

1 PTPRF

The protein encoded by this gene is a member of the protein tyrosine phosphatase (PTP) family. PTPs are known to be signaling molecules that regulate a variety of cellular processes including cell growth, differentiation, mitotic cycle, and oncogenic transformation. This PTP possesses an extracellular region, a single transmembrane region, and two tandem intracytoplasmic catalytic domains, and thus represents a receptor-type PTP. The extracellular region contains three Ig-like domains, and nine non-Ig like domains similar to that of neural-cell adhesion molecule. This PTP was shown to function in the regulation of epithelial cell-cell contacts at adherents junctions, as well as in the control of beta-catenin signaling. An increased expression level of this protein was found in the insulin-responsive tissue of obese, insulin-resistant individuals, and may contribute to the pathogenesis of insulin resistance. Two alternatively spliced transcript variants of this gene, which encode distinct proteins, have been reported.

The gene shows a really interesting differential expression and different splicing patterns for different states. PTPRF is upregulated after Ebola infection in human, whereas the expression does not change in bat. In contrast Marburg infection leads to an expression decrease in human and an 2-fold up-regulation in bat 23 h after infection. An undescribed splice variant is observed only in human 23 h after infection with Ebola. In addition, the last exons show a diverse splicing pattern in different conditions.

Tyrosine phosphorylation during Ebola virus infection on VP40 can be performed by c-ABL1 tyrosine kinase and is important for viral life cycle. Furthermore, reduced levels of protein tyrosine phosphatase CD45 protect mice from lethal effects of Ebola virus infection. Thus, events involved in tyrosine phosphorylation of Ebola virus proteins seem to be important ??.

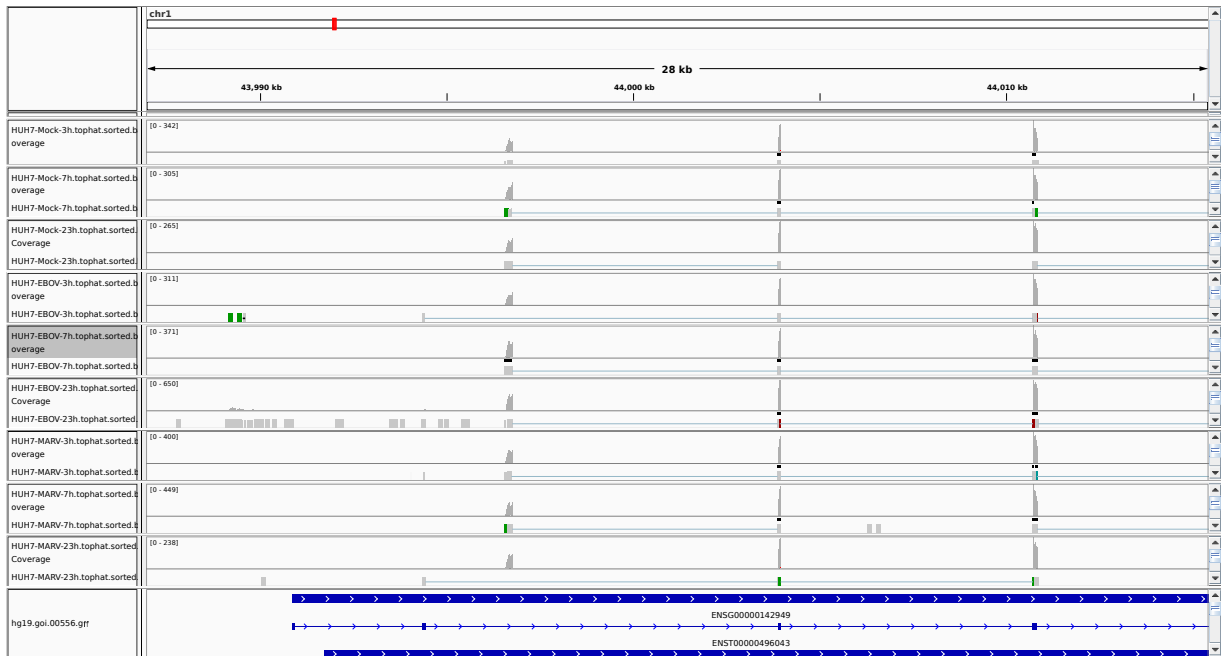


Figure 1: IGV Genome Browser screenshot of gene PTPRF.

