BIOINFORMATICS

How do we compare biological sequences?

Marco Beccuti

Università degli Studi di Torino Dipartimento di Informatica



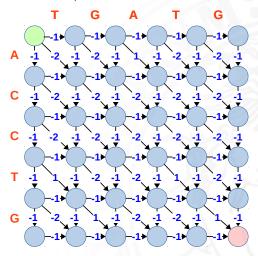
Try to align globally/locally the following sequences:

- ACCTG and TGATG;
- ACTCA and CACTC.

$$score\ matrix = \begin{bmatrix} 1 & -2 & -2 & -2 & -1 \\ -2 & 1 & -2 & -2 & -1 \\ -2 & -2 & 1 & -2 & -1 \\ -2 & -2 & -2 & 1 & -1 \\ -1 & -1 & -1 & -1 & - \end{bmatrix}$$

Try to align globally the following sequences:

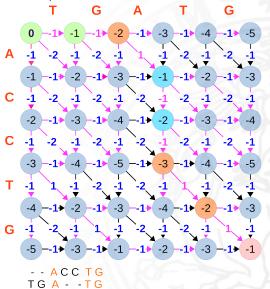
Try to align globally the following sequences:



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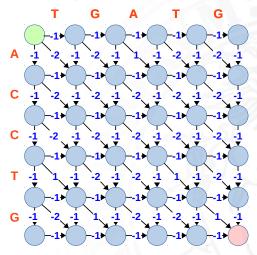
	T	G	A	Т	G
	01	-1)1	-2)1>(-3)1-(-	4)1-(-5)
A	-1 -2	-1 -2	-1 1	-1 -2 -	1 -2 -1
	(-1)1	(-2)1	-3)1>(-1)1-(-	2)1-(-3)
С	-1 -2	-1 -2	-1 -2	-1 -2 -	1 -2 -1
	(-2) 1	(-3)1	-4) 1	-2)1-(-	3 -1 (-4)
С	-1 -2	-1 -2	-1 -2	-1 -2 -	1 -2 -1
	-3)1	(-4)1	-5)- -1	-3)1>(-	4)1-(-5)
Т	-1 1	-1 -2	-1 -2	-1 1	1 -2 -1
	(-4) 1	(-2)- -1	-3)1	-4)1>(-	21 (-3)
G	-1 -2	-1 1	-1 -2	-1 -2 -	1 1 -1
	-5-1	-3-1	-1)1	-2 -1	31> -1

Try to align globally the following sequences:

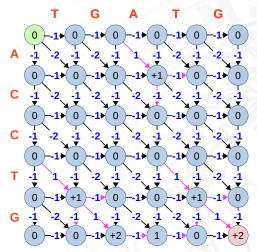


Try to align locally the following sequences:

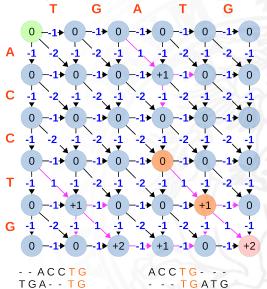
Try to align locally the following sequences:



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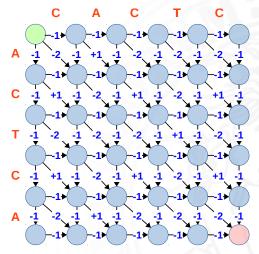


Try to align locally the following sequences:



Try to align globally the following sequences:

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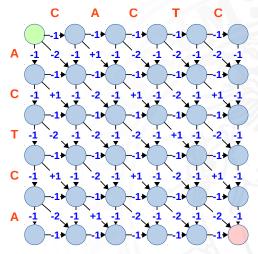
Try to align globally the following sequences:

	С	Α	C	T	С
	0-1-	-1)1•(-	-2)1-(-	3)1-	4)1-(-5)
A	-1 -2	-1 +1	1 -2 -	1 -2 -	1 -2 -1
	-1-1	-2) 1	0 -1 (-	1)1	2 -1 -3
С	-1 +1	-1 -2	1 +1 -	1 -2 -	1 +1 -1
	-21>	0 -1 (-	-1)1+(+	1)-1	-1-(-1)
Т	-1 -2	-1 -2	1 -2 -	1 +1 -	1 -2 -1
	-31+	-1)1	-2)1	0 }1▶(+	2 -1 +1
С	-1 +1	-1 -2	1 +1 -	1 -2 -	1 +1 -1
	-4)1>	-2)1	-3)1 •(-	1)1>(+	1)1+(+3)
A	-1 -2	-1 +1	<u> </u>	1 -2 -	1 -2 -1
	<u>-5</u>)−- 1 ►(-3) 1 ▶(-	-1)1-(-	2)1>(1→1 +2

