

9-20%  
21-40%  
41-60%  
61-80%  
81-90%

|                                                               | position                                        | Shannon | naive                                 | treated                         | position | Shannon | naive         | treated |
|---------------------------------------------------------------|-------------------------------------------------|---------|---------------------------------------|---------------------------------|----------|---------|---------------|---------|
|                                                               | ROD                                             | entropy | (32 sequences)                        | (14 sequences)                  | EHO      | entropy | (5 pts)       | (1 pt)  |
| N-terminal Domain                                             | HHCC Zinc coordination finger (H12-H16-C40-C43) | F1      | FL (3%)                               |                                 | F1       |         |               |         |
|                                                               |                                                 | L2      | I (9%)                                | I (7%)                          | L2       |         |               |         |
|                                                               |                                                 | E3      |                                       |                                 | E3       | 0.451   | L (1)         |         |
|                                                               |                                                 | K4      | R (15%) KR (9%)                       | R (21%)                         | K4       | 0.451   | L (1)         |         |
|                                                               |                                                 | E6      | Q (3%)                                |                                 | E6       | 0.451   | L (1)         |         |
|                                                               |                                                 | P7      |                                       | PS (7%)                         | P7       |         |               |         |
|                                                               |                                                 | E13     |                                       |                                 | E13      | 0.451   | G (1)         |         |
|                                                               |                                                 | K14     |                                       |                                 | K14      | 0.451   | KR (1)        |         |
|                                                               |                                                 | Y15     | F (9%)                                | F (14%)                         | Y15      |         |               |         |
|                                                               |                                                 | S17     | 0                                     |                                 | N17      | 0.868   | G (3), S (2)  | G       |
|                                                               |                                                 | V19     | I (44%) M (6%) IV (6%) L (3%) IM (3%) | I (43%)                         | V19      | 0.451   | M (1)         |         |
|                                                               |                                                 | K20     |                                       |                                 | K20      | 0       | R (1)         |         |
|                                                               |                                                 | S23     | T (31%) A (15%) V (6%) I (3%) AS (3%) | A (21%) T (21%) I (14%) AV (7%) | V23      | 0.451   | S (2)         |         |
|                                                               |                                                 | G27     | R (3%)                                |                                 | G27      |         |               |         |
|                                                               |                                                 | I28     | L (30%)                               | L (21%)                         | I28      |         |               |         |
|                                                               |                                                 | N30     | K (50%) Q (47%) KN (3%)               | K (43%) Q (36%) H (14%)         | C30      | 0.451   | N (2)         |         |
|                                                               |                                                 | L31     | I (3%)                                |                                 | L31      |         |               |         |
|                                                               |                                                 | R34     | K (6%) KR (3%)                        |                                 | R34      | 1.011   | K (1)         | K       |
|                                                               |                                                 | S33     | T (61%) K (3%)                        | T (100%)                        | S39      | 0.451   |               |         |
|                                                               |                                                 | A41     | T (12%) AT (3%) P (6%)                | T (21%) P (7%)                  | D41      |         |               |         |
| Catalytic Core Domain-----DDE Catalytic Triad (D64-D116-E152) | specific DNA binding & positioning              | I50     |                                       | Q (7%)                          | I50      | 0.637   | V (2)         |         |
|                                                               |                                                 | H51     |                                       |                                 | H51      | 0.451   | Q (1)         |         |
|                                                               |                                                 | N55     | D (3%) DN (3%)                        |                                 | N55      |         |               |         |
|                                                               |                                                 | A56     | T (3%)                                | T (14%) AT (7%)                 | S56      | 0.637   | A (4)         | A       |
|                                                               |                                                 | L58     | I (28%) V (22%) IV (3%)               | I (28%) IL (7%) V (14%)         | L58      |         |               |         |
|                                                               |                                                 | G59     |                                       | GV (7%)                         | G59      |         |               |         |
|                                                               |                                                 | T60     | V (31%) I (6%)                        | V (21%) FV (7%) I (14%)         | T60      |         |               |         |
|                                                               |                                                 | M63     | I (3%)                                |                                 | M63      |         |               |         |
|                                                               |                                                 | D64     |                                       |                                 | D64      | 0       | G (1)         |         |
|                                                               |                                                 | K71     | R (3%)                                |                                 | K71      | 0       |               |         |