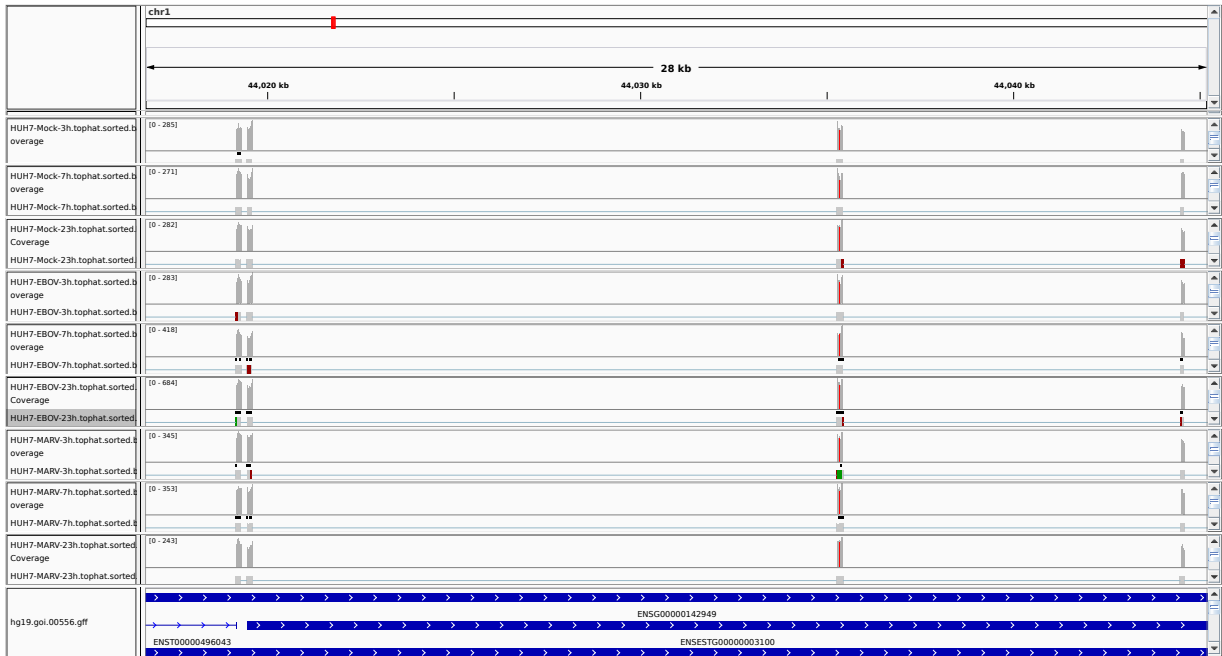


Figure 2: IGV Genome Browser screenshot of gene PTPRF.

