**BIM – Übung 2**

## Aufgabe 3.1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | s1 | s2 | s3 | s4 |  |
|  |  | GCTTATA | GCTATA | GTTATA | GCTTAGA | Σ |
| s1 | GCTTATA | 7 | 4 | 4 | 5 | **20** |
| s2 | GCTATA | 4 | 6 | 4 | 2 | 16 |
| s3 | GTTATA | 4 | 4 | 6 | 2 | 16 |
| s4 | GCTTAGA | 5 | 2 | 2 | 7 | 16 |

* Zentrum c = s1

Blätter B = {s2,s3,s4}

MA1 (c und s2):

GCTTATA

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GC-TATA

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A (c und s3):

GCTTATA

| |||||

G-TTATA

MA2:

GCTTATA

GC-TATA

G-TTATA

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A (c und s4):

GCTTATA

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GCTTAGA

MA3 (finales Alignment):

GCTTATA

GC-TATA

G-TTATA

GCTTAGA

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GCTTATA (Consensus-Sequenz)

Summe der Paare Bewertung = 6+(-3)+(-3)+6+6+0+6 = 18

Consensus Bewertung = 3

## Aufgabe 3.2

MATLAB code:

s1 = 'GCTTATA';

s2 = 'GCTATA';

s3 = 'GTTATA';

s4 = 'GCTTAGA';

scorematrix = eye(4);

scorematrix(scorematrix==0) = -1;

S = {s1,s2,s3,s4};

output = multialign(S,'ScoringMatrix',scorematrix,'GapOpen',2);

seqalignviewer(output)

