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Nucleotide sequence of the cDNA encoding the rat argininosuccinate synthetase

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Argininosuccinate synthetase is a key cytoplasmic enzyme in the mammalian urea cycle. The cDNA and genomic clones encoding the human gene have been isolated and characterized (1, 2). By screening with a human cDNA clone, a 1495 bp clone was isolated from a rat kidney cDNA library. A protein of 412 amino acids is coded with 97% identity to the human enzyme. At a nucleotide level, there is 89% identity over the translated region. In the human, the AUG start codon is in exon 3. There are 14 bp 5' to the start site in the rat clone analysed, with only 5 out of these 14 nucleotides being identical with the human. In the 3' untranslated region, there is an overall 75% identity, with an internal region of 25 nucleotides having 92% identity to the human.

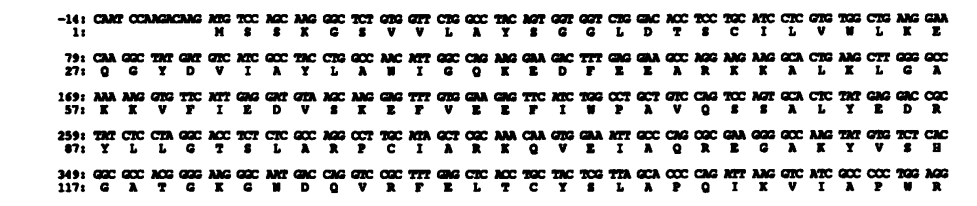

Figure 1. Nucleotide and amino acid sequence of rat argininosuccinate synthetase.

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References

1. Bock, H.G.O., Su, T.S., O'Brien, W.E., Beaudet, A.L. (1983) Nucl. Acids Res. 11, 6505-6512
2. Freytag, S.O., Beaudet, A.L., Bock, H.G.O., O'Brien, W.E. (1984) Mol. Cell. Biol.4, 1978-1984

