



**SUPPLEMENTARY FIG. S4.** Alignment of the Bola protein family among the eukaryotes. The arrows, from left to right point to: a Cysteine (Cys-97) that is conserved among Bola2 and Bola3 and that has been implicated in the binding of a FeS cluster, albeit not directly (7), a histidine that is conserved among Bola1 (His-67) and that is located in the same loop of the 3D structure (data not shown) as the conserved cysteine in Bola2/3, and a histidine that corresponds to His-103 in Fra2 that is a Fe/S cluster ligand in the Fra2-Grx3 complex (7) and that is conserved among all the representatives of Bola among the eukaryotes. The Genbank identifiers of the sequences are, from top to bottom: 219124768, 15237987, 159472929, 7705638, 57525877, 196004562, 17541430, 224000337, 224013686, 219124768, 219116002, 66821713, 66803973, 146182568, 146086183, 159466014, 159489852, 58260248, 12621476, 19112580, 237834549, 15236742, 51969538, 290995502, 290977031, 120659856, 63102519, 196010595, 58269592, 19115194, 259146294, 71990814, 66359474, 221488823, 124506235, 18416103, 66804285, 66821429, 224008478, 219129077, 290997011, 25145455, 159472308, 6319270, 58264168, 19075579, 189530718, 78486586, 196012604, 118367989, 154338503, 300176421, 1773119, 341919294. The alignment is based on an initial alignment of Bola family members of 127 sequenced eukaryotic genera (5 anaerobic and 122 aerobic) available in the NCBI database in August 2011. From this alignment, species representative of the major eukaryotic taxa were chosen.