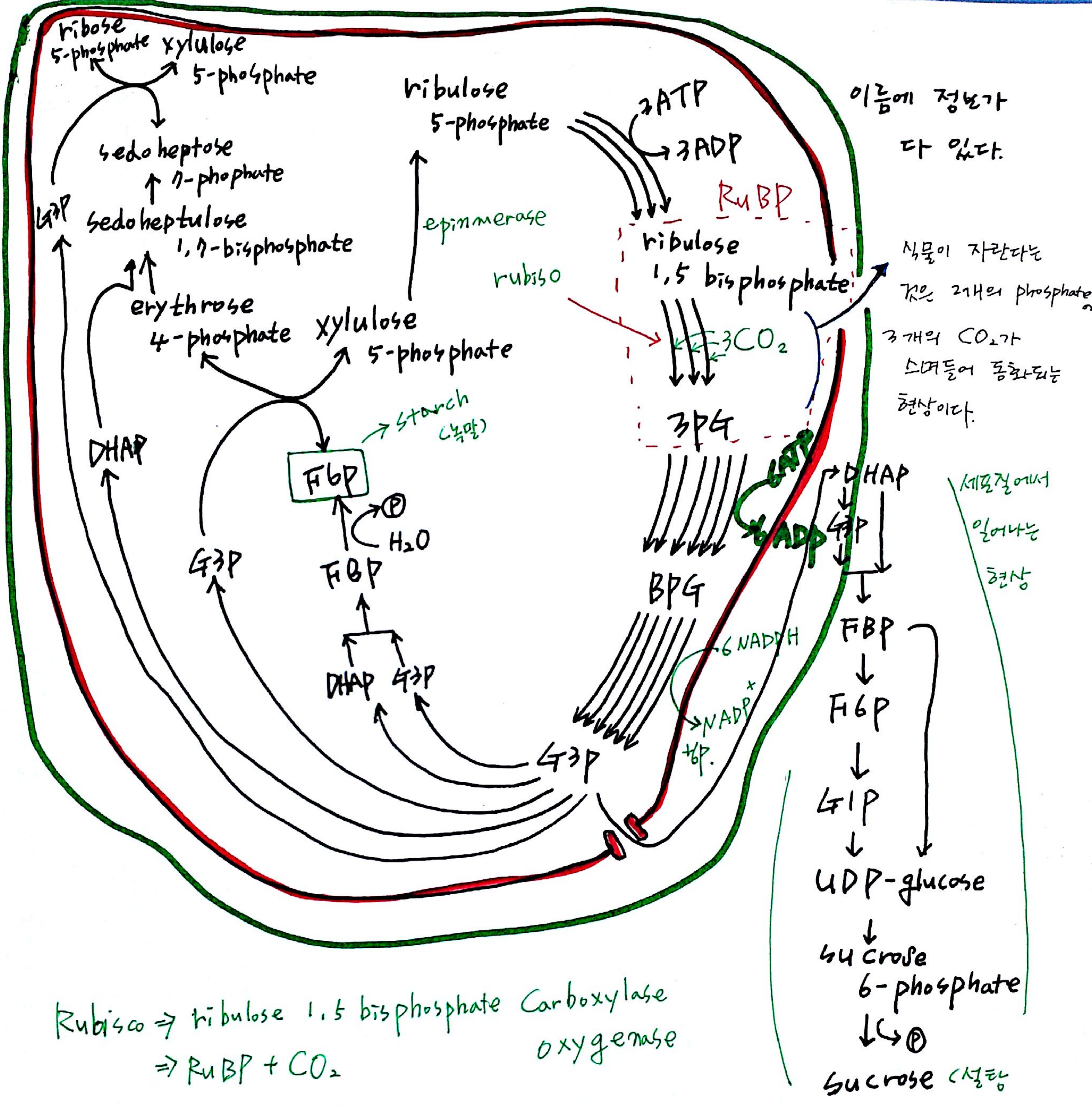
glucose (포도당)



포도당은 3, 4, 5, 6, 7이  
관한 이야기이다.  
숫자를 반드시 붙여야  
한다.

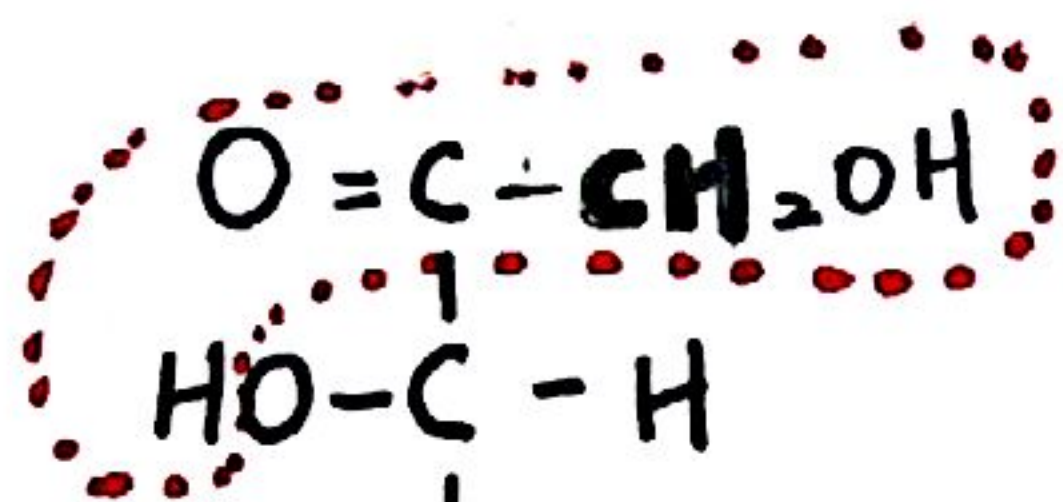
유발성 당뇨병  
처음 만들어진 병종이서  
몇가지가 서로  
병행해다가 어느  
정도부터는 돌아갈수  
없는 병을 건넌다.  
3탄당은 "연어산"이다.



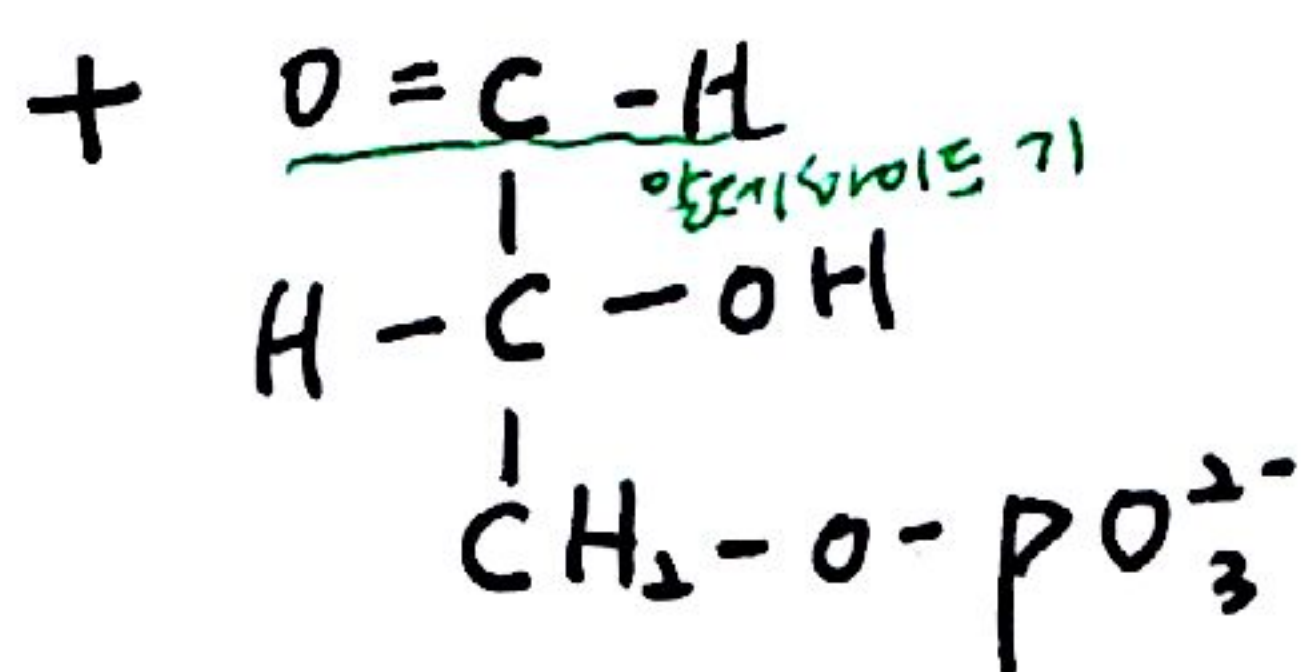


## - Calvin Circuit -



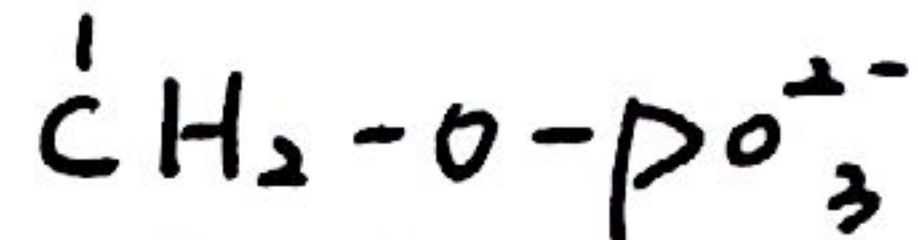
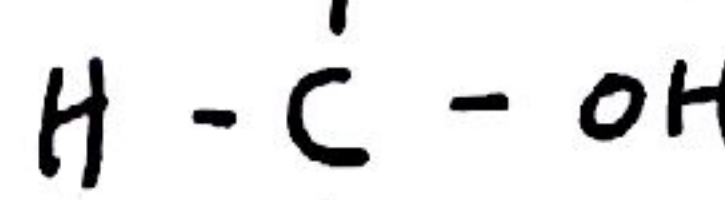
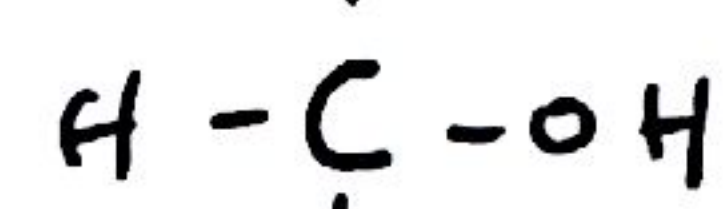
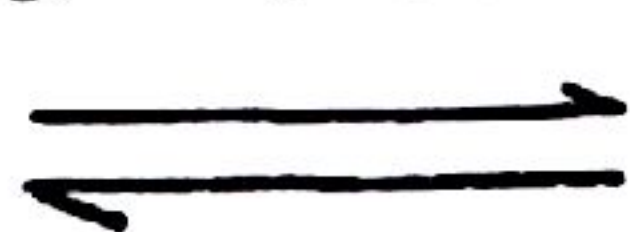


F6P

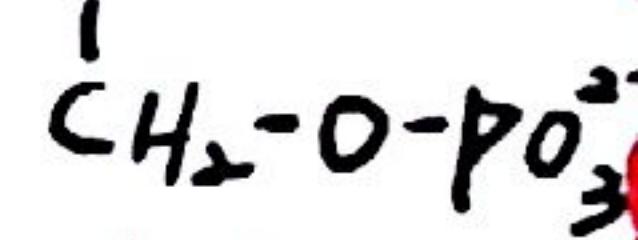
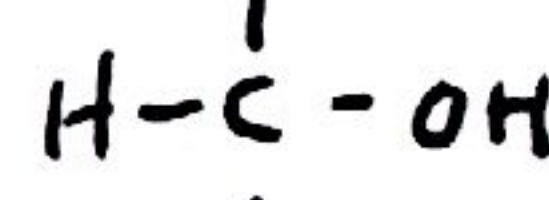
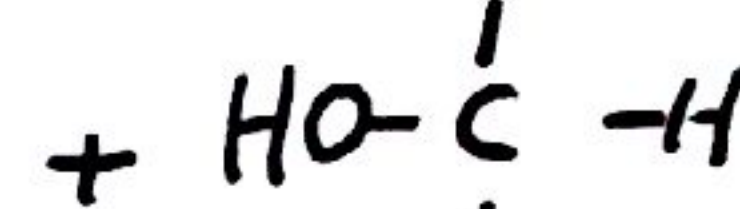
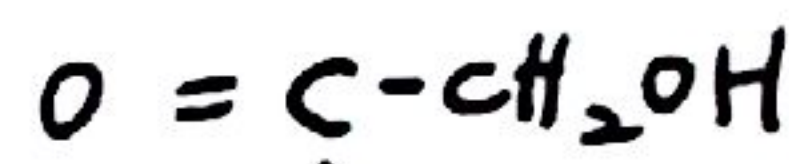