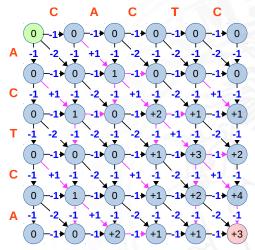
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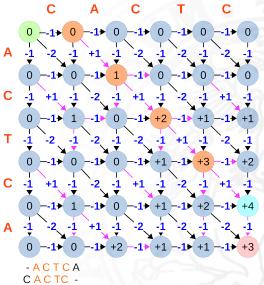


Try to align locally the following sequences:



Try to align locally the following sequences:

ACTCA and CACTC.



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Try to align globally the following sequences using the Divide and Conquer approach:

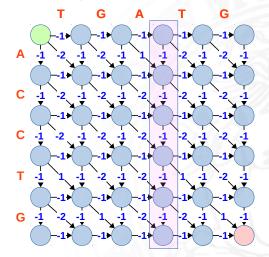
- ACCTG and TGATG;
- ACTCA and CACTC.

$$score\ matrix = \begin{bmatrix} 1 & -2 & -2 & -2 & -1 \\ -2 & 1 & -2 & -2 & -1 \\ -2 & -2 & 1 & -2 & -1 \\ -2 & -2 & -2 & 1 & -1 \\ -1 & -1 & -1 & -1 & - \end{bmatrix}$$

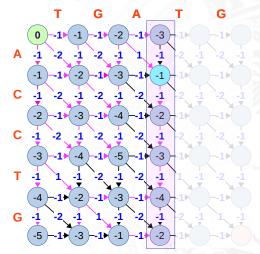
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Try to align globally the following sequences using the Divide and Conquer approach:

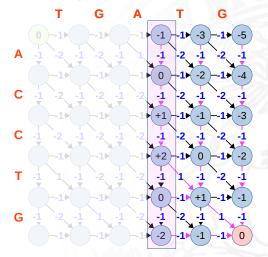
Try to align globally the following sequences using the Divide and Conquer approach:



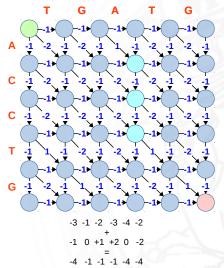
Try to align globally the following sequences using the Divide and Conquer approach:



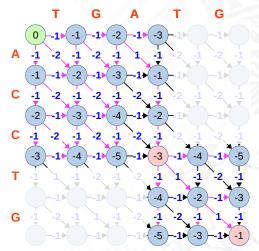
Try to align globally the following sequences using the Divide and Conquer approach:



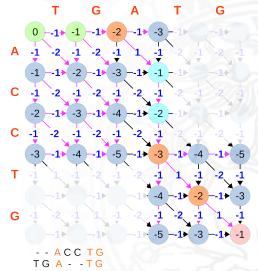
Try to align globally the following sequences using the Divide and Conquer approach:



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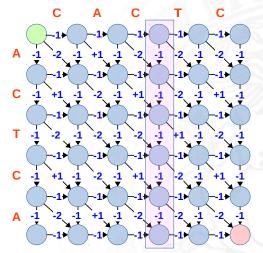


Try to align globally the following sequences using the Divide and Conquer approach:

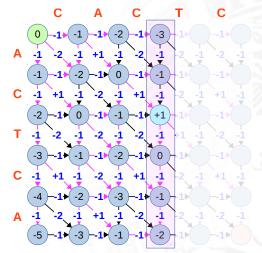


Try to align globally the following sequences using the Divide and Conquer approach:

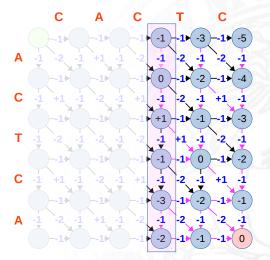
Try to align globally the following sequences using the Divide and Conquer approach:



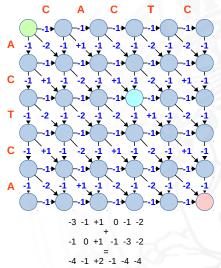
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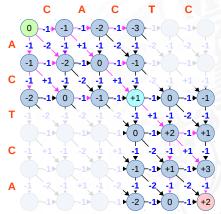


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Try to align globally the following sequences using the Divide and Conquer approach:

ACTCA and CACTC.



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