Prediction of RNA secondary structure

Illustration of the Nussinov Algorithm

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	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0						
C_2	0	0						
G_3		0	0					
G_4			0	0				
C_5				0	0			
A_6					0	0		
U_7						0	0	
G_8							0	0

$$\gamma(i,j) = \text{Max} \{ \quad \gamma(i+1,j)$$
$$\gamma(i,j-1),$$
$$\gamma(i+1,j-1)+\delta(i,j)$$
$$\text{Max}_{i<k<j} \{ \gamma(i,k) + \gamma(k+1,j) \} \}$$

	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0						
C_2	0	0	1					
G_3		0	0					
G_4			0	0				
C_5				0	0			
A_6					0	0		
U_7						0	0	
G_8							0	0

$$\gamma(i,j) = \text{Max} \{ \quad \gamma(i+1,j)$$
$$\gamma(i,j-1),$$
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	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0						
C_2	0	0	1					
G_3		0	0	0				
G_4			0	0	1			
C_5				0	0	0		
A_6					0	0	1	
U_7						0	0	0
G_8							0	0

$$\gamma(i,j) = \text{Max} \{ \quad \gamma(i+1,j)$$
$$\gamma(i,j-1),$$
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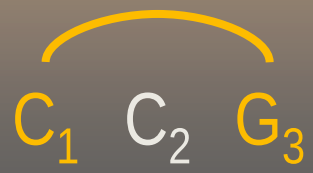
$$\text{Max}_{i<k<j} \{ \gamma(i,k) + \gamma(k+1,j) \} \}$$

	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1					
C_2	0	0	1					
G_3		0	0	0				
G_4			0	0	1			
C_5				0	0	0		
A_6					0	0	1	
U_7						0	0	0
G_8							0	0



$$\gamma(i,j) = \text{Max} \{ \quad \gamma(i+1,j)$$
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$$\text{Max}_{i<k<j} \{ \gamma(i,k) + \gamma(k+1,j) \} \}$$

	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1					
C_2	0	0	1					
G_3		0	0	0				
G_4			0	0	1			
C_5				0	0	0		
A_6					0	0	1	
U_7						0	0	0
G_8							0	0

$$\gamma(i,j) = \text{Max} \{ \quad \gamma(i+1,j)$$
$$\gamma(i,j-1),$$
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$$\text{Max}_{i<k<j} \{ \gamma(i,k) + \gamma(k+1,j) \} \}$$

	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1					
C_2	0	0	1	1				
G_3		0	0	0	1			
G_4			0	0	1	1		
C_5				0	0	0	1	
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0

$$\gamma(i,j) = \text{Max} \{ \quad \gamma(i+1,j)$$
$$\gamma(i,j-1),$$
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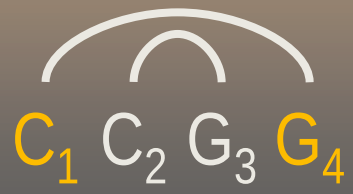
$$\text{Max}_{i<k<j} \{ \gamma(i,k) + \gamma(k+1,j) \} \}$$

	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2				
C_2	0	0	1	1				
G_3		0	0	0	1			
G_4			0	0	1	1		
C_5				0	0	0	1	
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0



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	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2				
C_2	0	0	1	1	2			
G_3		0	0	0	1			
G_4			0	0	1	1		
C_5				0	0	0	1	
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0

$$\gamma(i,j) = \text{Max} \{ \quad \gamma(i+1,j)$$
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$$\text{Max}_{i<k<j} \{ \gamma(i,k) + \gamma(k+1,j) \} \}$$

	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2	2	2		
C_2	0	0	1	1	2	2		
G_3		0	0	0	1	1	2	
G_4			0	0	1	1	2	2
C_5				0	0	0	1	2
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0

$$\gamma(i,j) = \text{Max} \{ \quad \gamma(i+1,j)$$
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$$\text{Max}_{i<k<j} \{ \gamma(i,k) + \gamma(k+1,j) \} \}$$

	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2	2	2		
C_2	0	0	1	1	2	2	3	
G_3		0	0	0	1	1	2	
G_4			0	0	1	1	2	2
C_5				0	0	0	1	2
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0

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	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2	2	2		
C_2	0	0	1	1	2	2	3	
G_3		0	0	0	1	1	2	
G_4			0	0	1	1	2	2
C_5				0	0	0	1	2
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0

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	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2	2	2	3	
C_2	0	0	1	1	2	2	3	3
G_3		0	0	0	1	1	2	2
G_4			0	0	1	1	2	2
C_5				0	0	0	1	2
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0

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	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2	2	2	3	4
C_2	0	0	1	1	2	2	3	3
G_3		0	0	0	1	1	2	2
G_4			0	0	1	1	2	2
C_5				0	0	0	1	2
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0

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	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2	2	2	3	4
C_2	0	0	1	1	2	2	3	3
G_3		0	0	0	1	1	2	2
G_4			0	0	1	1	2	2
C_5				0	0	0	1	2
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0

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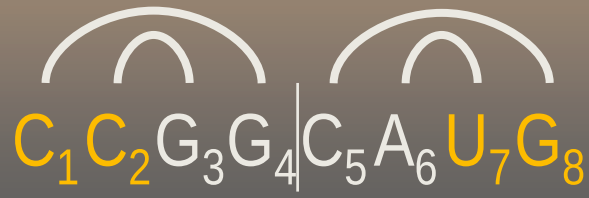
	C_1	C_2	G_3	G_4	C_5	A_6	U_7	G_8
C_1	0	0	1	2	2	2	3	4
C_2	0	0	1	1	2	2	3	3
G_3		0	0	0	1	1	2	2
G_4			0	0	1	1	2	2
C_5				0	0	0	1	2
A_6					0	0	1	1
U_7						0	0	0
G_8							0	0



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