G3P

transketolase



erythrose  
4-phosphate

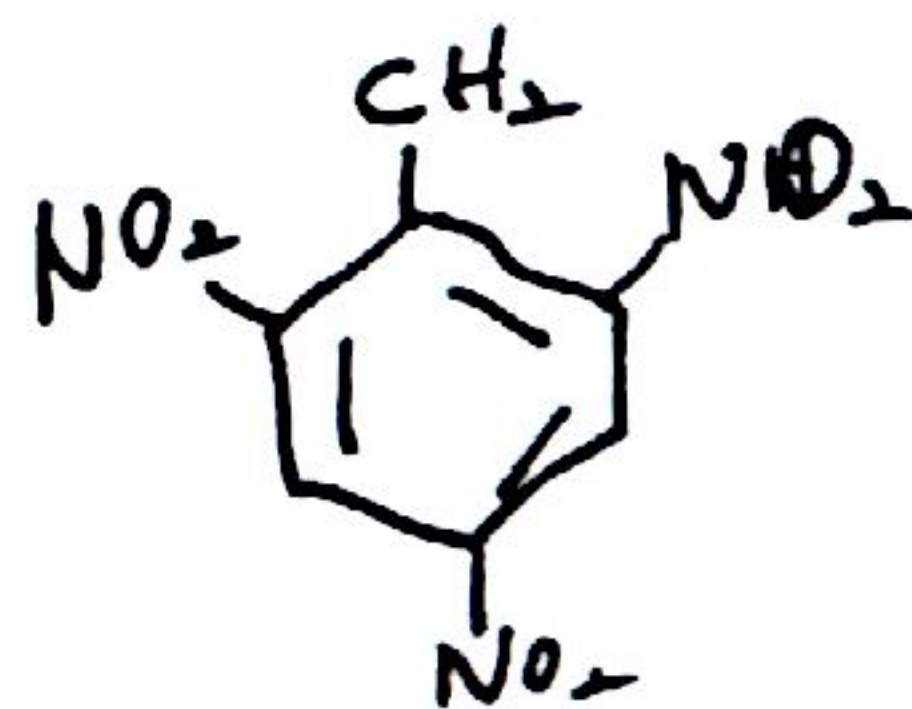


xylulose  
5-phosphate

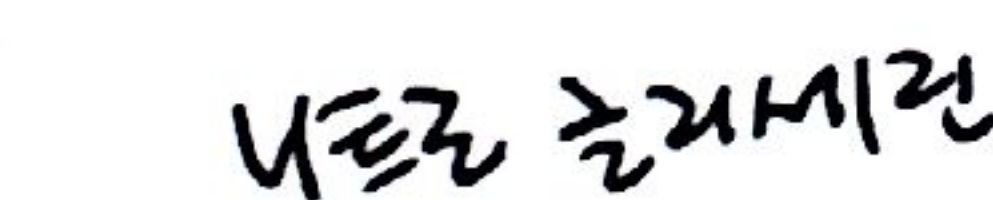
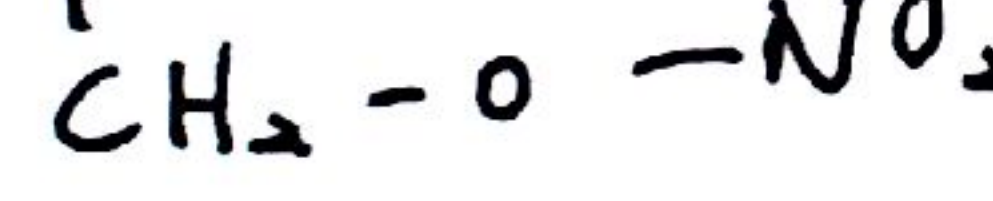
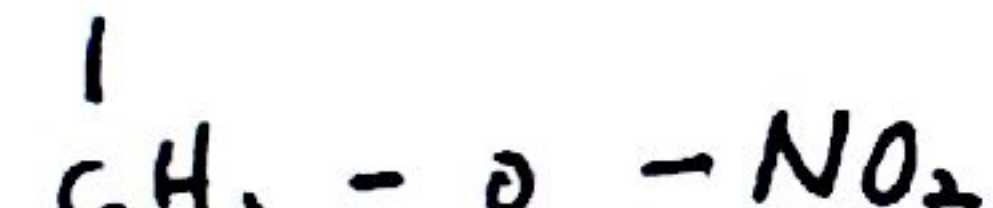
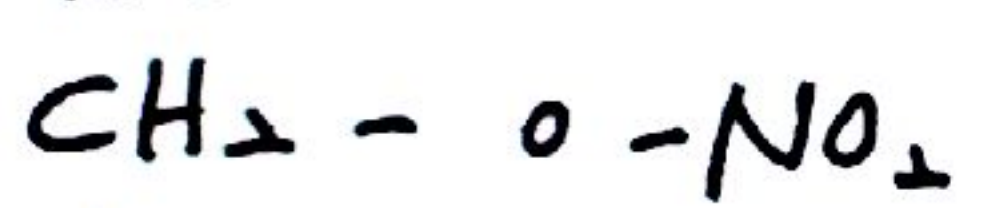
순수 포도당 120g을 뇌가 쓴다.  
뇌가 몸의 총 저장된 50% 이상을  
써버린다.

해약 - 칠레 나트륨 + H<sub>2</sub>O + H<sub>2</sub>

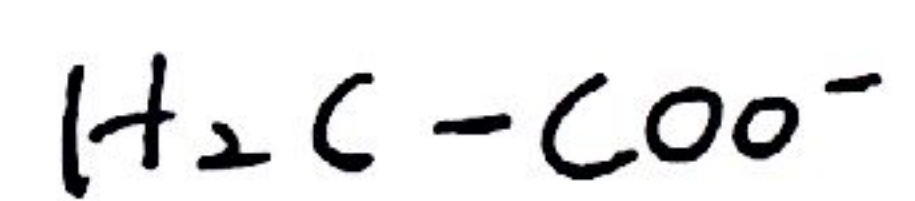
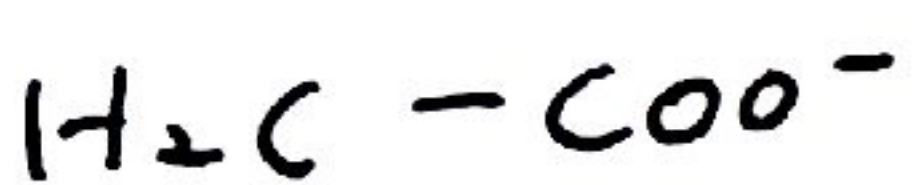
TNT



dynamite -



나트륨 질산염



나트륨

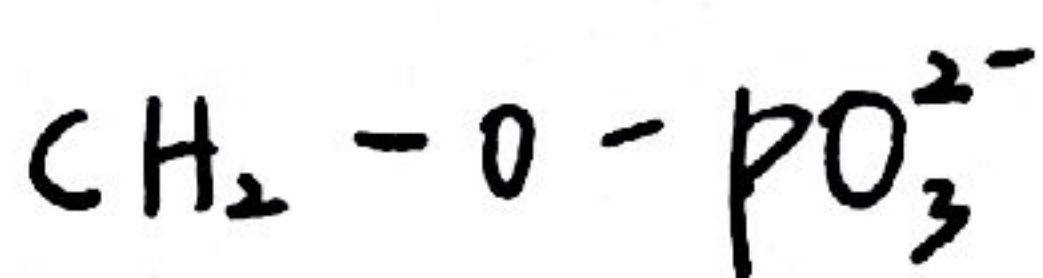
나트륨

질산염

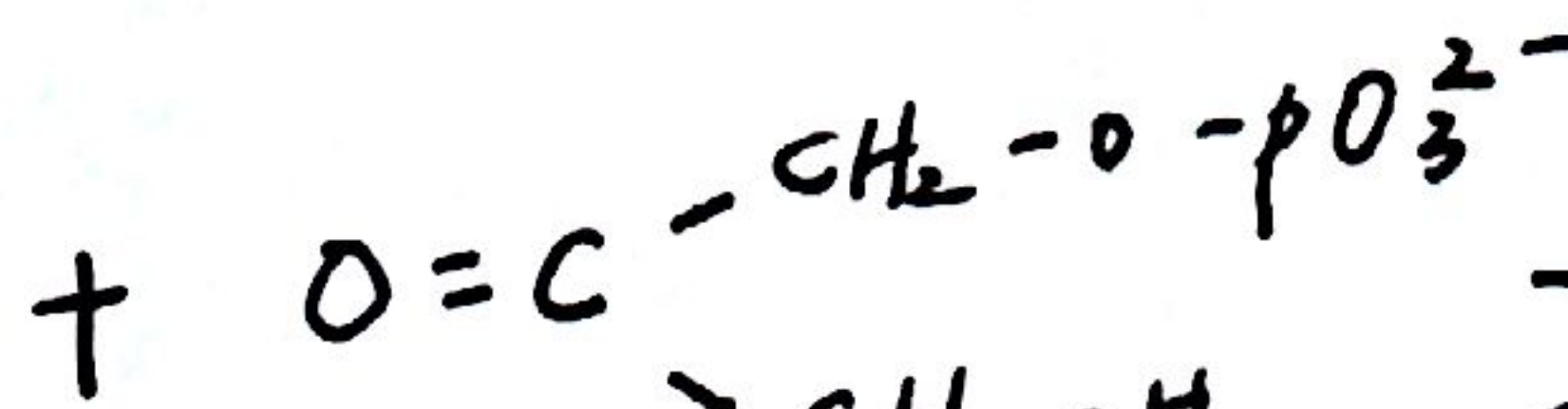
나트륨

3 : 1

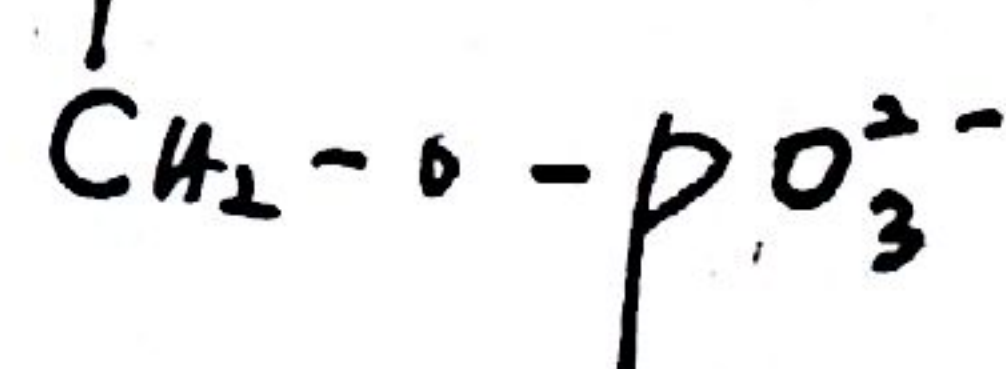
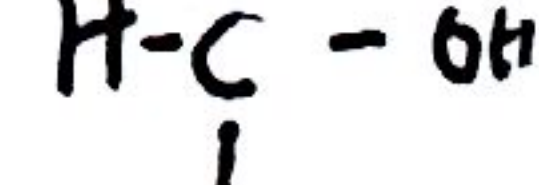
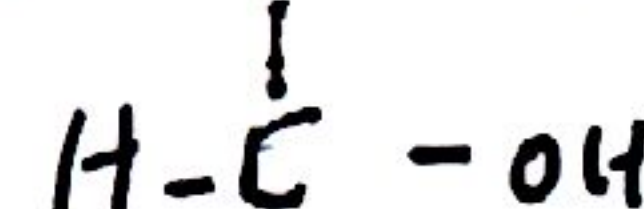
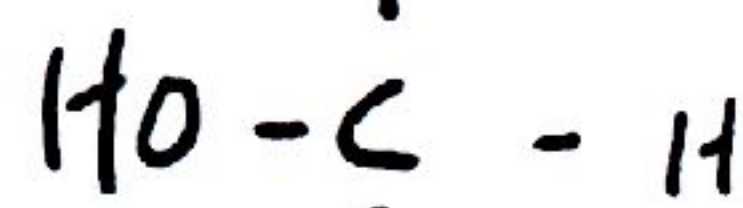
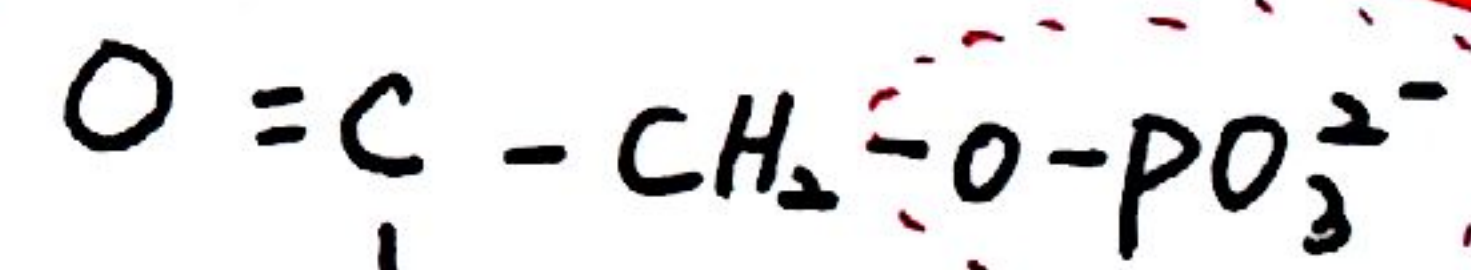
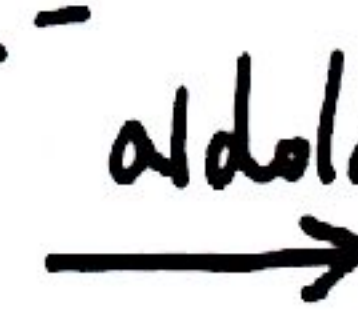
나트륨 질산염



