

**Homework I (Weller component)**

There is a database of eukaryotic transcription factors and their binding sites called TRANSFAC. It is described in the publication: Heinemeyer et al., 1998, Nucleic Acids Res. 26:364-370. It can be accessed at: <http://www.gene-regulation.com/>. You will have to register for an account but it is free. You can visualize the items of the feature list (FACTOR table) as well as element positions within regulatory regions (GENE table). These are experimentally derived data: with 2285 FACTOR and 4602 SITE entries.

1. Make an account. Read the paper and the Help information.
2. How is the determination made to accept a transcription factor and the binding site into the database?
3. For the factors NFAT, SRF, MDF, Sp1 and MEF2, find the information for two species.
4. Compare the binding sites for each transcription factor between the species.
5. How conserved are the protein sequences between the two species?