

T	W	T	F	S	S	
1	2	3	4	5		A
7	8	9	10	11	12	U
14	15	16	17	18	19	G
21	22	23	24	25	26	18
28	29	30	31			

Week 29  
 Day 199 • 166  
 Date 18 • 07 • 2018  
 July 2018

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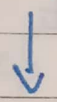
Wednesday

Step 2.

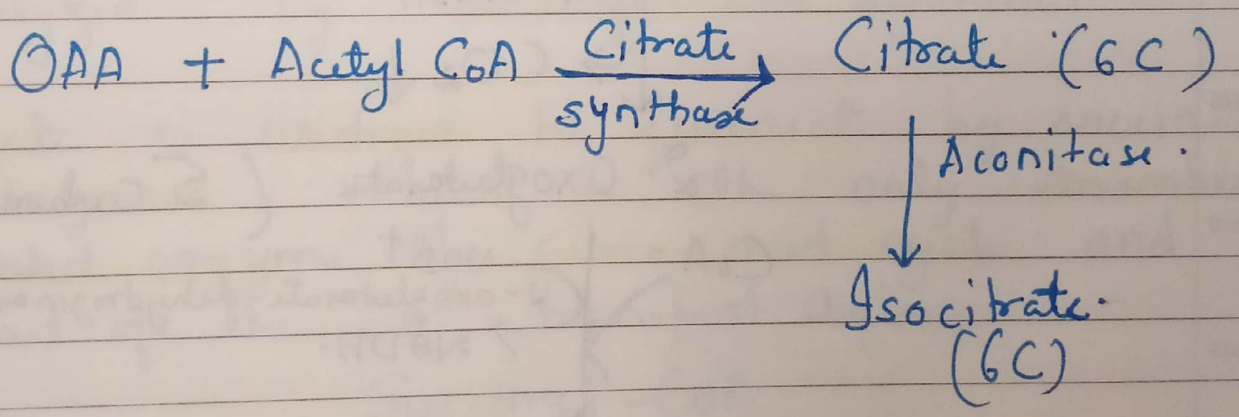
OAA (4C compound) combines with acetyl group of acetyl-CoA to give 6C-citrate in presence of Citrate synthase. (2C)



OAA is a 4C-dicarboxylic acid and Citrate is 6C-tricarboxylic acid).



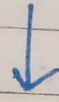
Citrate is then isomerized to isocitrate by the enzyme aconitase.



J	30	31				
U	2	3	4	5	6	7
L	9	10	11	12	13	14
18	16	17	18	19	20	21
	23	24	25	26	27	28

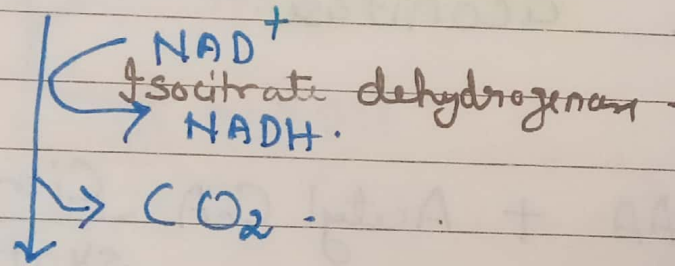
### Step 3 .

Next 2 rxns are successive oxidative decarboxylations, each of which produces one NADH and releases one molecule of  $CO_2$ , yielding a 4 ~~carbon~~ carbon molecule, succinyl CoA.

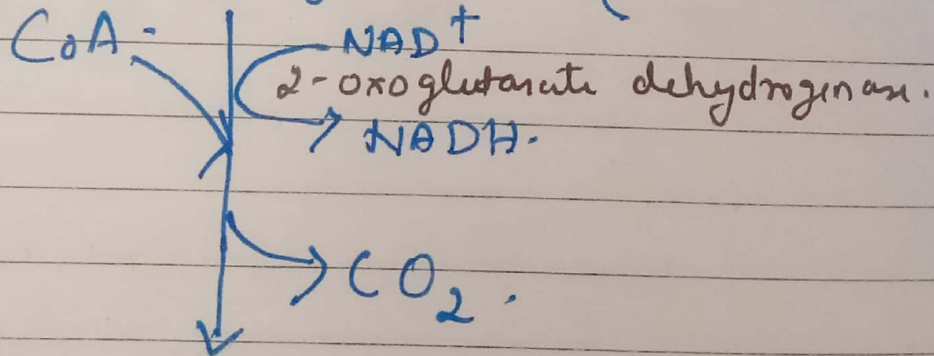


At this point, 3 molecules of  $CO_2$  have been produced for each pyruvate that entered the mitochondrion.

Isocitrate .



2-Oxoglutarate . ( 5 Carbon compound ) .



Succinyl CoA .

( 4-carbon molecule ) .

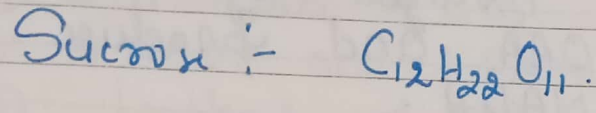
M	T	W	T	F	S	S	A U G 18	
	1	2	3	4	5			
6	7	8	9	10	11	12		
13	14	15	16	17	18	19		
20	21	22	23	24	25	26		
27	28	29	30	31				

Week 29  
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Friday

Step 4.

Q) How many molecules of CO<sub>2</sub> are produced by this step for each molecule of sucrose oxidized?



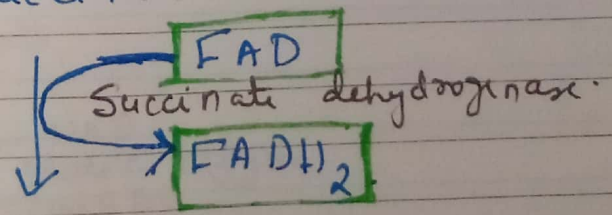
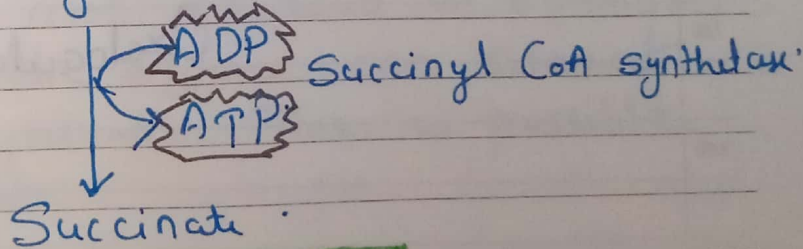
12 CO<sub>2</sub> produced.

Step 4

Succinyl-CoA is converted to succinate. The synthesis of ATP via phosphorylation rxn is catalyzed by succinyl-CoA synthetase.

Succinate is oxidized to fumarate by succinate dehydrogenase, which is the only membrane associated enzyme of citric acid cycle and also part of the e<sup>-</sup> transport chain.

Succinyl-CoA.



Words and Time are common - once spent, they are gone forever.

	M	T	W	T	F	S
J	30	31				
U	2	3	4	5	6	7
L	9	10	11	12	13	14
18	16	17	18	19	20	21
	23	24	25	26	27	28

### Step 5.

Fumarate is hydrated to produce malate.

↓  
Malate is then oxidized by malate dehydrogenase to regenerate OAA and produce another molecule of NADH.

↓  
The OAA produced is now able to react with another acetyl CoA and continue the cycle.