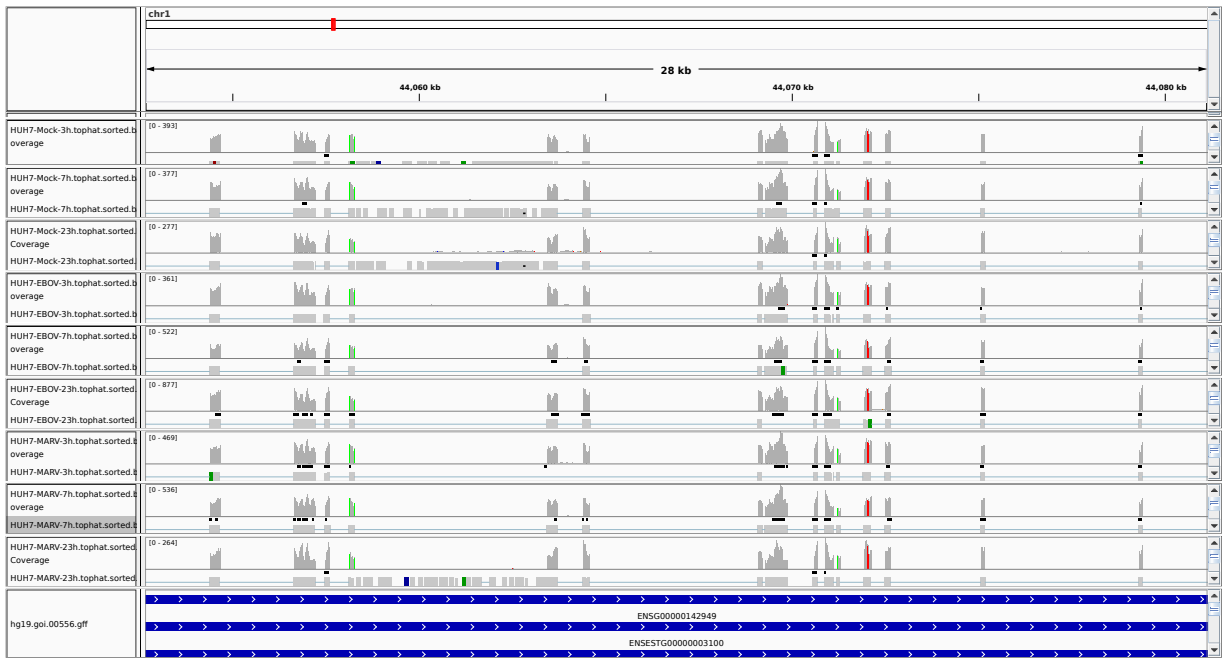


Figure 3: IGV Genome Browser screenshot of gene PTPRF.

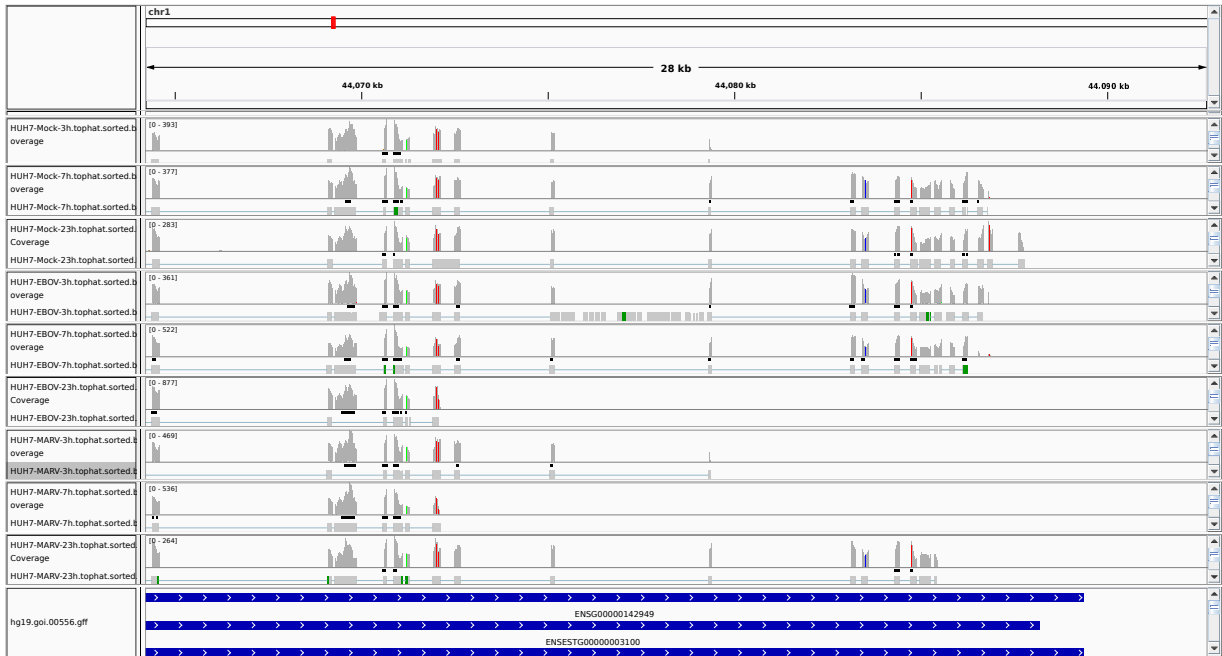


Figure 4: IGV Genome Browser screenshot of gene PTPRF.

