UniSTS – SNPs

1. Report the folllowing features of the human gene TSC1:
    a. The gene id;
    b. The function and the associated disease;
    c. The accession code and the length of the possible isoforms;
    d. The accession code and the original name of a unique marker common to *Homo Sapiens, Macaca Mulatta* and *Pan Troglodytes*.
        i. For each organism report:
            1. Chromosomal location and genomic location (bp);
            2. The accession code of the corresponding contig;
            3. The accession codes of the corresponding mRNAs.

2. In the UniSTS data base find the record RH68414 and report
    a. the position of the marker in the HuRef and Celera chromosomes;
    b. the code id, names and functions of the associated genes;
    c. the marker position in the corresponding mRNAs.

3. Among the SNPs associated with the human TSC1 gene report those with PubMed references and write the most recent reference.
    a. Of the first reference cluster report:
        i. The accession code and the mutation;
        ii. The accession codes of mRNAs and contig in GRCh37 assembly where it maps to;
        iii. The accession code of the submitted record which reports the SNP frequency in samples from Europe, Asia e Africa;
            1. The related allelic and genotipic frequencies.

4. Report the following features of the human gene SNTB2:
    a. The gene id, chromosomal location, map position in bp;
    b. The gene function and the associated disease;
    c. The accession codes and length of mRNAs, proteins and contig in GRCh37 assembly where it maps to;
    d. The number of exons in the Consensus CDS database and amino acids and corresponding codons across splice junctions;
    a. mutation and alleles of rs78009624 marker;
        i. the accession code and position in contig, mRNA and protein;
        ii. the allele frequency in the examined samples.

5. For the homologous genes in mouse and rat, report:
    a. the accession code and map position of del contig;
    b. the accession code and map position of the UniSTS markers;
    c. the accession code and map position of the SNP reference clusters.