§S8. Peroxisomes

Table §S8.1 Enzymes involved in fatty acid beta-oxidation in *Aspergillus* species[a]

PUTATIVE FUNCTION	*A. nidulans*	*A. fumigatus*	*A. oryzae*
Mitochondrial[b]			
acyl-CoA dehydrogenase	AN0824.2	70.m15426	20092.m00067
enoyl-CoA hydratase	AN5916.2[d]	72.m19960	20177.m00746
hydroxyacyl-CoA dehydrogenase	AN7008.2	89.m02079	20119.m00087
ketoacyl-CoA thiolase	AN4179.2[d]	69.m15561	20170.m00460
Lon protease[e]	AN6193.2	72.m19291	20145.m00253
Peroxisomal[c]			
acyl-CoA oxidase	AN6765.2 AN6752.2	65.m07221 65.m07222	20158.m00219 20176.m00510 20081.m00050
acyl-CoA dehydrogenase	AN2264.2 AN6595.2	71.m15905	20132.m00109
multifunctional enzyme	AN7111.2[d]	89.m02027	20153.m00196
ketoacyl-CoA thiolase	AN5646.2 AN1050.2 AN5878.2	58.m07559 70.m15207 72.m19253	20138.m00141 20149.m00282 20082.m00061
Lon protease[e]	AN0122.2	71.m15403	20148.m00233

Notes

[a] The genes shown represent a minimal set. There are additional probable orthologs for most classes of enzyme. Of particular interest is the finding of a large number of enoyl-CoA hydratases (PFAM00378-15 in *A.oryzae,* 10 in *A.fumigatus* and 12 in *A.nidulans* with either mitochondrial or peroxisomal locations predicted) and hydroxyacyl-CoA dehydrogenases (PFAM02737

and 00725 – 5 in *A.oryzae,*3 in *A,fumigatus* and 4 in *A.nidulans* none of which have predicted peroxisomal targetting.

[b]Assignment of proteins to mitochondria was based on TargetP (http://www.cbs.dtu.dk/services/TargetP/ Olof Emanuelsson, Henrik Nielsen, Søren Brunak, and Gunnar von Heijne: "Predicting subcellular localization of proteins based on their N-terminal amino acid sequence", J. Mol. Biol. 300, 1005-1016 (2000) and PSORT II (http://psort.nibb.ac.jp/).

[c] Peroxisomal location was based on the presence of a C-terminal PTS-1 consensus of the form(S/A R/K L/M) or a PTS-2 consensensus (R/K L/V/I X5 H/Q L/A/F/I). The PTS-2 consensus was only found in the ketoacyl-CoA thiolases.

[d] Inactivation of AN5916.2 and AN7111.2 has been shown to affect fatty acid utilisation (Maggio- Hall and Keller (ref 77 in previous version) and a mutation in AN4179.2 results in loss of growth on short chain fatty acids (M.J.Hynes, unpublished).

[e]*Saccharomyces cerevisiae* contains a mitochondrial Lon protease (Pim1/Lon1) but lacks a peroxisomal enzyme.