

Online Supporting Information S2d. A demonstration to show the power of **iLoc-Hum** in identifying the multiple locations of proteins via a head-to-head comparison between the results predicted by **iLoc-Hum** and those by **MultiLoc2**, the updated version of **MultiLoc** (Hoglund et al., Bioinformatics 2006, 22, 1158-1165), on the 30 multiple-location proteins in the [Online Supporting Information S2c](#). For facilitating comparison, the corresponding experimental subcellular locations as annotated in Swiss-Prot databank (Release 2011_06 of 31-May-11) are also given. As shown from the results below, of the 30 proteins, 26 were perfectly predicted by **iLoc-Hum** for their multiple-location sites without any false positive and false negative, while 4 were partially correctly predicted. This kind of capacity of **iLoc-Hum** in dealing with multiple-location proteins is beyond the reach of **MultiLoc**.

Protein accession number	iLoc-Hum	MultiLoc2	Experimental result annotated in Swiss-Prot database
A0FI79	Cytoplasmic; Golgi apparatus	Cytoplasmic	Cytoplasmic; Golgi apparatus
A0JPI4	Cytoplasmic; Golgi apparatus	Cytoplasmic	Cytoplasmic; Golgi apparatus
A1CJW1	Endoplasmic reticulum; Golgi apparatus	Peroxisomal	Cytoplasmic; Endoplasmic reticulum; Golgi apparatus
A1D7K7	Endoplasmic reticulum; Golgi apparatus	Peroxisomal	Cytoplasmic; Endoplasmic reticulum; Golgi apparatus
A5JYQ9	Endoplasmic reticulum; Golgi apparatus	Peroxisomal	Cytoplasmic; Endoplasmic reticulum; Golgi apparatus
A6H7F6	Cytoplasmic; Golgi apparatus	Cytoplasmic	Cytoplasmic; Golgi apparatus
A7YY49	Endoplasmic reticulum; Golgi apparatus	Cytoplasmic	Endoplasmic reticulum; Golgi apparatus
O00628	Cytoplasmic; Peroxisomal;	Mitochondrion	Cytoplasmic; Peroxisomal
O08547	Endoplasmic reticulum; Golgi apparatus	Cytoplasmic	Endoplasmic reticulum; Golgi apparatus
O08595	Endoplasmic reticulum; Golgi apparatus;	Cytoplasmic	Endoplasmic reticulum; Golgi apparatus
O09174	Mitochondrion; Peroxisomal	Peroxisomal	Mitochondrion; Peroxisomal
O13637	Endoplasmic reticulum; Golgi apparatus	Cytoplasmic	Cytoplasmic; Endoplasmic reticulum
O13825	Endoplasmic reticulum; Golgi apparatus;	Extracellular	Endoplasmic reticulum; Golgi apparatus
O13932	Endoplasmic reticulum; Golgi apparatus	Cytoplasmic	Endoplasmic reticulum; Golgi apparatus

O13946	Endoplasmic reticulum; Golgi apparatus	Endoplasmic reticulum	Endoplasmic reticulum; Golgi apparatus
O14001	Endoplasmic reticulum; Golgi apparatus	Endoplasmic reticulum	Endoplasmic reticulum; Golgi apparatus
O14159	Endoplasmic reticulum; Golgi apparatus	Cytoplasmic	Endoplasmic reticulum; Golgi apparatus
O14324	Endoplasmic reticulum; Golgi apparatus	Endoplasmic reticulum	Endoplasmic reticulum; Golgi apparatus
O15027	Endoplasmic reticulum; Golgi apparatus	Cytoplasmic	Endoplasmic reticulum; Golgi apparatus
O43933	Cytoplasmic; Peroxisomal	Peroxisomal	Cytoplasmic; Peroxisomal
O74941	Cytoplasmic; Peroxisomal	Peroxisomal	Cytoplasmic; Peroxisomal
O75443	Extracellular; Plasma membrane	Lysosome	Extracellular; Plasma membrane
O75874	Cytoplasmic; Peroxisomal	Peroxisomal	Cytoplasmic; Peroxisomal
P21549	Mitochondrion; Peroxisomal	Peroxisomal	Mitochondrion; Peroxisomal
P24004	Cytoplasmic; Peroxisomal	Cytoplasmic	Cytoplasmic; Peroxisomal
P70473	Mitochondrion; Peroxisomal	Peroxisomal	Mitochondrion; Peroxisomal
Q03426	Cytoplasmic; Peroxisomal	Cytoplasmic	Cytoplasmic; Peroxisomal
Q8R537	Cytoplasmic; Peroxisomal	Mitochondrion	Cytoplasmic; Peroxisomal
Q9UHK6	Mitochondrion; Peroxisomal	Peroxisomal	Mitochondrion; Peroxisomal
Q9Y3D6	Mitochondrion; Peroxisomal	Cytoplasmic	Mitochondrion; Peroxisomal