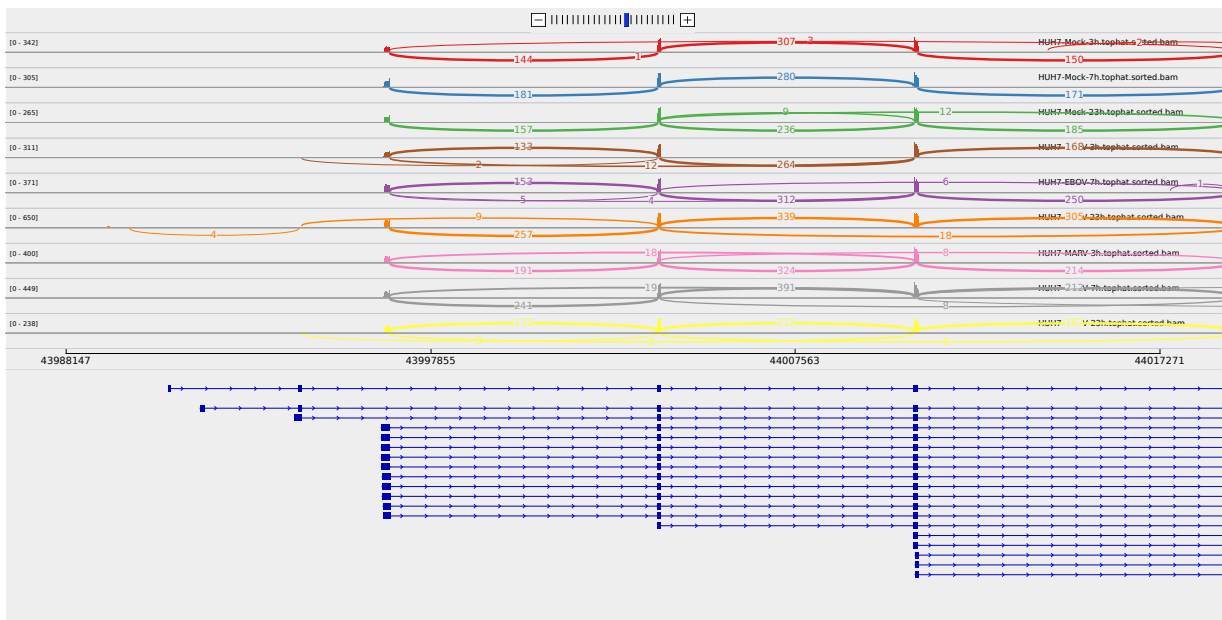


Figure 5: Sashimi plot of gene PTPRF.

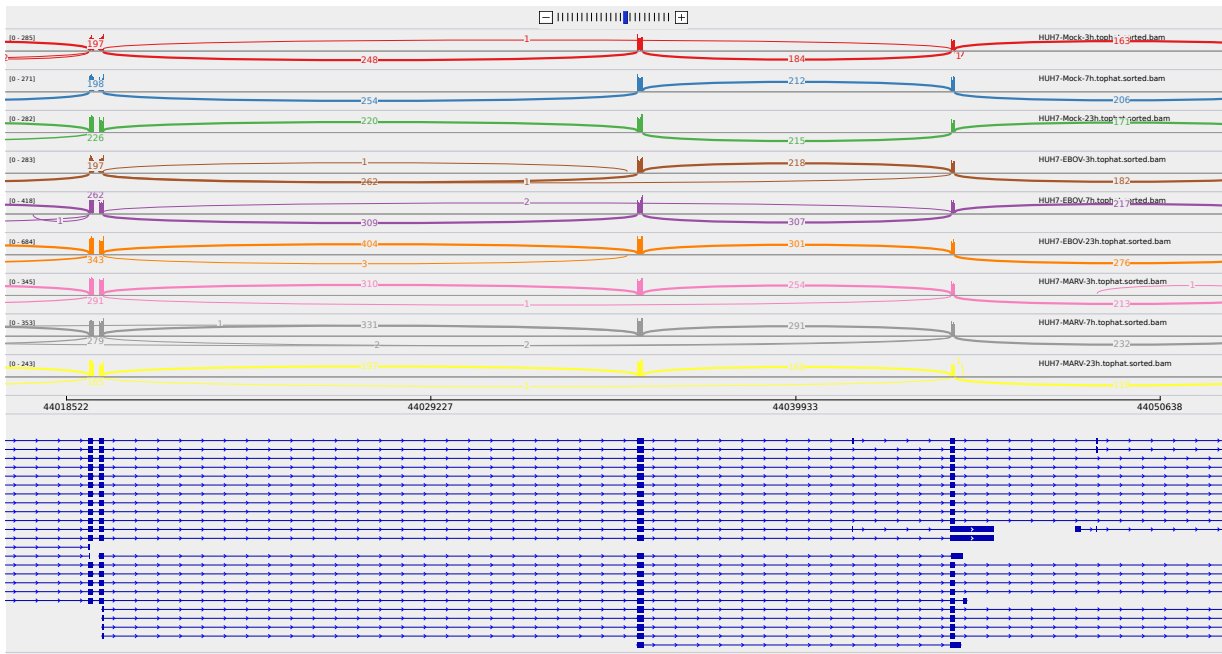


Figure 6: Sashimi plot of gene PTPRF.

