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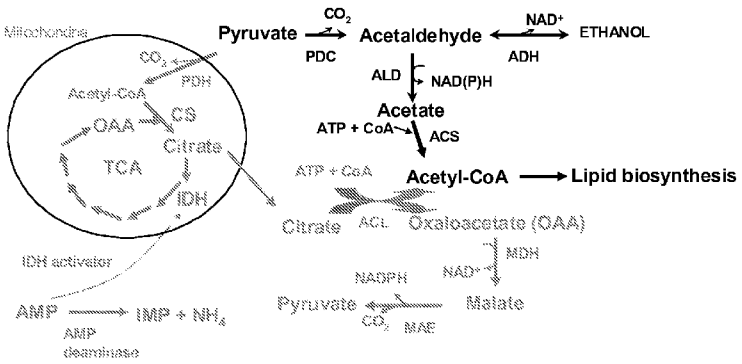
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(54) **Title**: GENETICALLY MODIFIED FUNGI AND THEIR USE IN LIPID PRODUCTION

**Figure 1**




(57) **Abstract**: The invention refers to fungal cells, and especially to oleaginous fungal cells that have been genetically modified to produce enzymes of the pyruvate dehydrogenase bypass route to enhance their lipid production. Especially the cells are modified to over-express genes encoding pyruvate decarboxylase (PDC), acetaldehyde dehydrogenase (ALD) and/or acetyl-CoA synthetase (ACS), optionally together with a gene encoding diacylglycerol acyltransferase (DAT), or to express genes encoding PDC together with ALD and/or ACS. Methods of producing lipids, biofuels and lubricants using the modified fungi are also disclosed as well as expression cassettes useful therein.A new enzyme having phosholipid: diacylglycerol acyltransferase (PDAT)activity and a polynucleotide encoding it are also disclosed, which are useful in the lipid production.A recombinant *Cryptococcus* cell and its construction is described.

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