erythrose  
4-phosphate



DHAP

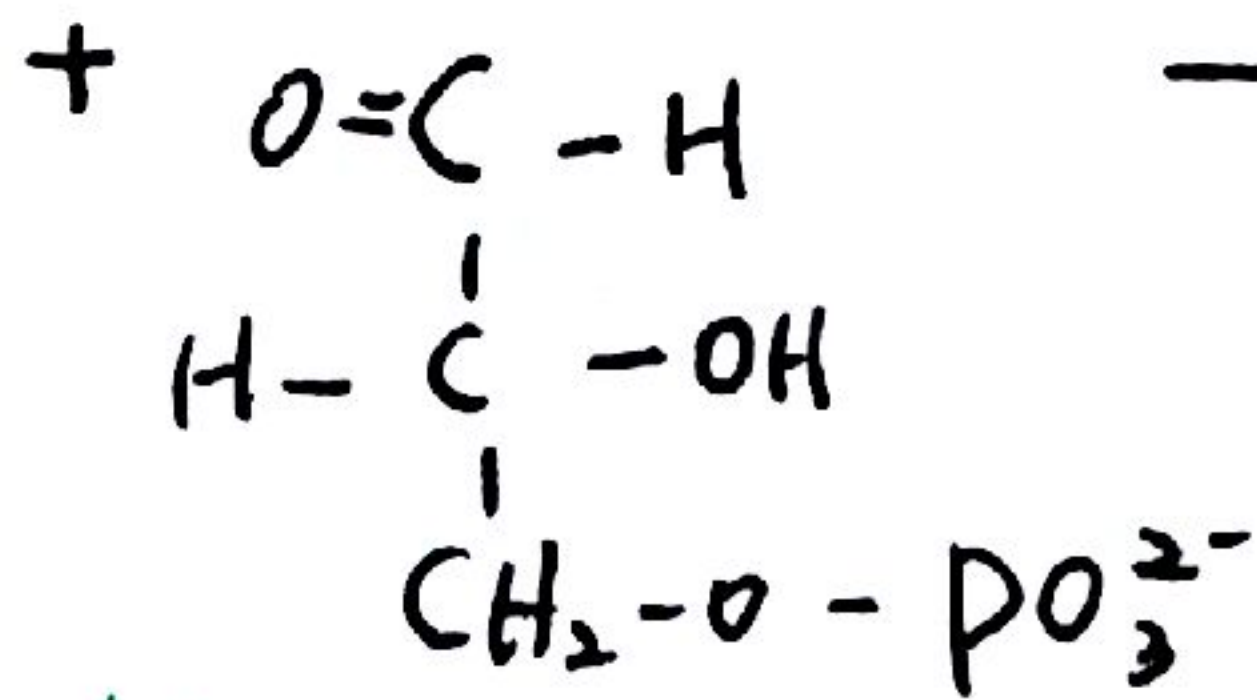
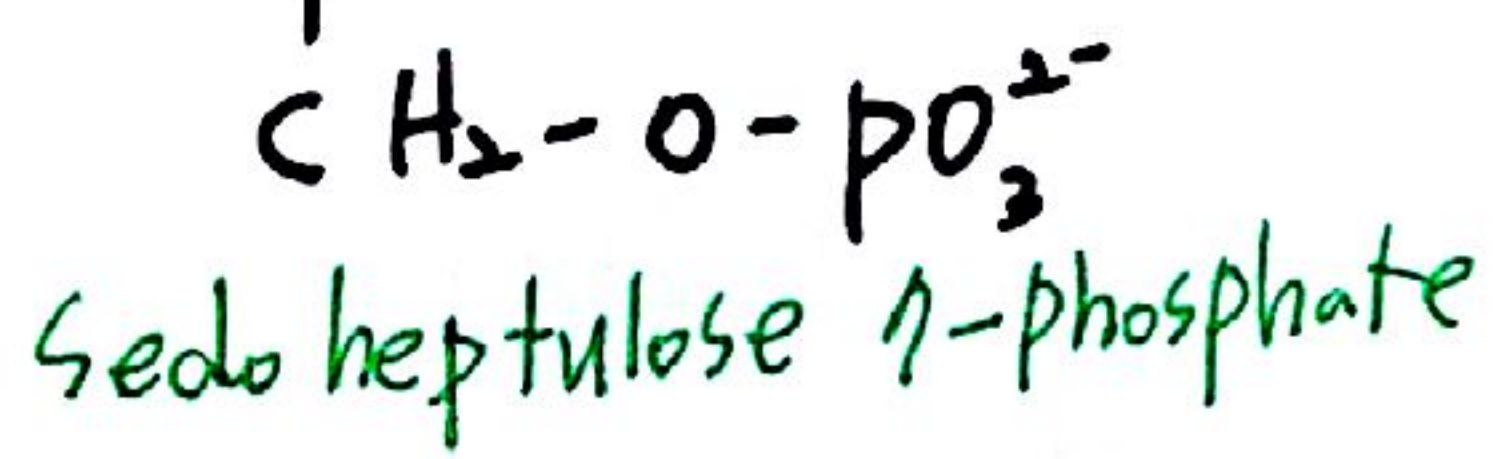
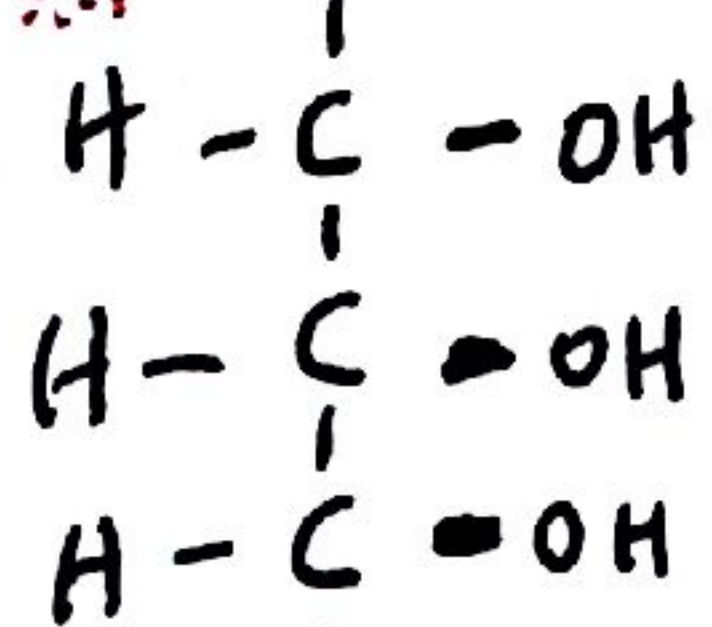
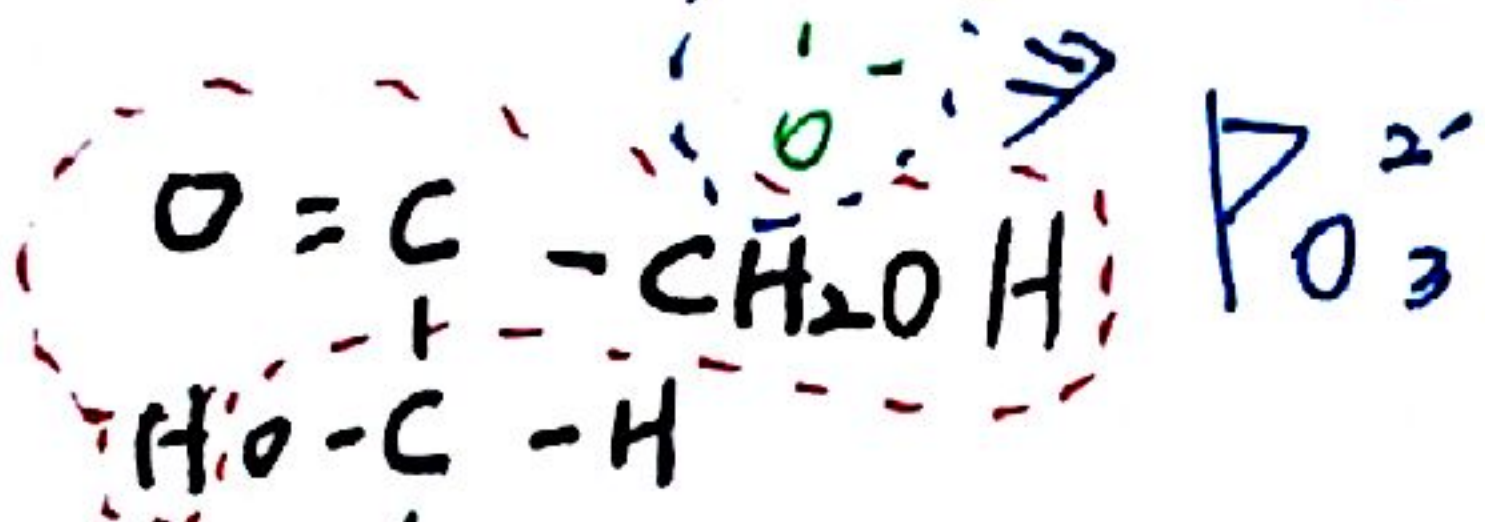
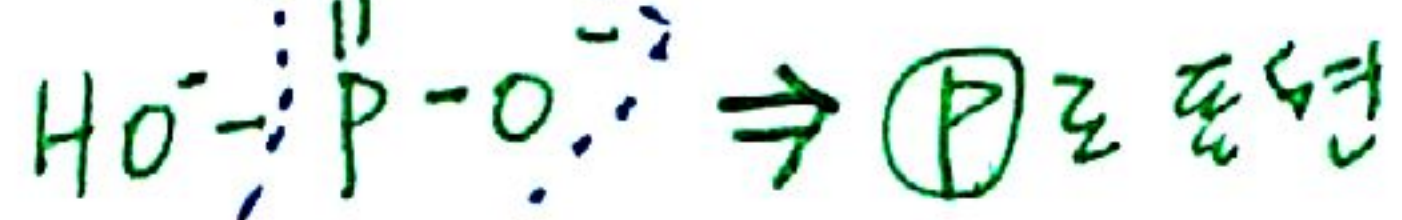


sedoheptulose  
1,7 bisphosphate

중요한 이점

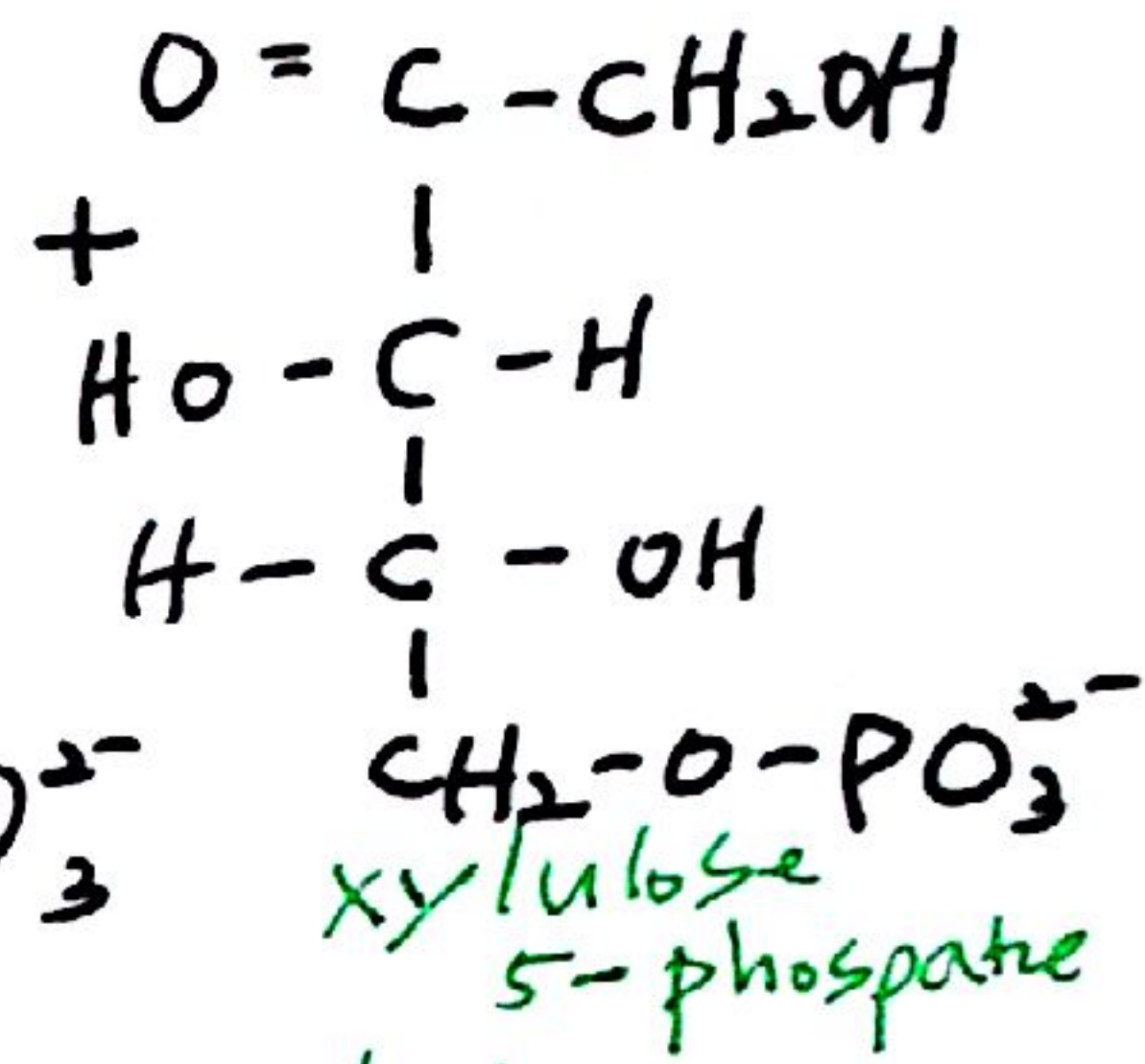
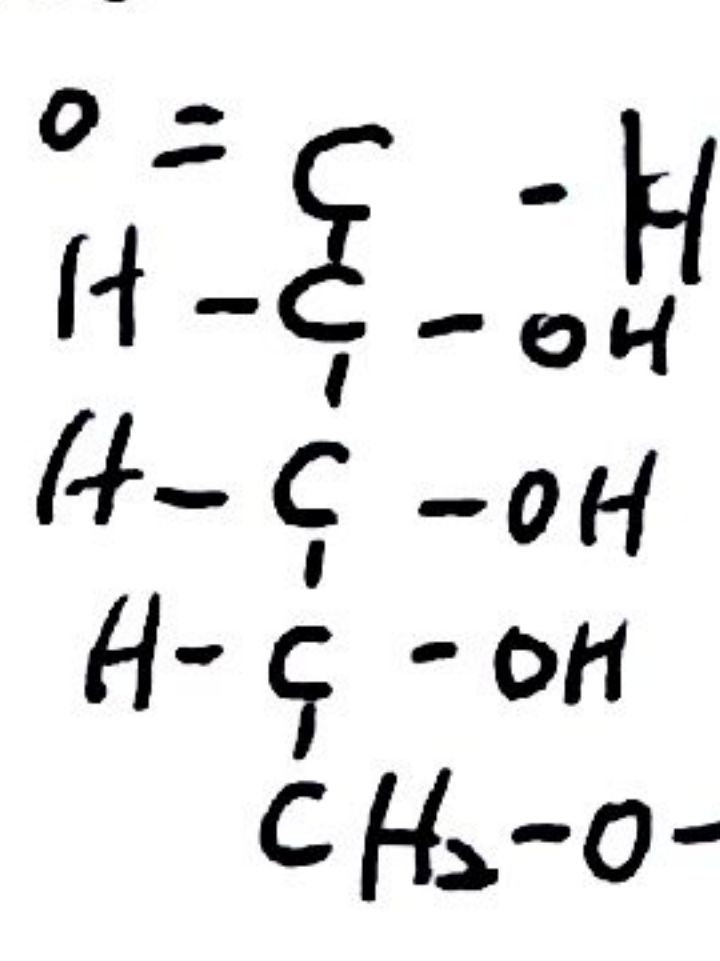
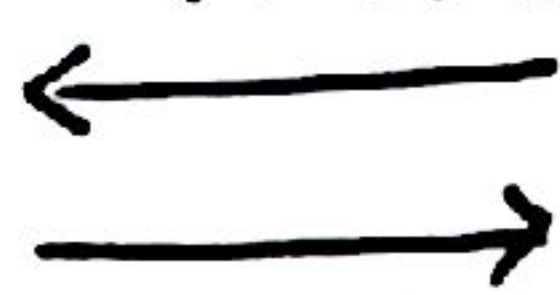
만들 수 있다.



