~~There~~In eukaryotes, there are many ~~Intrinsically Disordered~~intrinsically disordered (ID) proteins ~~in eukaryotes,~~ but there are not many such proteins in prokaryotes. Mitochondria~~, which is~~ are cellular ~~organeles~~organelles that ~~descended~~were derived from Rickettsia-like alpha-~~proteobacterial, can be found at~~proteobacteria, and thus represent the intersection between prokaryotes and eukaryotes. It has been reported that ID proteins are rare in the mitochondria, ~~similarly~~similar to ~~in~~ bacteria. We investigated 187 human mitochondrial proteins, extracting information about the ID regions of all human proteins. Based on a search ~~against~~involving comparison with all alpha-proteobacterial proteins, 2 types of mitochondrial proteins were identified. ~~Proteins type~~Type B ~~descended~~proteins were derived from bacterial ~~ancestor~~ancestors, whereas ~~proteins~~ type E ~~was~~ proteins were added ~~more recently~~ to mitochondria ~~through~~more recently from the host ~~cell,~~cells during early ~~eukaryotes~~eukaryote evolution. ~~Average~~The average ID ratio of type B~~/~~ and type E proteins was 12.6~~-~~% and 18.5~~ %. Further, the~~ %, respectively. The 187 proteins were also classified into 4 subgroups based on ~~the following~~ mitochondrial sub-compartments~~: Matrix, Intermembran~~ (matrix, intermembrane space, ~~Inner membran, Outer membran.~~inner membrane, and outer membrane). The ID ratios in these different locations indicated that the frequency of ID proteins in mitochondria may be ascribable to the ~~protein's~~

evolutionary origin~~, not to difference~~ of the proteins rather than differences within the functional environment.