	JUPPLEMENTARY LABLE J	I. L'RUPUSED SYSTEMATIC INOMENCLATURE FUR THE C	I DODI FROTEIN FAMILY	
Species	Systematic name	Names used so far	Protein ID	References
Arabidopsis thaliana	At_CYB561B1	CYBASC1, TCytb, TCB, CLb561A, Acytb ₅₆₁ -A, b561A.tha5	Q8L856	(2), (4), (5), (7), (17), (24)
	At_CYB561B2	CYBASC2, Acytb ₅₆₁ -B, b561A.tha4	Q9SWS1	(5), (24)
Bos taurus	Bt_CYB561A1	cytochrome b ₅₆₁ , Cyt b561, b561Bovine	P10897	(9), (19), (21), (23), (24)
Citrullus lanatus	Cl_CYB561B1 Cl_CYB561B2	CLb561A CLb561B	Q3LGX5 Q3LGX4	(14) (14)
Drosophila melanogaster	Dm_CYB561A1	nemy, b561D.me1	Q95T77	(8), (24)
Homo sapiens	Hs_CYB561A2 Hs_CYB561D1 Uz_CVB561D1	Cybrd1, Dcytbhuman CYB561D1 10116 CVD561D0 Terlinger	Q53TN4 Q8N8Q1 Q41620	(10), (11), (15), (24) (22) (22)
		101F6, CYB361D2, 13Fnuman	O14004	(10), (10), (24)
Mus musculus	Mm_CYB561A1 Mm_CYB561A2	CGCytb, CGCB, <i>b</i> 561mouse Dcytb, DCytb, DCB, Cybrd1, Dcytbmouse	Q60720 Q925G2	$(3), (24) \\ (12), (20), (24) \\ (21), (20), (24) \\ (21), (21), (22) \\ (21), (22), (22), (24) \\ (21), (21), (22), (24) \\ (21),$
	Mm_CYB561A3 Mm_CYB561D1	LCytb, 'ubiquitous', LCB, <i>b</i> 561mouse2 Cyb561d1	Q6P1H1 NP_001074789	(20), (24), (25) (22)
	Mm_CYB561D2	mouse 101F6, Cyb561d2, TSP10, TSCytb, TSCB, TSFmouse	Q9WUE3	(1), (4), (24)
Schistosoma japonicum	Sj_CYB561A1	SjCytb561, b561Schisto	Q5D8X4	(6), (24)
Zea mays	Zm_CYB561B1	Zmb561, b561Z.mays	Q6I681	(13), (24)

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The systematic name suggested for the CYB561 protein family members, is based on (i) the HUGO Gene Nomenclature Committee adopted name for the cytochrome *b* super family, 'CYB'; (ii) the cytochrome *b*561-specific extension: '561'; (iii) a letter (A–E) referring to the evolutionary clusters identified by Tsubaki *et al.* (24)*; and (iv) a sequential number (1, 2,...) for each CYB561 isoform within each species. Note that by lack of information on subcellular localization and physiological function for several CYB561 isoforms, identical numbers *(e.g., Mm*, CYB561A1 and isoform within each species. Note that by lack of information on subcellular localization and physiological function for several CYB561 isoforms, identical numbers *(e.g., Mm*, CYB561A1 and Si_CYB561A1) not necessarily mean identical functions or localizations across species. In this article, we refer to the proposed systematic name of the proteins, preceded, for clarity, by the common name that refers to the protein localization (*i.e.*, 'CG' for chromaffin granule; 'D' for duodenum; 'L' for lysosome; 'T' for tonoplast) or function (*i.e.*, TS' for tumor suppression). *Clusters D and E from [24] were exchanged to accommodate for already published names (CYB561D1) and CYB561D2).

