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Identification of a Quinone Oxidoreductase Superfamily Gene and Its Chromosomal Mapping to Human Ch21q22.1

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A complementary DNA clone was screened with a single-copy genomic DNA fragment derived from yeast artificial chromosome (YAC) clone D142H8 which contained phosphoribosylglycinamide formyltransferase (GART) gene and an accessory factor-1 (AF-1) gene of human interferon receptor-gamma receptor. The length of the clone is 1337 nt and has an the longest open reading frame (ORF) of 349 amino acids. Genbank search revealed that it is the forth member of quinone oxidoreductase super family. Therefore, the gene was named as quinone oxidoreducase family-4 (qorf-4). The putative protein contains the conserved glycine-rich NADPH binding motif (A/GXGXXGXXXA), which suggest that it might have an enzymatic activity, possibly reductase with NADPH as a cofactor. Multiple tissue Northern blot data showed that the mRNA was expressed ubiquitously. The gene of qorf-4 is located on human Chromosome 21q22.1 region where the YAC was mapped. The location of the gene is further localized on the YAC D142H8 with respect to 2 NotI sites and GART and AF-1 loci.
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Characterization and Mapping of Orphan Nuclear Hormone Receptor SHP Gene

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We have previously reported that the orphan nuclear hormone receptor SHP act as a heterodimeric partner of several nuclear hormone receptors and it inhibits the activity of these receptors. In order to study the gene regulation mechanism, we have cloned the genomic DNA of SHP from mouse and human genomic library. Exon-intron structure of mouse and human SHP genomic DNA are determined. Both genomic structure contain two exons and one intron. 2.3Kb of mouse and 1.3Kb of human SHP gene. Several potential transcription factor binding sites such as SP-1, AP-1, GATA, ROR, and NFkB exist in mouse SHP promoter region. SHP gene is localized in human chromosome numeber 1 by somatic cell hybrid panel and fluoresence *in situ* hybridization (FISH) analysis. [suppotred by HRC-96-0201]