|                                                               |                                                 | I72     | V (21%) IV (3%)                       | V (21%) IV (14%)                | V72      | 1.011   | I (4)         |         |
|                                                               |                                                 | S81     | N (3%)                                |                                 | S81      |         |               |         |
|                                                               |                                                 | I84     | V (3%) IV (3%)                        |                                 | I84      |         |               |         |
|                                                               |                                                 | P90     | S (3%) PS (3%)                        |                                 | P90      |         |               |         |
|                                                               |                                                 | Q91     | QR (3%)                               |                                 | Q91      |         |               |         |
|                                                               |                                                 | S93     | T (15%) ST (12%)                      | T (21%) ST (7%)                 | T93      | 0.451   |               |         |
|                                                               |                                                 | Q96     | H (3%) QH (3%)                        | H (7%) CY (7%)                  | Q96      |         |               |         |
|                                                               |                                                 | A98     |                                       |                                 | A98      | 0       |               | P       |
|                                                               |                                                 | T111    | S (3%)                                |                                 | T111     | 0.451   | AT (1)        |         |
|                                                               |                                                 | G118    | GS (3%)                               |                                 | G118     |         |               |         |
|                                                               |                                                 | A119    | P (31%) S (3%)                        | P (21%) AT (7%)                 | A119     | 0.451   | P (1)         |         |
|                                                               |                                                 | T122    |                                       |                                 | T122     | 0.868   | I (1)         |         |
|                                                               |                                                 | S123    |                                       |                                 | S123     | 0       | G (1)         |         |
|                                                               |                                                 | Q124    |                                       |                                 | Q124     | 0       | A (1)         |         |
|                                                               |                                                 | E125    |                                       | D (7%)                          | E125     | 0       | T (1)         |         |
|                                                               |                                                 | V129    |                                       |                                 | A129     | 1.011   | V (4)         | V       |
|                                                               |                                                 | I133    | V (69%) IV (9%) T (2%) A (3%)         | V (69%) IV (7%) A (7%)          | I133     | 0.637   | V (4)         | V       |
|                                                               |                                                 | G134    | GS (3%)                               |                                 | G134     |         |               |         |
|                                                               |                                                 | E136    | G (3%)                                |                                 | E136     |         |               |         |
|                                                               |                                                 | S138    | 0 T (12%)                             | T (14%)                         | T138     |         |               |         |
|                                                               |                                                 | V141    | I (3%)                                |                                 | V141     |         |               |         |
|                                                               |                                                 | Q146    |                                       |                                 | E146     | 0       | Q (3)         | Q       |
|                                                               |                                                 | S147    |                                       |                                 | S147     |         |               |         |
|                                                               |                                                 | A153    | S (3%) AS (3%)                        | S (7%)                          | A153     |         |               |         |
|                                                               |                                                 | I154    | IM (6%)                               | T (7%)                          | M154     |         |               |         |
|                                                               |                                                 | N155    |                                       | H (7%)                          | N155     |         |               |         |
|                                                               |                                                 | H156    |                                       |                                 | H156     |         |               |         |
|                                                               |                                                 | H157    |                                       | R (7%)                          | H157     |         |               |         |
|                                                               |                                                 | L158    |                                       | LP (7%)                         | L158     | 0.451   | P (1)         |         |
|                                                               |                                                 | N160    |                                       |                                 | N160     | 0.451   | S (1)         |         |
|                                                               |                                                 | S163    | D (31%) N (15%) NS (3%)               | D (21%) N (21%)                 | D163     | 0.451   | S (2)         |         |
|                                                               |                                                 | R164    | K (3%)                                | K (7%)                          | R164     | 0.451   |               |         |
|                                                               |                                                 | I165    |                                       |                                 | I165     |         |               |         |
