



Alignment of human, rat and mouse TDP43 sequences (NP_031401.1, XP_006239444.1 and NP_663531.1 respectively). The TDP43 protein contains two RNA recognition motifs (RRM), which are at the indicated position. RRM1 is very abundant in the genome and are found in proteins which have roles in RNA processing. As is obvious the amino acid sequence of the molecule is extremely highly conserved. The EnCor MCA-3H8 antibody was raised against recombinant full length human TDP43, and the epitope for this antibody is as shown above in yellow, mapping to the C-terminal region of human TDP43, a region of low sequence complexity. Epitope mapping was performed by generating a series of staggered 20 amino acid peptides which covered the entire human sequence with 5 amino acid overlap between neighboring peptides. Only the one indicated peptide, KHNSNRQLERSGRFGGNPGGF, amino acids 264-283, inhibited binding of MCA-3H8 to recombinant human TDP43 (highlighted above in yellow). Since the previous and next peptides had no apparent inhibitory effect on antibody binding, the central 10 amino acids of the peptide is likely the most significant component of the MCA-3H8 epitope. As can be seen the peptide is identical in rat and mouse TDP43, in line with our findings that the antibody works well on these species. We also showed directly that this antibody recognizes cow, pig and horse TDP43, which also include an identical peptide. A Blast search shows the peptide is 100% conserved in hundreds of mammalian TDP43 sequences, so that this antibody should be of general utility in many species.