**Table S7.** Results of CLOVER analysis of the enhancer region with sequence information for human and mouse *NAGS*. Results were filtered to exclude motifs for transcription factors that are not expressed in the liver.

|  |
| --- |
| Sequence file: NAGS\_promoter.txt (7 sequences, 7031 bp, 52.8% C+G) |
| Motif file: transfac\_pro\_n (588 motifs) |  |  |
|  |  |  |  |
| Motif  | Raw score | P-value from randomizing |
| M00933|Sp1  | 20.3 | 0 |  |
| M00196|Sp1  | 19.8 | 0 |  |
| M00932|Sp1  | 19.7 | 0 |  |
| M00931|Sp1  | 19.6 | 0 |  |
| M00255|GC box  | 14.7 | 0.0001 |  |
| M00257|RREB-1  | 11.3 | 0.006 |  |
| M00008|Sp1  | 8.38 | 0 |  |
| M00721|CACCC-binding factor  | 8.05 | 0.001 |  |
| M00691|ATF1  | 5.05 | 0 |  |
| M00117|C/EBPbeta  | 3.99 | 0.005 |  |
| M01082|BRCA1:USF2  | 2.68 | 0.001 |  |
| M00916|CREB  | 1.42 | 0.006 |  |
| M00017|ATF  | 1.03 | 0.003 |  |
|  |  |  |  |
| Motif  |  Location  | Strand  | Sequence  |
| **>humanNAGS\_promoter** |  |  |  |
| M00932|Sp1  | 22 - 34  | +  | atagggtgggact  |
| M00932|Sp1  | 138 - 150  | +  | agtgggaggactg  |
| M00008|Sp1  | 233 - 242  | +  | tgggcatggt  |
| M00257|RREB-1  | 244 - 257  | -  | gtgtgcatttgtgg  |
| M00255|GC box  | 302 - 315  | +  | gggaggtggaggct  |
| M00932|Sp1  | 302 - 314  | +  | gggaggtggaggc  |
| M00257|RREB-1  | 474 - 487  | -  | aggggtgttttgag  |
| M00117|C/EBPbeta | 526 - 539 | - | gagtttggcaaacc |
| M00916|CREB  | 542 - 555  | +  | ggtaacctcatggt  |
| M00255|GC box  | 607 - 620  | -  | accacccgcccccg  |
| M00932|Sp1  | 608 - 620  | -  |  ccacccgcccccg  |
| M00255|GC box  | 613 - 626  | -  | cgcccccgccctcc  |
| M00932|Sp1  | 614 - 626  | -  | gcccccgccctcc  |
| M00932|Sp1  | 618 - 630  | -  | ccgccctcccact  |
| M00935|NF-AT  | 646 - 655  | -  | ctctttccag  |
| M00932|Sp1  | 850 - 862  | +  | caggggcggggga  |
| M00255|GC box  | 850 - 863  | +  | caggggcgggggag  |
| M00255|GC box  | 869 - 882  | -  | tggccccgccccct  |
| M00932|Sp1  | 870 - 882  | -  | ggccccgccccct  |
| M00255|GC box  | 940 - 953  | -  | ggaccccgccccga  |
| M00932|Sp1  | 941 - 953  | -  | gaccccgccccga  |
| M00255|GC box  | 961 - 974  | -  | cagccccgcccaac  |
| M00196|Sp1  | 962 - 974  | -  | agccccgcccaac  |
| M01082|BRCA1:USF2  | 1038 - 1045  | +  | gttggttg  |
| M00017|ATF  | 1041 - 1054  | -  | ggttgtcgtcatgg  |
| M00916|CREB  | 1042 - 1055  | +  | gttgtcgtcatggc  |
|  |  |  |  |
| **>mouseNAGS\_promoter** |  |  |  |
| M00691|ATF1  | 53 - 63  | -  | tgagttcaagg  |
| M00932|Sp1  | 247 - 259  | -  | atcaccgcccccc  |
| M00932|Sp1  | 252 - 264  | -  | cgccccccccccc  |
| M00257|RREB-1  | 274 - 287  | -  | gttttgttttgtgt  |
| M01082|BRCA1:USF2  | 566 - 573  | -  | caacagga  |
| M00255|GC box  | 598 - 611  | -  | ggaccacaccccct  |
| M00932|Sp1  | 599 - 611  | -  | gaccacaccccct  |
| M00721|CACCC-binding factor  | 785 - 800  | -  | ccatacacaaggggcg  |
| M00932|Sp1  | 793 - 805  | +  | aaggggcggagaa  |
| M00932|Sp1  | 813 - 825  | -  | ggcgccaccctct  |
| M00257|RREB-1  | 844 - 857  | +  | cctcaaacgcaccc  |
| M00255|GC box  | 882 - 895  | -  | ccatcccgccccga  |
| M00932|Sp1  | 883 - 895  | -  |  catcccgccccga  |
| M00721|CACCC-binding factor  | 959 - 974  | +  | cgtcacctgtgggtgg  |
| M00257|RREB-1  | 965 - 978  | -  | ctgtgggtgggggg  |
| M00255|GC box  | 966 - 979  | +  | tgtgggtggggggg  |
| M00196|Sp1  | 966 - 978  | +  | tgtgggtgggggg  |
| M00932|Sp1  | 970 - 982  | +  | ggtgggggggacg  |
| M00932|Sp1  | 974 - 986  | +  | ggggggacgagtg  |
| M00257|RREB-1  | 982 - 995  | -  | gagtgggtttggtt  |
| M00257|RREB-1  | 986 - 999  | -  | gggtttggttgtcg  |
| M01082|BRCA1:USF2  | 989 - 996  | +  | tttggttg  |
| M00017|ATF  | 992 - 1005  | -  | ggttgtcgtcatgg  |
| M00916|CREB  | 993 - 1006  | +  | gttgtcgtcatggc  |