Online Resource 3

Thermodynamic Stability Explains the Differential Evolutionary Dynamics of Cytochrome b and COX I in Mammals.

Journal of Molecular Evolution.

Juan Carlos Aledo, Héctor Valverde and Manuel Ruíz-Camacho.

Departamento de Biología Molecular y Bioquímica. Facultad de Ciencias. Universidad de Málaga. (Email: caledo@uma.es)

Discrimination between buried and exposed residues. For each species, 3D structures for cytochrome b and COX I were used to quantitatively determine the accessibility of each residue. Amino acid residues having accessibilities above 5% were defined as exposed, while those having accessibilities lower than this threshold were defined as buried. The number of instances (species) each residue position appeared as buried according to the above criterion was computed, and plotted against the residue position in the primary structure of cytochrome b (a) and COX I (c). The transmembrane positions are indicated as horizontal bars at the top of the plots. Those positions that appeared as buried in most of the species are designed as interior positions (blue circles). The remaining positions are designated as surface positions (red circles). The structural models of cytochrome b (b) and COX I (d) are also depicted in cartoon representation showing the interior (blue) and surface (red) of each protein.