A human cDNA sequence for a novel glutathione peroxidase-related selenopeptide, GPRP

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A cDNA clone was isolated from a human liver library in λ gt11 by hybridisation with a probe derived from the 3' half of the mouse Glutathione Peroxidase (GPX) gene (1). The sequence is presented below, along with the predicted amino acid sequence. The selenocysteine moiety is represented by an asterisk at the position of the first in frame TGA codon and the polyadenylation signal is in bold type. There is considerable homology between this sequence and that of the human liver GPX cDNA previously reported (2). The 5' non-coding region has 53% homology with that of the human GPX cDNA 5' region, and bases 328 to 564 show 82% homology with exon 1 of the human GPX gene. This cDNA, together with the recent discovery of two GPX-related genes in the human genome (3), suggests that a number of GPX-related selenopeptides may exist.

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TCTAGACTAATTAAGAAACGGTTGAGTAAGACAGAGCTGGAAGATCCCGCCTAAGCAAG 60
CAGCTTCCTTCCAGACTAGTGCTACAGGAGCTAGACAGACCCGCGCTAGGCCACTCCAG 120
GCGCTTTAGCCGCGCGCACCCCTCTTCCCTGTTCTCGATGGGGGAGGGTAGAGGCCGG 180
ATAAGGCGGGACCCCTGAGACITAGAGCTGGCTGCCAGCGGAAAGAAAGGATGCCACGTG 240
ATCTCAGCACCATCCAGTTAAAAGGAGGTGCAGGGCCCTGTGAGCGCTAGTAGCGATTCC 300
ACGTTTGAGTCCCAACATCTCCAGTATGTGTGCTGCTCGGCTCTCCGCGCGGCACAGTC 360
      M C A A R L S A A A Q S
CACGCTGTATGCGCTTCTCCGCGCGCCCGCTGACGGGCGGGAGCCTGTGAGCCTGGGCTC 420
T V Y A F S A R P L T G G E P V S L G S
CCTCGGGGCAAGGTGCTGCTCATTTGAGAATGTGGGTCTCTCTGAGGCAACACGATCG 480
L R G K V L L I E N V A S L * G T T I R
GGACTACACCGAGATGAACGATCTGCAGAAGGCTCTGGGACTGGTGGTGTCTCGGTTTCCC 540
D Y T E M N D L Q K R L G L V V L G F P
GTGCAATCAGTTGGGACACGAGTATATGGGGGAGATGGGTGGCCCTTGGGCTCTAGGCT 600
C N Q F G H Q V Y G A R W V A L G S R L
CCACGGGCGGGACACCGCTTACITTTCTCTCTGTTACTACAGCTGGAATGCAGGCCAT 660
P R A G H R L L S P L V L Q L E C R P I
CCTCGGTTATACAAGGAGGGCAACITTCCTGGTGAATCATCGGGAACCTCTGTTTACAG 720
L G Y T R R A T S W End
TTAAAAAGTACATTCTTTTCGAAATCCTAGCACATAAATAAATGCCTTTGTCTCTCCCTAG 780
GAGAATGGCAAGATGAAGAGATTCTGA 808

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