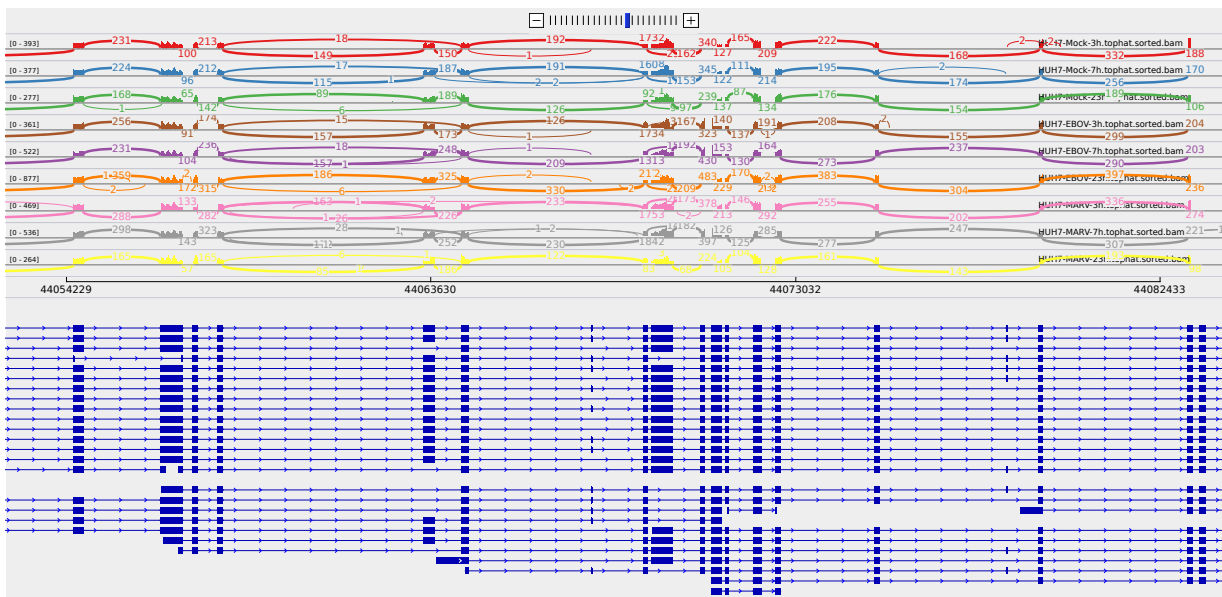


Figure 7: Sashimi plot of gene PTPRF.

