Expression and characterization of the human L10 (QM) protein in *E. coli*

Pereira, L. M[1]; Alves, J. F.[1]; Silvério, B. L.[1]; Salles, D. C. N.[1]; Silva, L. R.[1]; Morganti, L[1];; Tasic, L. [2] Silva, I. D.C. G. [3] and Affonso, R.[1]

[1]Centro de Biotecnologia, IPEN, SP
[2] Departamento de Química Orgânica, IQ, UNICAMP, SP
[3] Laboratório de Ginecologia Molecular, UFESP, SP

The ribosomal protein L10 (QM) belongs to the L10e family of proteins that are highly conserved from yeast to human. This protein is essential for joining the 60S and 40S subunits in the late step of translation initiation of the mRNAs. QM proteins are basic, hydrophilic and have approximately 24-26 kDa. The exact biological functions of human QM are not fully understood; however, it was indicated as putative tumor suppressor since it was identified in Wilms' tumor cell lines, and recent studies demonstrated that QM is essential for cell growth, differentiation and apoptosis. It can bind with nuclear c-Jun or with c-Yes proteins in the cytoplasm to inhibit the cell proliferation. Various QM cDNAs have been cloned from diverse species and these were expressed in bacterial inclusion bodies and solubilized with chaotropic agents but the best results were obtained for cDNA codifying QM with 680 bp that was cloned in p1813 vector. Expressions of the transformed *E. coli* cells were executed at 25°C and 30°C during 16h, and after purification procedures, the 24.5 kDa protein with 215 amino acid residues was obtained. QM structural analyses by Dichroism Circular and Fluorescence demonstrated its folded form with predominantly β sheet in accordance with the literature.