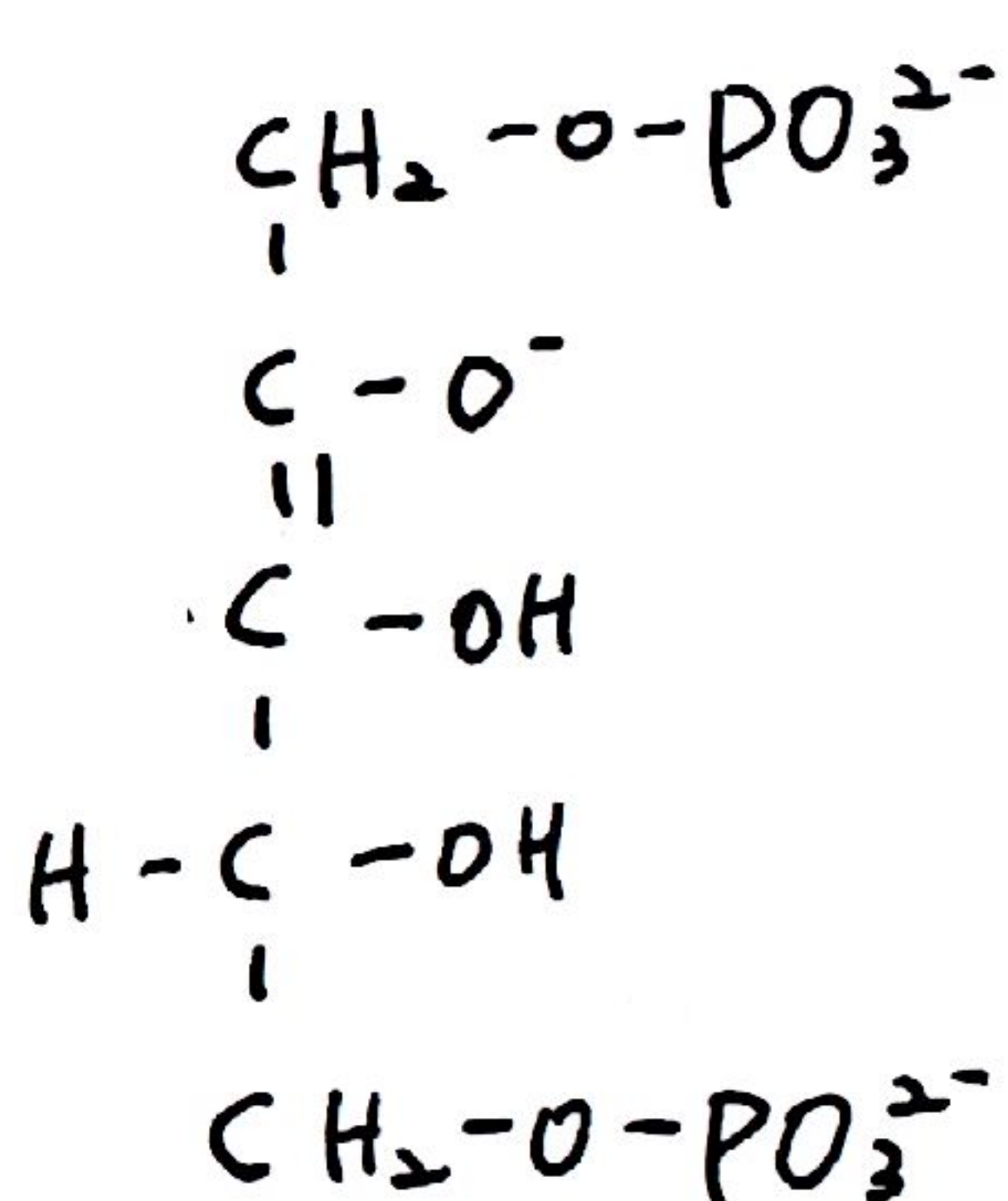
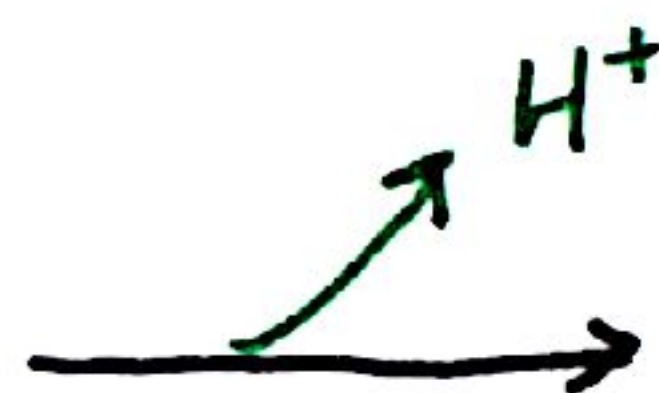
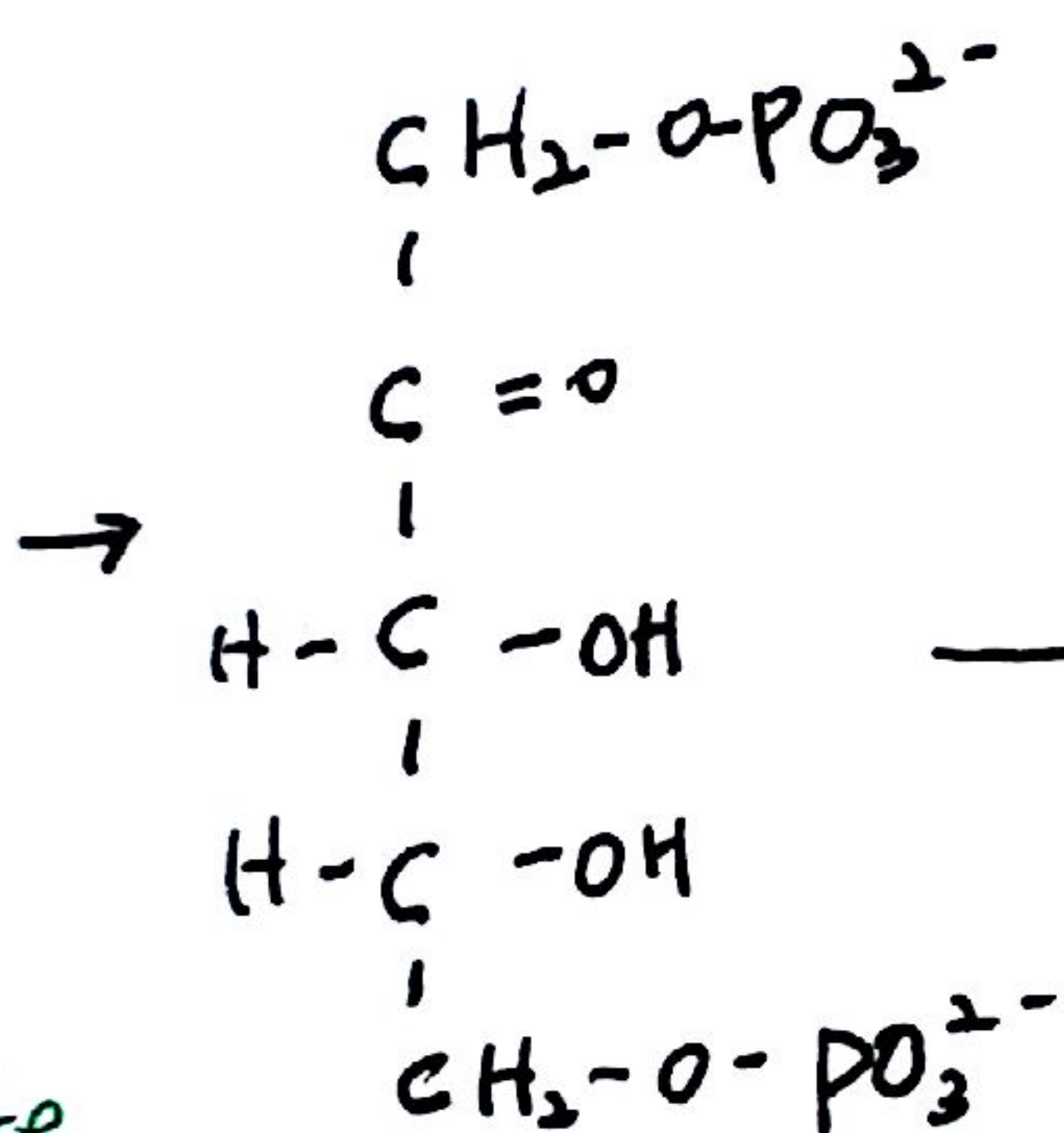
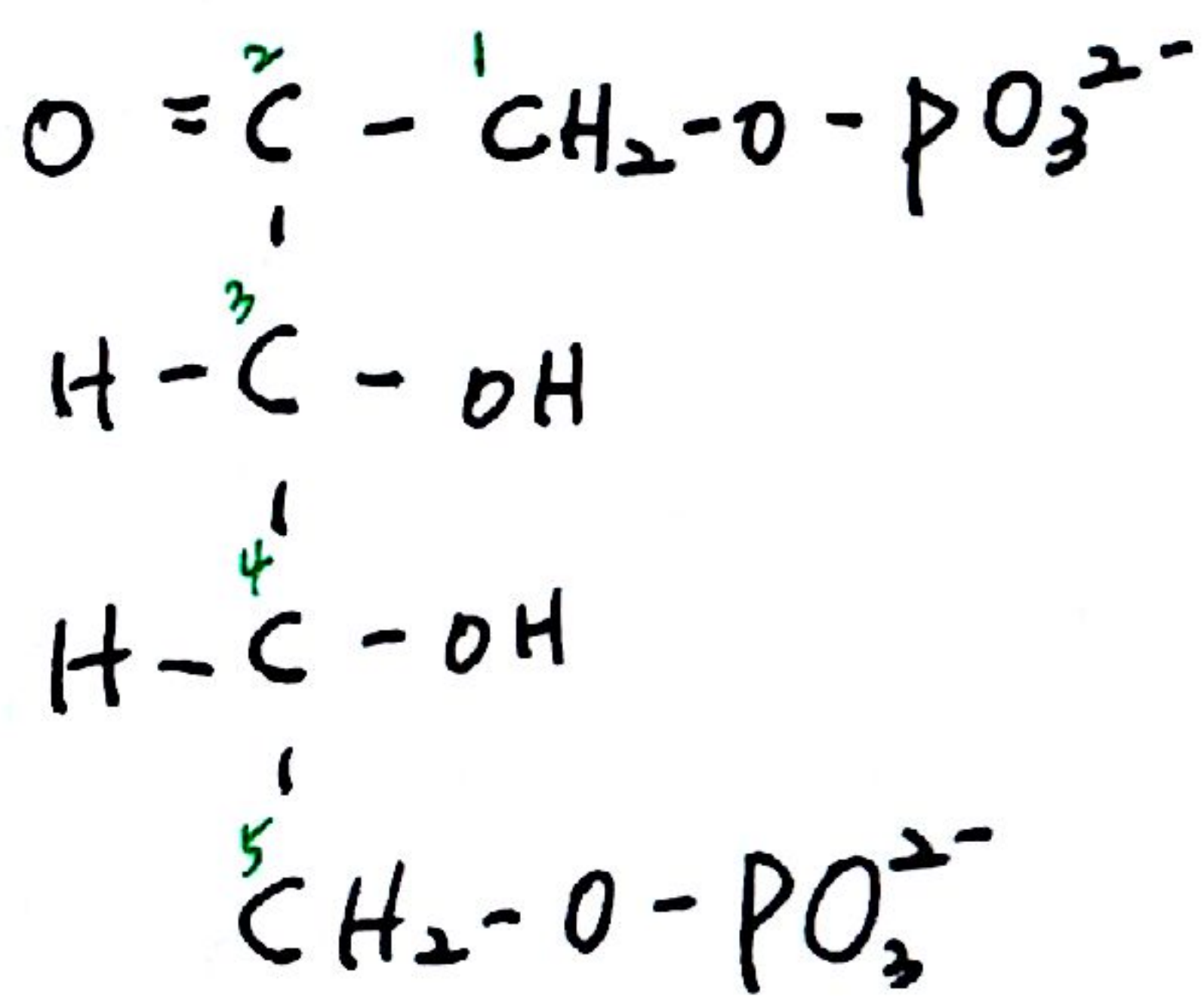
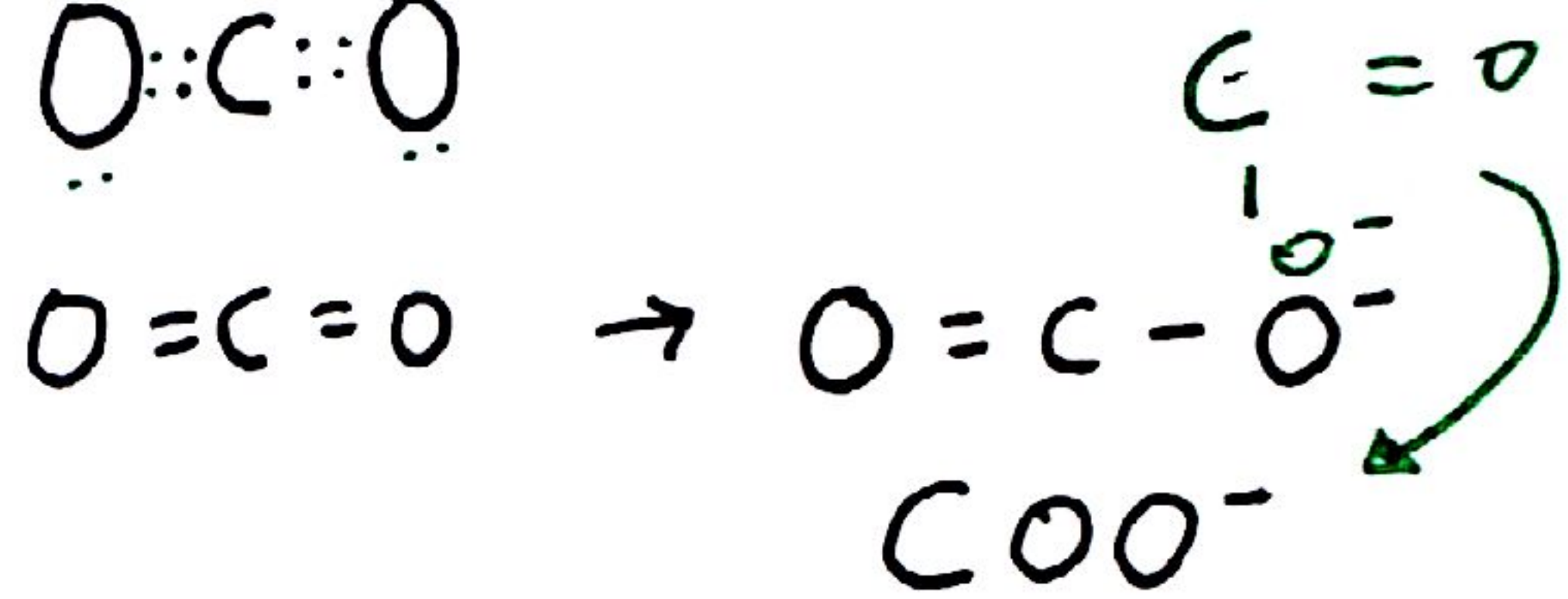
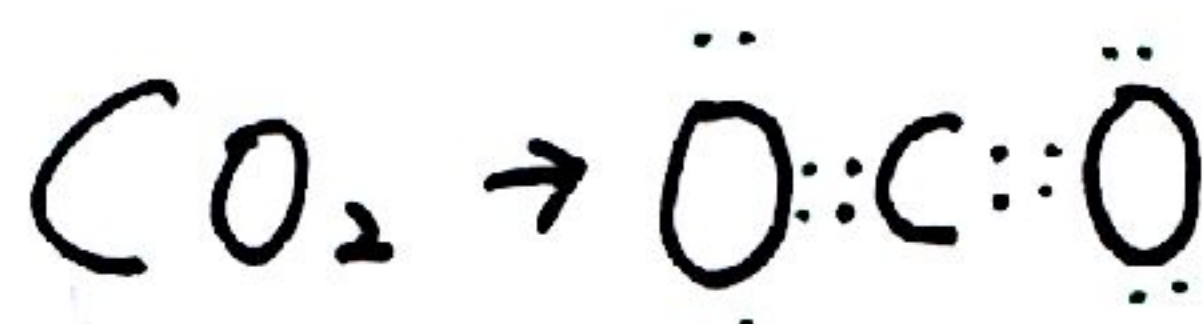