|                                                               |                                                 | E167    | D (15%)                               | D (36%)                         | D167     |         |               |         |
|                                                               |                                                 | A169    | S (3%)                                |                                 | A169     |         |               |         |
|                                                               |                                                 | N170    | NS (3%)                               |                                 | V170     |         |               |         |
|                                                               |                                                 | I172    | V (50%) IV (3%) M (9%)                | V (57%) M (21%)                 | I172     | 0.451   | L (1)         | V       |
|                                                               |                                                 | I175    | V (9%)                                | V (14%) T (7%)                  | V175     |         |               |         |
|                                                               |                                                 | #I180   | V (97%) T (3%)                        | V (100%)                        | T180     | 1.011   | A (2)         | A       |
|                                                               |                                                 | F185    |                                       | Y (7%) FY (7%)                  | F185     |         |               |         |
|                                                               |                                                 | S197    | A (79%)                               | A (86%)                         | A197     |         |               |         |
|                                                               |                                                 | L200    |                                       |                                 | L200     | 0.637   | L (4)         | L       |
|                                                               |                                                 | I201    | L (3%)                                | L (7%)                          | I201     |         |               |         |
|                                                               |                                                 | I204    |                                       |                                 | I204     | 0.451   | V (1)         |         |
|                                                               |                                                 | T206    | A (12%)                               | A (7%)                          | T206     |         |               |         |
| C-terminal domain                                             | non specific DNA binding domain                 | F212    |                                       | FY (7%)                         | F212     |         |               |         |
|                                                               |                                                 | L213    | F (3%)                                | F (7%)                          | L213     | 1.011   | F (2), HL (1) | F       |
|                                                               |                                                 | Q214    | H (3%) HQ (3%)                        |                                 | Q214     |         |               |         |
|                                                               |                                                 | A215    | R (41%) T (12%)                       | R (36%) T (7%) AT (7%)          | T215     | 0.693   | A (3)         | N       |
|                                                               |                                                 | N217    | D (3%)                                | D (7%)                          | N217     | 0       |               | K       |
|                                                               |                                                 | K219    | N (38%) T (3%) NT (3%)                | N (28%) I (7%)                  | K219     |         |               |         |
|                                                               |                                                 | L220    | F (56%) FS (3%)                       | F (50%)                         | F220     | 0.451   | L (2)         |         |
|                                                               |                                                 | K221    | Q (6%) QR (3%)                        | Q (7%)                          | Q221     | 1.011   | K (2)         |         |
|                                                               |                                                 | #D222   | N (91%) K (9%)                        | N (79%) K (21%)                 | N222     |         |               |         |
|                                                               |                                                 | R224    | Q (44%)                               | Q (43%)                         | # R224   | 0.637   | Q (5)         | Q       |
|                                                               |                                                 | Y226    | F (3%) FY (3%)                        |                                 | Y226     |         |               |         |
|                                                               |                                                 | F227    | 0 Y (47%)                             | Y (36%)                         | Y227     | 0.451   | F (2)         | F       |
|                                                               |                                                 | E229    | EG (3%)                               |                                 | E229     |         |               |         |
|                                                               |                                                 | D232    | E (3%) DE (3%)                        |                                 | D232     |         |               |         |
|                                                               |                                                 | L234    | Q (12%) LQ (3%)                       | Q (7%)                          | L234     |         |               |         |
|                                                               |                                                 | K236    | R (3%)                                |                                 | K236     |         |               |         |
|                                                               |                                                 | E240    |                                       |                                 | # D240   | 0.451   | E (6)         | E       |
|                                                               |                                                 | E246    | 0 D (82%)                             | D (78%)                         | E246     |         |               |         |
|                                                               |                                                 | V249    | IV (3%)                               |                                 | V249     |         |               |         |
|                                                               |                                                 | #L250   | I (67%) V (3%)                        | I (63%) V (7%)                  | I250     |         |               |         |
|                                                               |                                                 | V251    | I (3%) AV (3%)                        |                                 | I251     |         |               |         |
