Nucleotide sequences of a cDNA clone encoding mouse ribosomal protein S24

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A cDNA clone pAd-5 was isolated from a 3T3-L1 preadipocytes cDNA library in LambdaGem-4 by differential hybridization. The expression of pAd-5 mRNA (about 600 bases in size) was drastically reduced in terminally differentiated 3T3-L1 adipocytes (data not shown). Nucleotide sequence comparisons of the cDNA clone and other sequences have revealed that it codes for the mouse equivalent of the human ribosomal protein S24 (1), the rat ribosomal protein S24 (2), and the *Xenopus laevis* ribosomal protein S19 (3). The mouse cDNA sequence shares homology with human (89%), rat (95%) and frog (81%), over their common protein-coding sequences. The deduced amino acid sequence codes for a 130 amino acids protein with a MW of 15087 Dalton, and the sequence matched completely with that of human and rat, except for one conservative change at position 99 (Lys to Arg). Moreover, the mouse protein lacks the C-terminal PKE tripeptide found in the human and rat S24 protein. Interestingly, this situation is created by the addition of an extra 20 nucleotide sequence (421 to 440) in the mouse cDNA sequence (Fig. 1). We have noticed an identical situation occurring in the CHL cell (hamster) cDNA where the same 20 nucleotides are present (1). It is interesting to point out that the last two nucleotides of the 20 nucleotide sequence is the same as the 3′ dinucleotide (AG) splice junction (4). We suggest that this site may be an alternative acceptor site for splicing. It is apparent that the removal of this 20 nucleotide sequence results in C-terminal addition of the tripeptide in the human and rat proteins (Fig. 1).

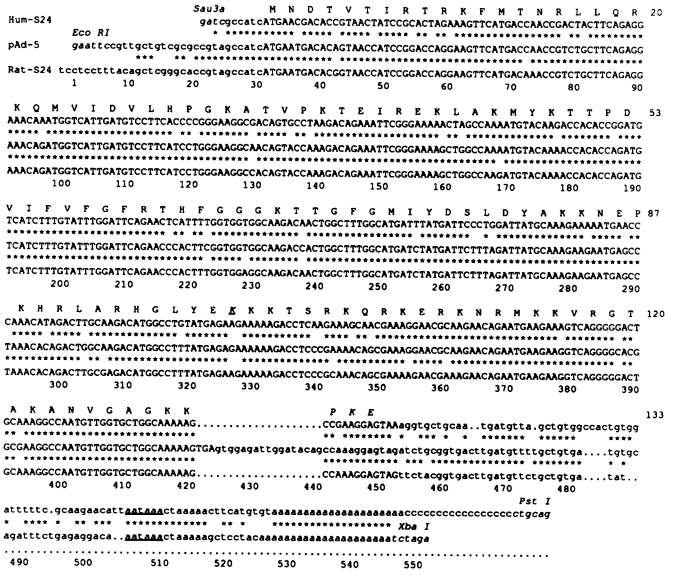

Figure 1. Nucleotide sequence comparisons of pAd-5 with human and rat S24 cDNA sequences. The 5′-leader and 3′-nontranslated sequences are in lower case letters. Nucleotide numbers are indexed on the first residue of the 5′ *EcoRI* linker adaptor, and the *XbaI* cleavage site is used to construct the Lambda-Gem-4 cDNA library is marked at the 3′-end of the mouse cDNA sequence. The underlined nucleotide sequences are canonical polyadenylation signals. The deduced amino acid sequence is written on the top line in single letter form. The conservative amino acid substitution at position 99 is underlined.

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