Additional file 2 – Sequence sources of known mouse PTS2-targeted proteins and their orthologs

Gene	Species	GenBank accession	PTS2	Reference
Phyh	Mouse	**AF023463**, AK168648, AF023463, D88670, BC002018	RLQVLLGHL	[1]
Phyp	Rat	**AF121345**		
PHYH	Human	**BC029512** ,AF023462, AF112977, CR542055	RLQIVLGHL	
Pex11c	Mouse	**AK007582**	RLLVVSAQF	[2,3]
PEX11G	Human	**BC008780**	RLLVVSTQL	
Mvk	Mouse	**BC005606**, AK149630**,** AF137598	KVILHGEHA	[4,5,6]
Mvk	Rat	**M29472**		
MVK	Human	**M88468**		
Acaa1b	Mouse	**AY273812**	RLQVVLGHL	[7,8]
Acaa1b	Rat	**J02749**		
Acaa1a	Mouse	**AK143187**, AY273811**,** BC012400		[7,8]
ACAA1	Human	**BC000635**, X14813, BC014474, X12966, BC011977		
Acaa1	Rat	**M32801**, BC089821		
Agps	Mouse	**BC06308**, AK031049	RLRVLSGHL	[9]
Agps	Rat	**AF121052**		
Agps	Guinea pig	**Y08826**		
AGPS	Human	**AY544121**, BC141820**,** Y09443		

Phyh: phytanoyl-CoA hydroxylase; *Pex11c*: peroxisomal biogenesis factor 11c; *PEX11G*: peroxisomal biogenesis factor 11 gamma; *Mvk*: mevalonate kinase; *Acaa1b*: acetyl-Coenzyme A acyltransferase 1B (thiolase B); *Acaa1*: acetyl-Coenzyme A acyltransferase 1A (thiolase A); *Agps*: alkylglycerone phosphate synthase.

Thirty-six sequences are considered to represent known PTS2-targeted proteins. 17 sequences (accession in bold) are encoded by six mouse genes five human, five rat and one guinea pig ortholog. These sequences were also used to construct the PTS2 HMM profile (see Additional File 7). The remaining 19 sequences are either redundant or variants (e.g., substitution of one amino acid). Known mouse PTS2-targeted proteins are encoded by *Phyh*, *Pex11c*, *Acaa1*, *Acaa1b*, and *Agps*. References 1-3 and 7-9 support the PTS2-dependent import of proteins encoded by the above

genes into the peroxisomes. Here, Mvk was accepted as a PTS2-targeted protein, although reports differ between cytoplasmic and peroxisomal localisation depending on the cell line and methods used (see also references 4-6). Orthologous sequences of mouse Phyh and Mvk were available found for rat and human. *PEX11G* is the human ortholog of mouse *Pex11c*. The sequence of a rat ortholog was not available at the time of analysis. Acaa1 orthologs were identified for rat and human. Acaa1b orthologs were only found in rat. Rodents possess three thiolases: Acaa1a, Acaa1b and Scp2. Acaa1a and Acaa1b are targeted by PTS2. Scp2 is targeted by PTS1. Human and other mammals have only one thiolase (Acaa1). Orthologs of mouse Agps were present in human, rat and guinea pig.

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