|                                                               |                                                 | T255    | A (34%) S (3%)                        | A (28%)                         | T255     | 0.451   | A (1)         |         |
|                                                               |                                                 | D256    | 0 E (6%)                              |                                 | E256     | 0.451   | D (1)         |         |
|                                                               |                                                 | I259    | V (66%) IV (3%)                       | V (65%)                         | V259     |         |               |         |
|                                                               |                                                 | I260    | V (59%) IV (6%)                       | V (71%)                         | I260     | 0.637   | V (4)         | V       |
|                                                               |                                                 | R262    |                                       |                                 | R262     |         |               |         |
|                                                               |                                                 | K264    |                                       |                                 | K264     |         |               |         |
|                                                               |                                                 | A265    |                                       |                                 | A265     |         |               |         |
|                                                               |                                                 | K266    |                                       |                                 | K266     |         |               |         |
|                                                               |                                                 | I267    | V (3%)                                |                                 | I267     |         |               |         |
|                                                               |                                                 | I268    |                                       |                                 | I268     |         |               |         |
|                                                               |                                                 | R269    | K (12%) KR (6%)                       | K (21%)                         | R269     |         |               |         |
|                                                               |                                                 | D270    |                                       | N (7%)                          | # N270   | 0.868   | H (4), Q (1)  | H       |
|                                                               |                                                 | Y271    |                                       |                                 | Y271     |         |               |         |
|                                                               |                                                 | R274    | RT (3%)                               |                                 | G274     | 0.451   | R (1)         |         |
|                                                               |                                                 | E276    | G (3%)                                |                                 | E276     | 0.868   | D (1)         |         |
|                                                               |                                                 | M277    | L (56%) LM (3%) V (3%)                | L (50%) V (7%)                  | L277     |         |               |         |
|                                                               |                                                 | S279    | N (6%)                                | NS (7%)                         | C279     |         |               |         |
|                                                               |                                                 | G280    | S (41%) GS (6%)                       | S (43%)                         | S280     | 0.637   | G (3)         |         |
|                                                               |                                                 | S281    | P (44%) PS (18%) T (6%)               | P (50%) PS (14%) T (7%)         | A281     | 0.637   | T (1)         |         |
|                                                               |                                                 | H282    | N (12%)                               | N (21%)                         | D282     |         |               |         |
|                                                               |                                                 | L283    | V (3%)                                | V (14%)                         | V283     | 0.693   | M (2)         | MV      |
|                                                               |                                                 | G285    | S (6%) D (3%)                         |                                 | D285     |         |               |         |
|                                                               |                                                 | A286    | T (12%) AT (3%) AS (3%)               | AT (7%)                         | T286     |         |               |         |
|                                                               |                                                 | R287    | 0 K (3%)                              |                                 | M287     | 0.868   | R (3), G (1)  | R       |
|                                                               |                                                 | E288    |                                       |                                 | *Q288    | 0       | *             | *       |
|                                                               |                                                 | D289    | N (3%) DN (3%)                        |                                 | A289     | 0       |               | D       |
|                                                               |                                                 | G290    |                                       |                                 | R290     | 0       |               | G       |
|                                                               |                                                 | E291    | EG (3%)                               |                                 | V292     | 0.637   |               |         |
|                                                               |                                                 | M292    | V (60%) MV (12%)                      | V (79%)                         | Q294     |         |               |         |
|                                                               |                                                 | *294    | 0                                     |                                 | * 297    | 0.637   |               |         |
|                                                               |                                                 | 297     |                                       |                                 | *300     | 0.637   |               |         |
|                                                               |                                                 | 300     |                                       |                                 | *302     | 0       |               |         |
|                                                               |                                                 | 302     |                                       |                                 |          |         |               |         |