G3P

transketolase

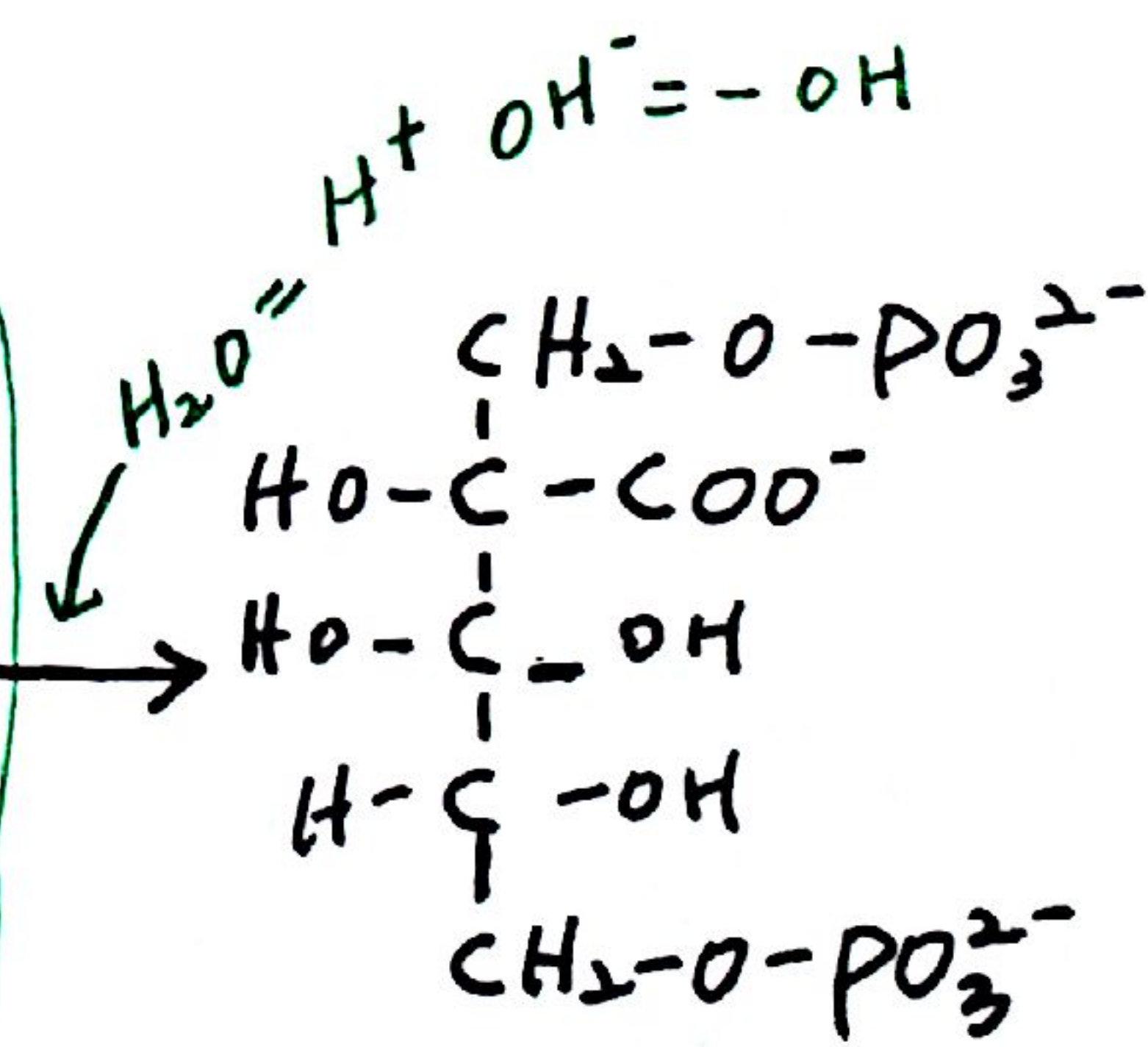
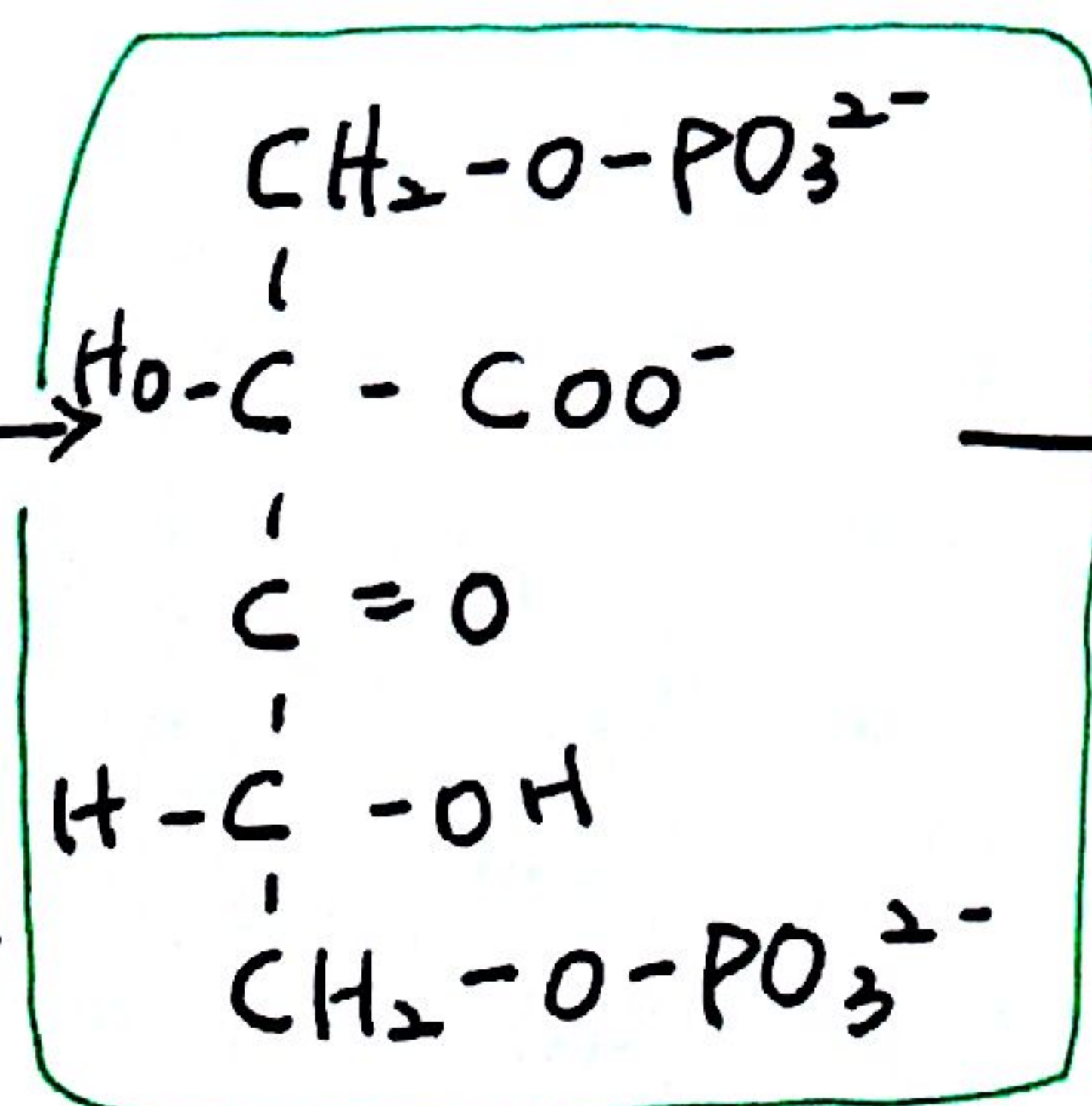
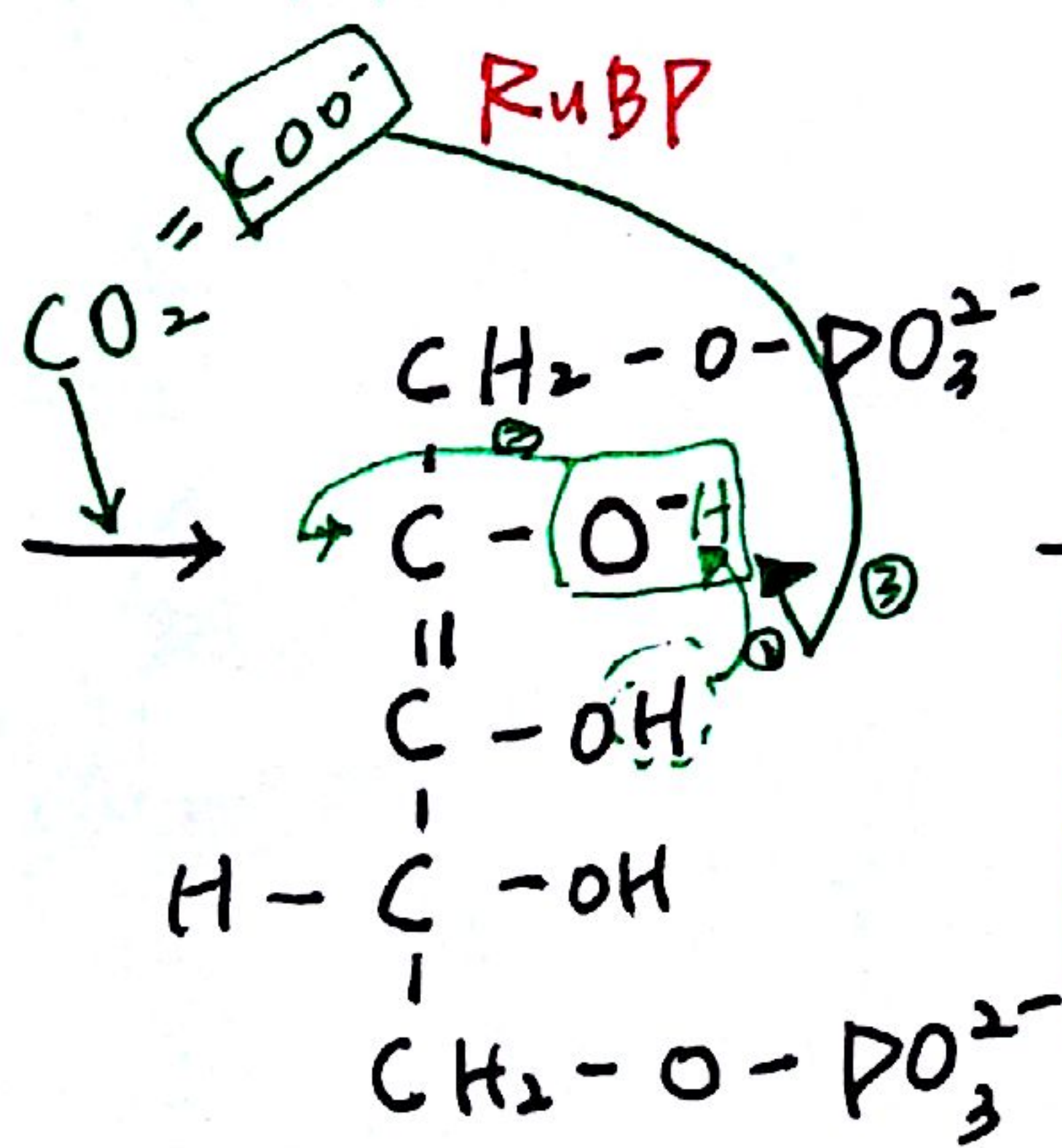