Supplementary Data

Supplementary References

- 1. Bérczi A, Desmet F, Van Doorslaer S, and Asard H. Spectral characterization of the recombinant mouse tumor suppressor 101F6 protein. *Eur Biophys J* 39: 1129–1142, 2010.
- 2. Bérczi A, Su D, and Asard H. An Arabidopsis cytochrome b_{561} with trans-membrane ferrireductase capability. *FEBS Lett* 581: 1505–1508, 2007.
- Bérczi A, Su D, Lakshminarasimhan M, Vargas A, and Asard H. Heterologous expression and site-directed mutagenesis of an ascorbate-reducible cytochrome *b*561. *Arch Biochem Biophys* 443: 82–92, 2005.
- Bérczi A, Zimanyi L, and Asard H. Dihydrolipoic acid reduces cytochrome b561 proteins. *Eur Biophys J*, 2012. [Epub ahead of print]; DOI 10.1007/s00249-012–0812-x
- 5. Cenacchi L, Busch M, Schleidt PG, Muller FG, Stumpp TV, Mantele W, Trost P, and Lancaster CR. Heterologous production and characterisation of two distinct dihaemcontaining membrane integral cytochrome $b_{(561)}$ enzymes from *Arabidopsis thaliana* in *Pichia pastoris* and *Escherichia coli* cells. *Biochim Biophys Acta* 1818: 679–688, 2012.
- Glanfield A, McManus DP, Smyth DJ, Lovas EM, Loukas A, Gobert GN, and Jones MK. A cytochrome b561 with ferric reductase activity from the parasitic blood fluke, Schistosoma japonicum. *PLoS Negl Trop Dis* 4: e884, 2010.
- Griesen D, Su D, Bérczi A, and Asard H. Localization of an ascorbate-reducible cytochrome b561 in the plant tonoplast. *Plant Physiol* 134: 726–734, 2004.
- Iliadi KG, Avivi A, Iliadi NN, Knight D, Korol AB, Nevo E, Taylor P, Moran MF, Kamyshev NG, and Boulianne GL. *nemy* encodes a cytochrome b561 that is required for *Drosophila* learning and memory. *Proc Natl Acad Sci U S A* 105: 19986–19991, 2008.
- Liu W, Kamensky Y, Kakkar R, Foley E, Kulmacz RJ, and Palmer G. Purification and characterization of bovine adrenal cytochrome b561 expressed in insect and yeast cell systems. *Protein Expr Purif* 40: 429–439, 2005.
- Liu W, da Silva GF, Wu G, Palmer G, Tsai AL, and Kulmacz RJ. Functional and structural roles of residues in the third extramembrane segment of adrenal cytochrome b561. *Biochemistry* 50: 3149–3160, 2011.
- Ludwiczek S, Rosell FI, Ludwiczek ML, and Mauk AG. Recombinant expression and initial characterization of the putative human enteric ferric reductase Dcytb. *Biochemistry* 47: 753–761, 2008.
- 12. McKie AT, Barrow D, Latunde-Dada GO, Rolfs A, Sager G, Mudaly E, Mudaly M, Richardson C, Barlow D, Bomford A, Peters TJ, Raja KB, Shirali S, Hediger MA, Farzaneh F, and Simpson RJ. An iron-regulated ferric reductase associated with the absorption of dietary iron. *Science* 291: 1755–1759, 2001.
- Nakanishi N, Rahman MM, Sakamoto Y, Takigami T, Kobayashi K, Hori H, Hase T, Park SY, and Tsubaki M. Importance of the conserved lysine 83 residue of *Zea mays*

cytochrome $b_{(561)}$ for ascorbate-specific transmembrane electron transfer as revealed by site-directed mutagenesis studies. *Biochemistry* 48: 10665–10678, 2009.

- Nanasato Y, Akashi K, and Yokota A. Co-expression of cytochrome b₅₆₁ and ascorbate oxidase in leaves of wild watermelon under drought and high light conditions. *Plant Cell Physiol* 46: 1515–1524, 2005.
- Oakhill JS, Marritt SJ, Gareta EG, Cammack R, and McKie AT. Functional characterization of human duodenal cytochrome b (Cybrd1): Redox properties in relation to iron and ascorbate metabolism. *Biochim Biophys Acta* 1777: 260–268, 2008.
- 16. Ohtani S, Iwamaru A, Deng W, Ueda K, Wu G, Jayachandran G, Kondo S, Atkinson EN, Minna JD, Roth JA, and Ji L. Tumor suppressor 101F6 and ascorbate synergistically and selectively inhibit non-small cell lung cancer growth by caspase-independent apoptosis and autophagy. *Cancer Res* 67: 6293–6303, 2007.
- 17. Preger V, Scagliarini S, Pupillo P, and Trost P. Identification of an ascorbate-dependent cytochrome *b* of the tonoplast membrane sharing biochemical features with members of the cytochrome *b*561 family. *Planta* 220: 365–375, 2005.
- 18. Recuenco MC, Fujito M, Rahman MM, Sakamoto Y, Takeuchi F, and Tsubaki M. Functional expression and characterization of human 101F6 protein, a homologue of cytochrome b_{561} and a candidate tumor suppressor gene product. *Biofactors* 34: 219–230, 2008.
- Silsand T and Flatmark T. Purification of cytochrome b-561. An integral heme protein of the adrenal chromaffin granule membrane. *Biochim Biophys Acta* 359: 257–266, 1974.
- Su D and Asard H. Three mammalian cytochromes b₅₆₁ are ascorbate-dependent ferrireductases. *FEBS J* 273: 3722–3734, 2006.
- 21. Takeuchi F, Hori H, Obayashi E, Shiro Y, and Tsubaki M. Properties of two distinct heme centers of cytochrome b_{561} from bovine chromaffin vesicles studied by EPR, resonance Raman, and ascorbate reduction assay. *J Biochem* 135: 53–64, 2004.
- 22. The UniProt Consortium. Reorganizing the protein space at the Universal Protein Resource (UniProt). *Nucl Acid Res* 40: D71–D75, 2012.
- 23. Tsubaki M, Nakayama M, Okuyama E, Ichikawa Y, and Hori H. Existence of two heme B centers in cytochrome b_{561} from bovine adrenal chromaffin vesicles as revealed by a new purification procedure and EPR spectroscopy. *J Biol Chem* 272: 23206–23210, 1997.
- 24. Tsubaki M, Takeuchi F, and Nakanishi N. Cytochrome b_{561} protein family: expanding roles and versatile transmembrane electron transfer abilities as predicted by a new classification system and protein sequence motif analyses. *Biochim Biophys Acta* 1753: 174–190, 2005.
- Zhang DL, Su D, Bérczi A, Vargas A, and Asard H. An ascorbate-reducible cytochrome b561 is localized in macrophage lysosomes. *Biochim Biophys Acta* 1760: 1903–1913, 2006.