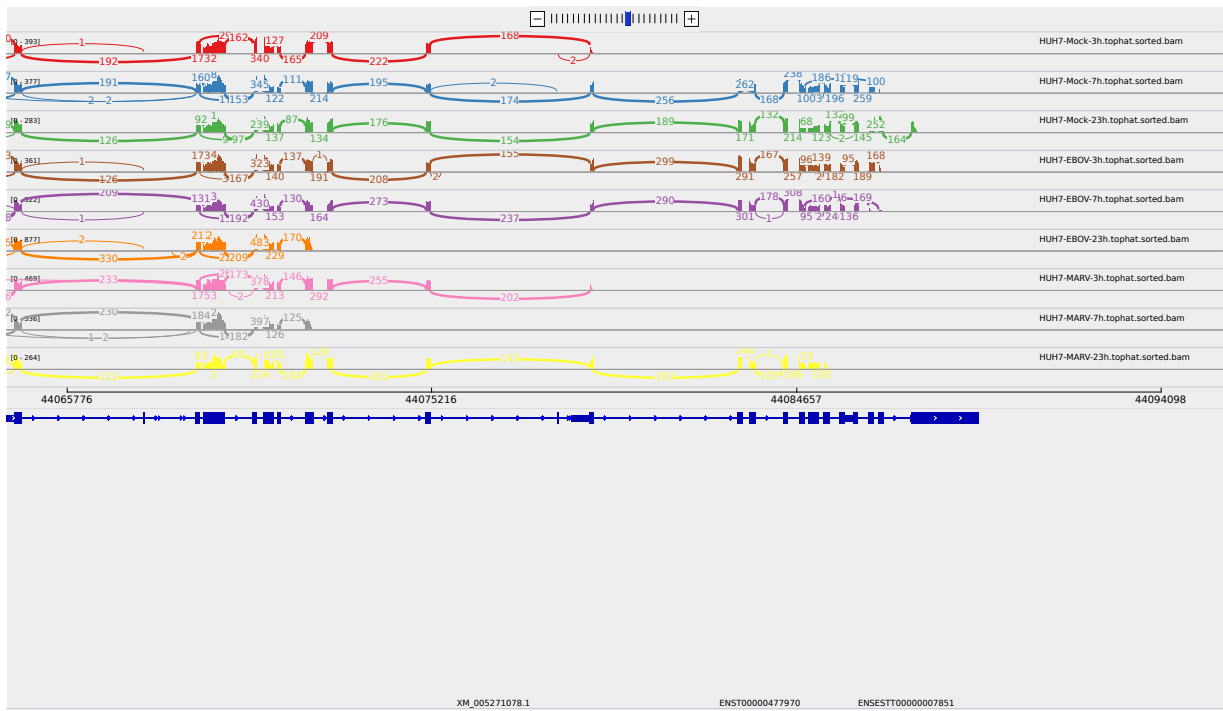


Figure 8: Sashimi plot of gene PTPRF.

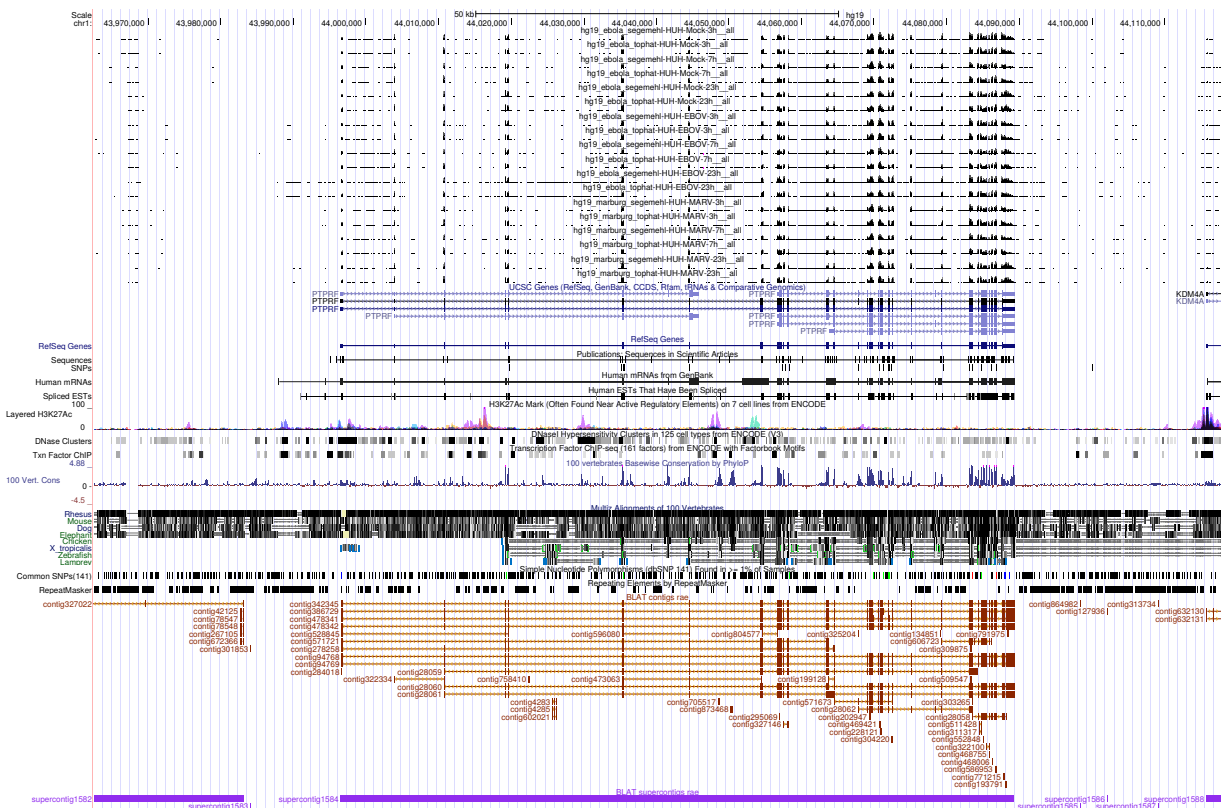


Figure 9: UCSC Genome Browser screenshot of gene PTPRF.