ribose 5-phosphate



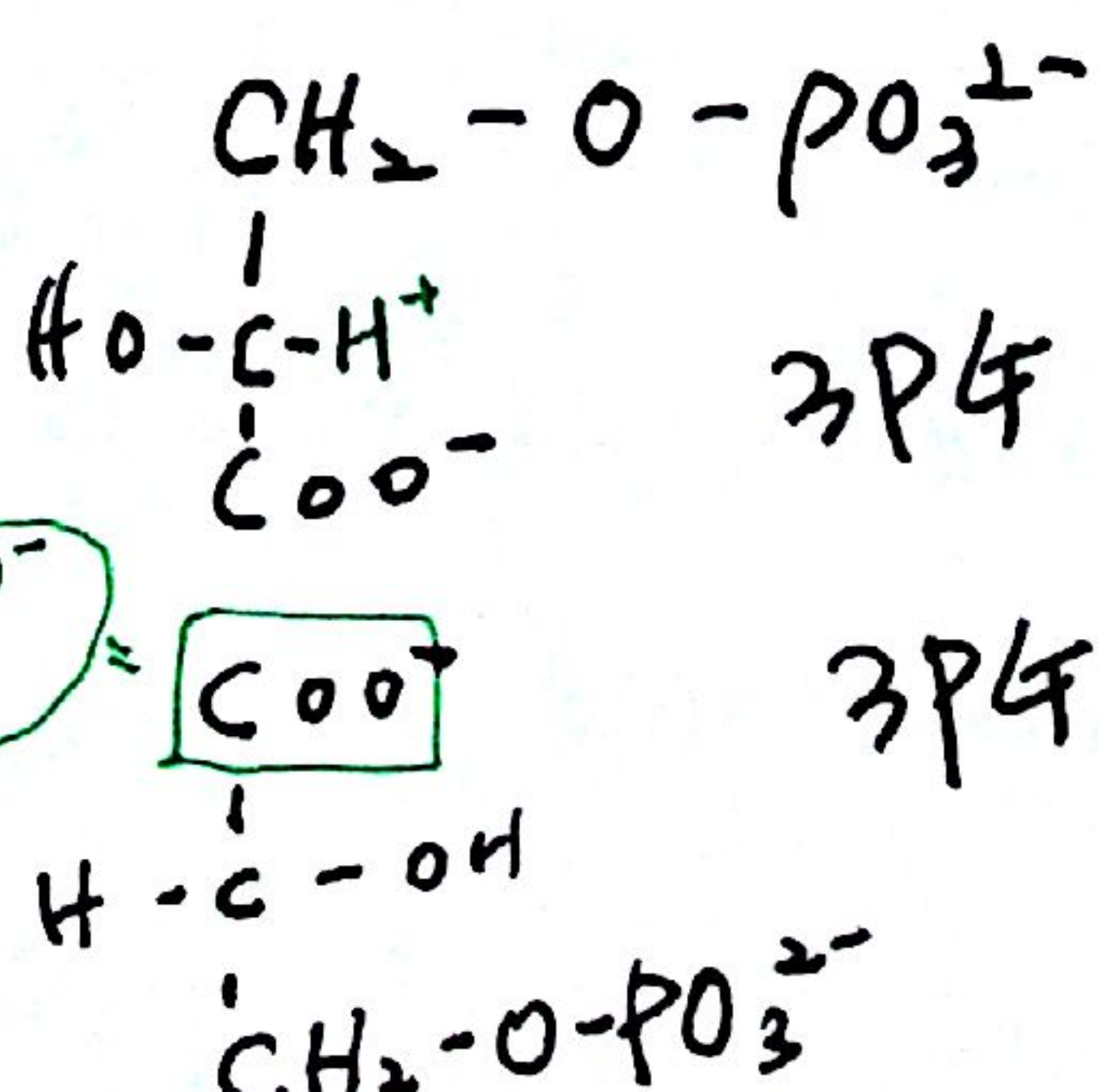
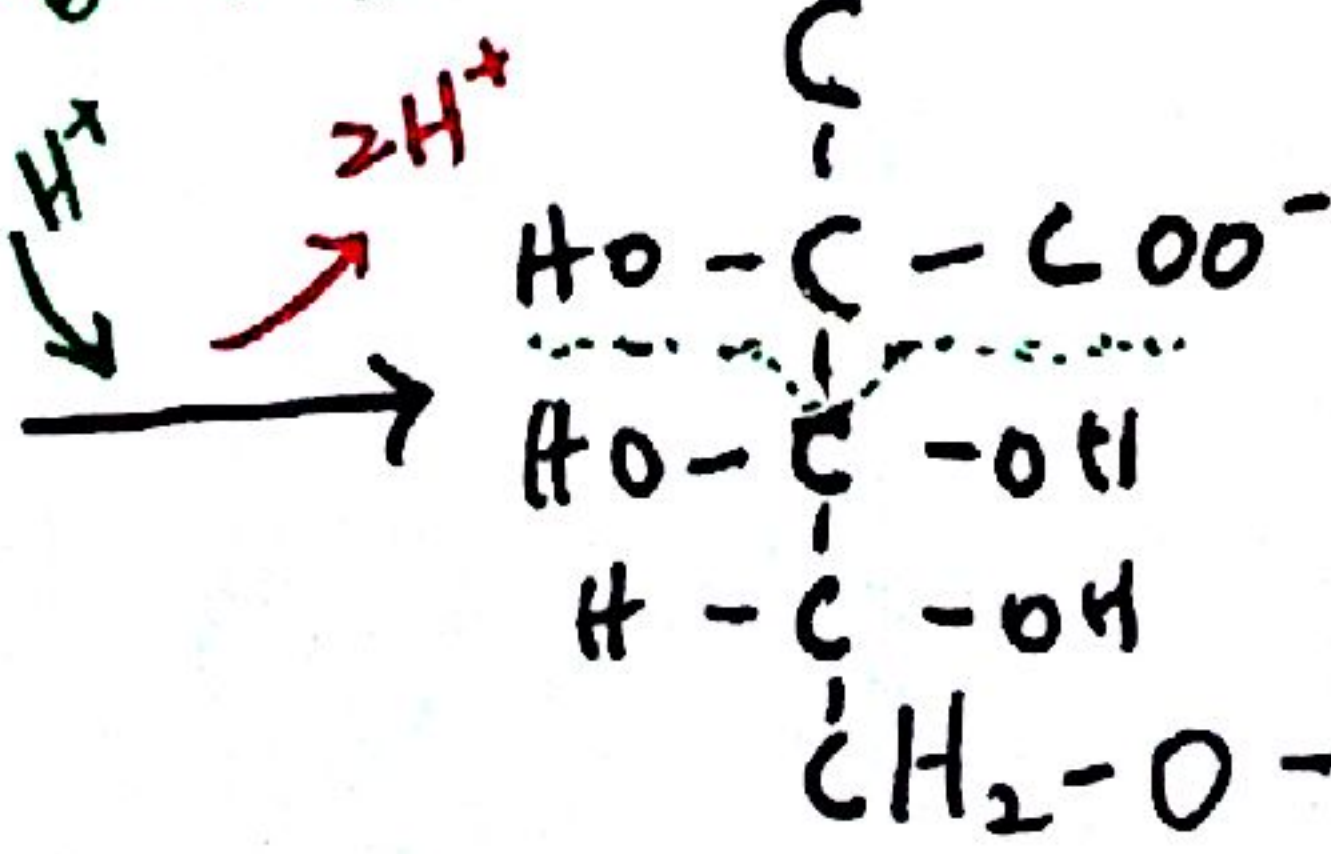
ribulose 1,5 biphosphate

RuBP



RubiCo + CO<sub>2</sub>

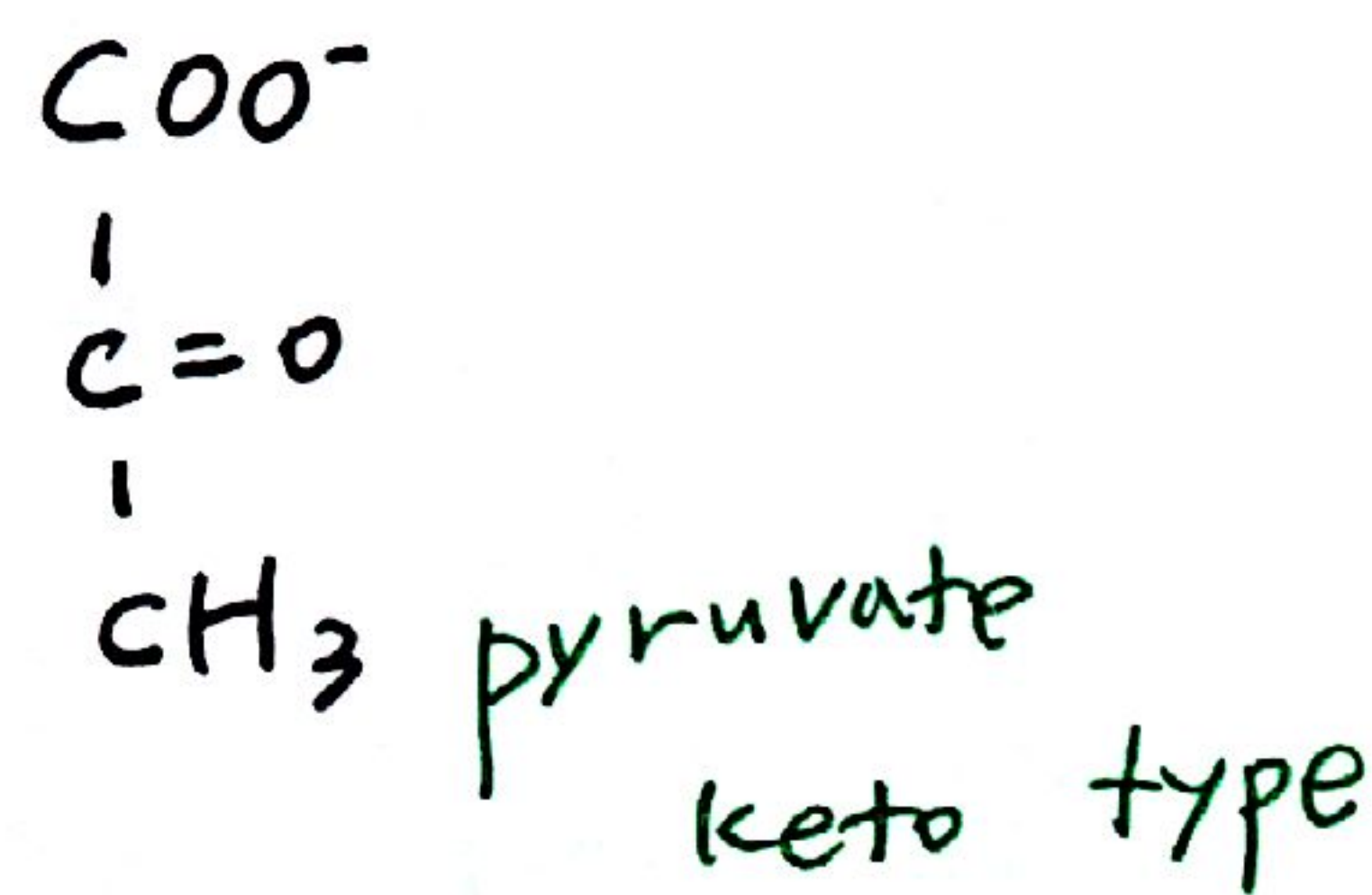
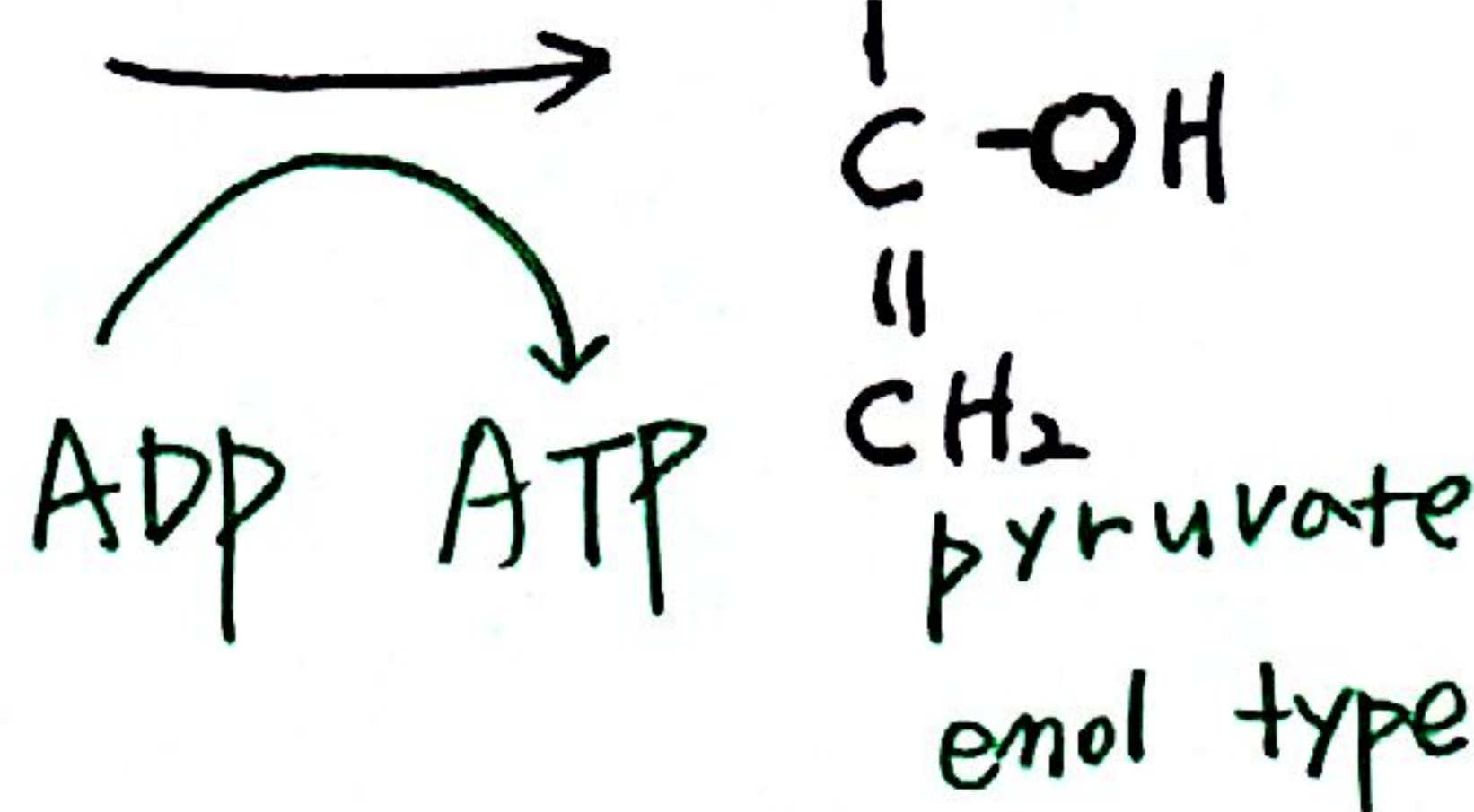
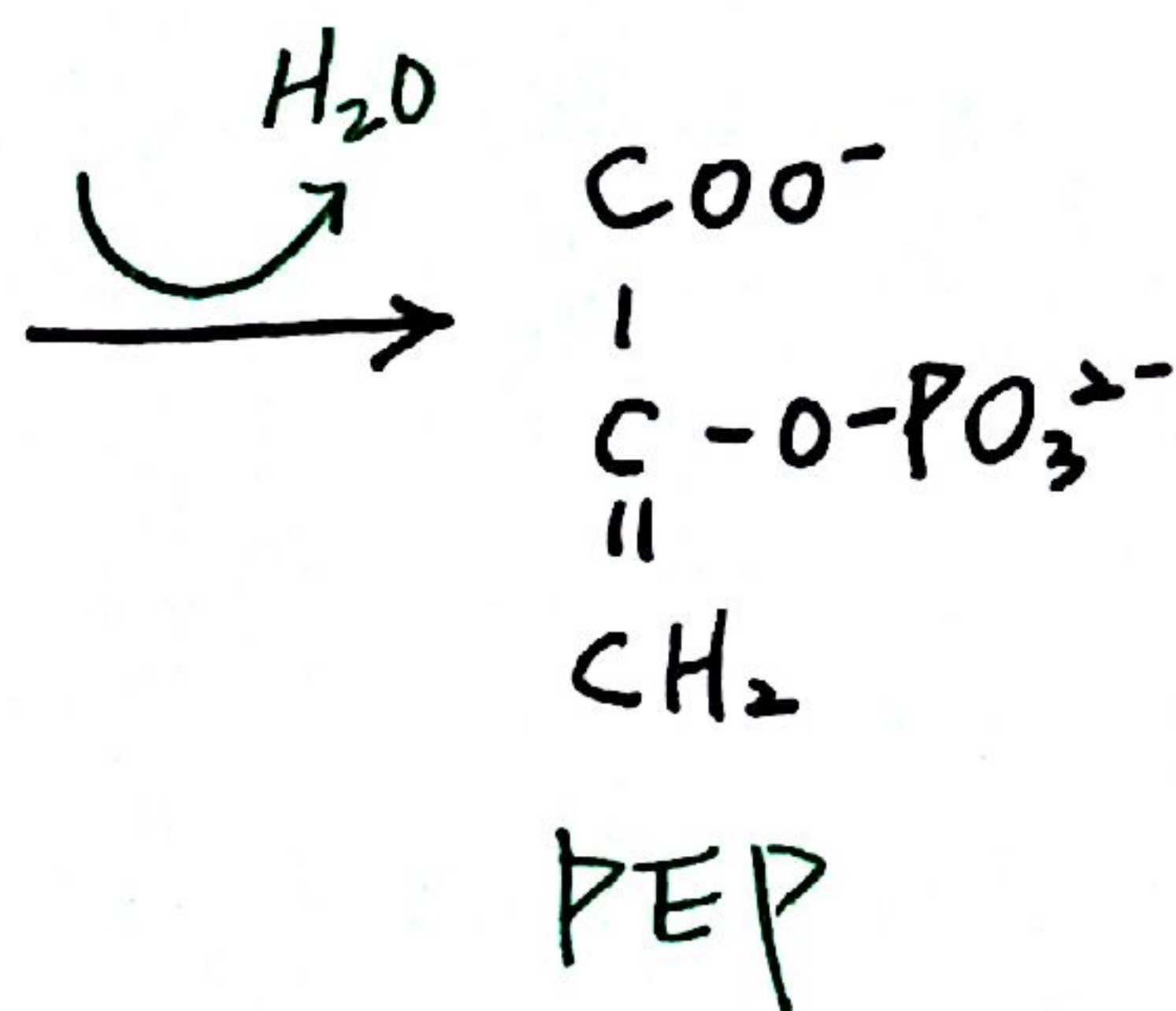
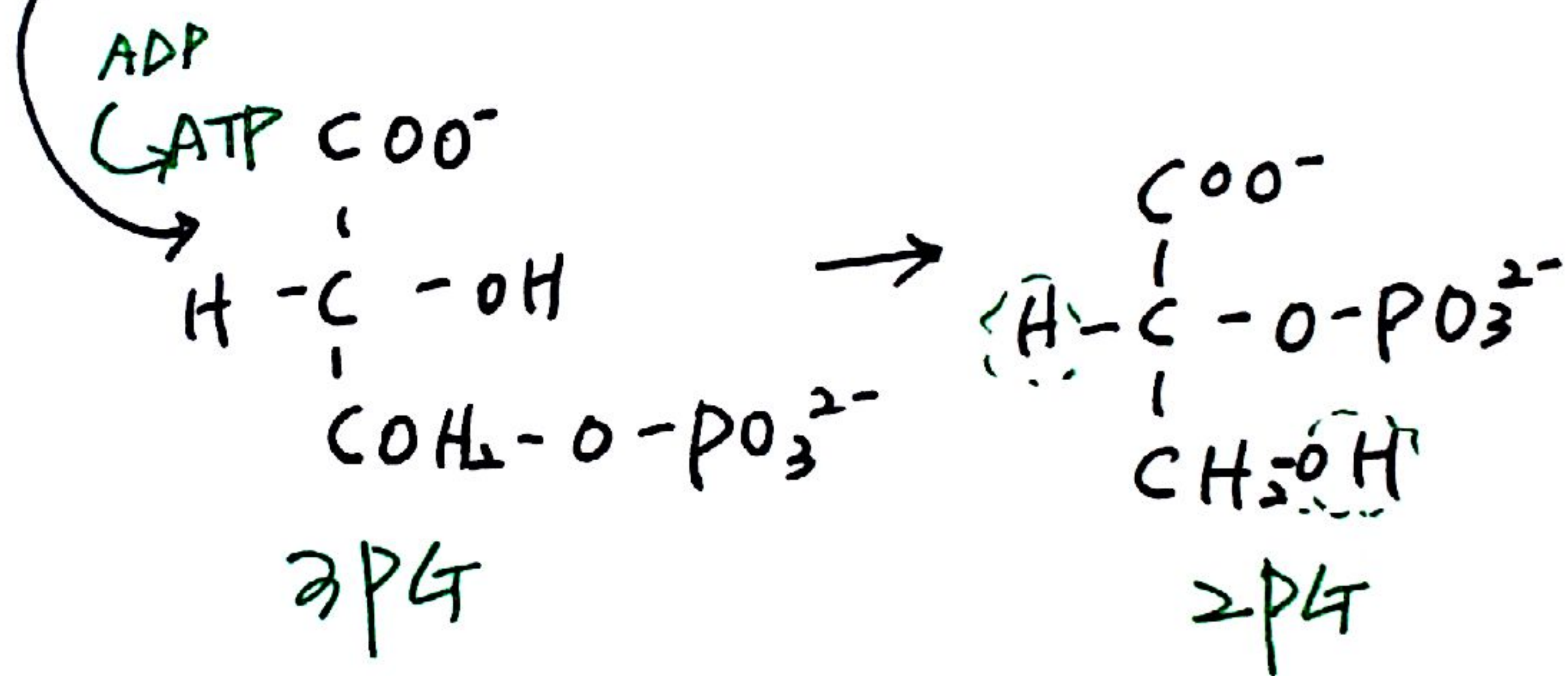
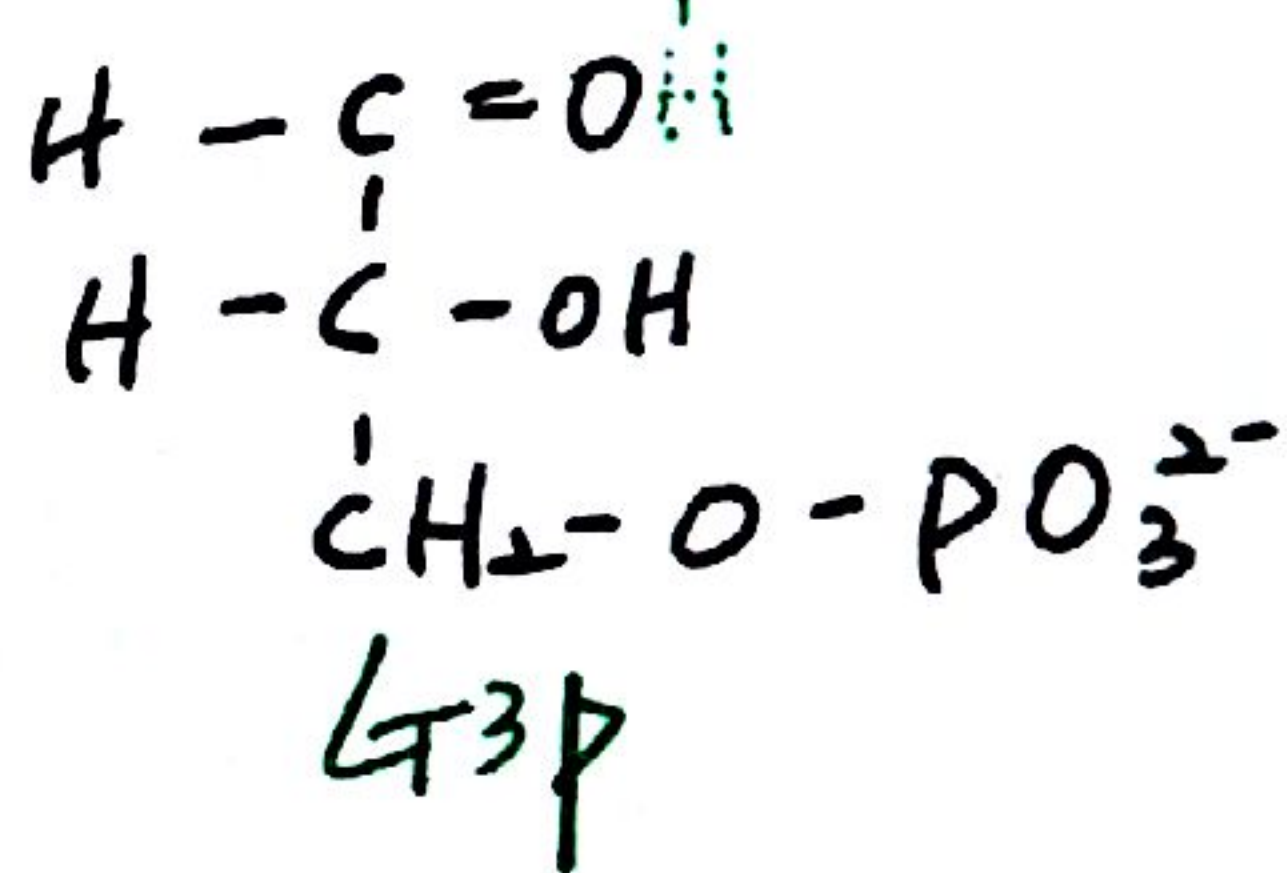
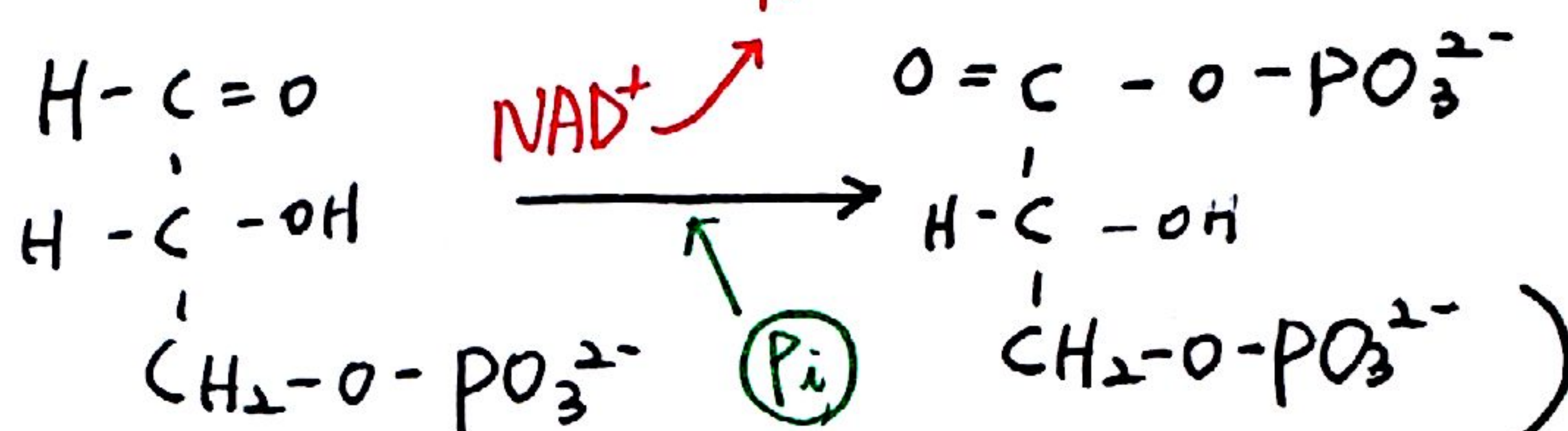
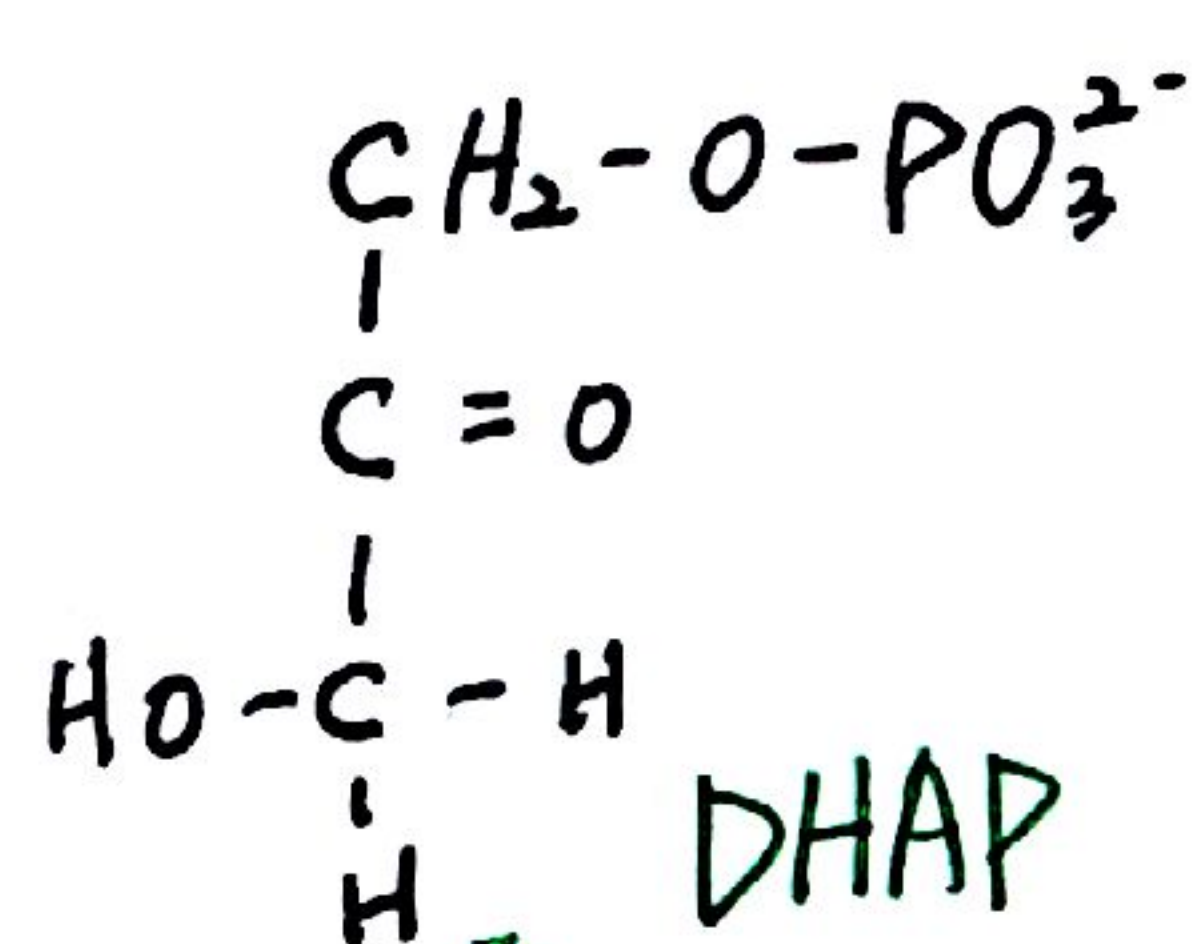
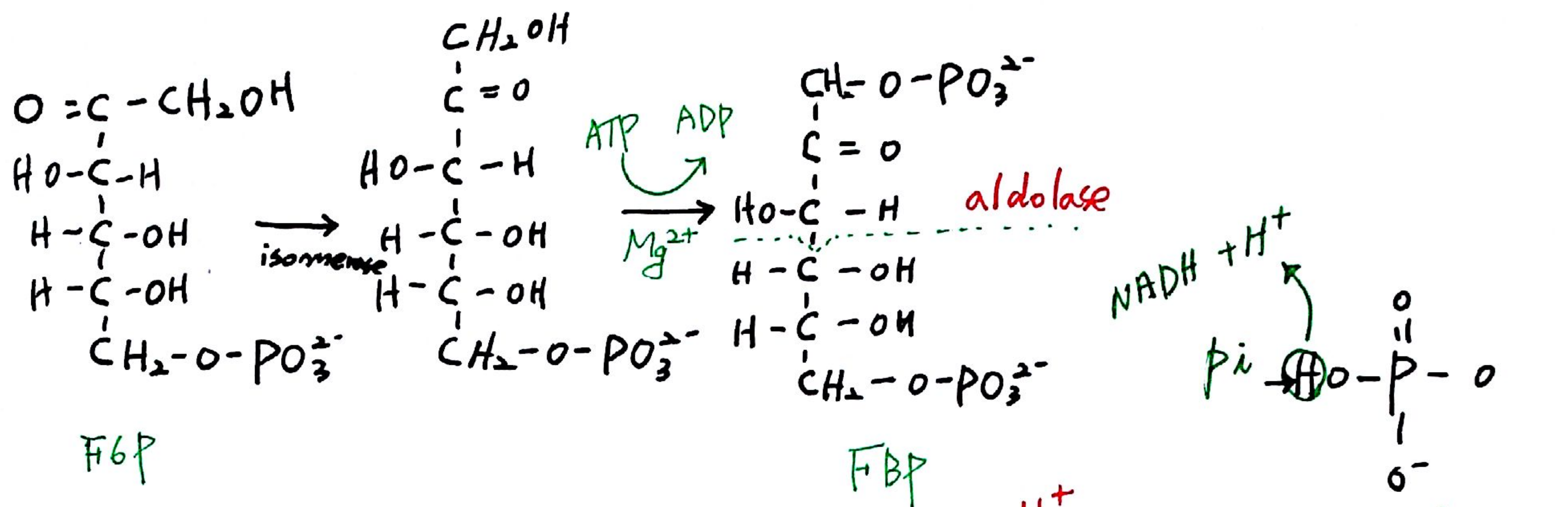
РубисКо + СО<sub>2</sub>



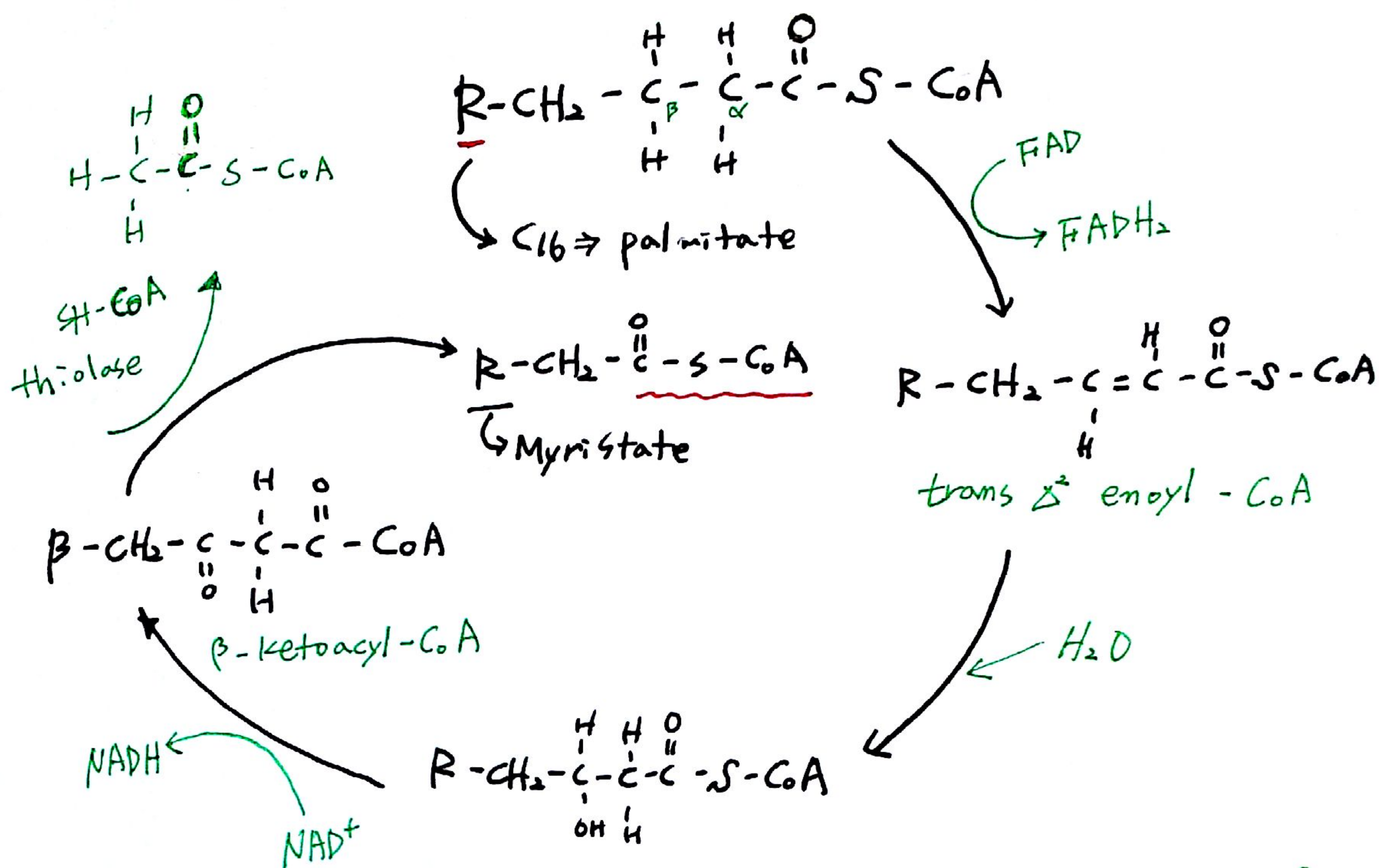
3PG

3PG









glucos - 36 ATP  
fatty - 106 ATP

1 FADH<sub>2</sub> → 1 × 1.5 = 10.5 ATP  
7 NADH → 7 × 2.5 = 17.5 ATP  
8 acetyl-CoA → 8 × 10 = 80 ATP  

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108 ATP  
↳ 106 ATP