



## Higher expression of acyl-CoA dehydrogenase genes in adipose tissues of obese compared to lean pig breeds

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**ABSTRACT.** The balance between biosynthesis and oxidation of fatty acids determines adipose deposition in mammals. Obese and lean pigs show obvious differences in total adipose mass and therefore offer an attractive model for comparative studies. We found that obese Rongchang pigs, when compared with lean Landrace pigs, exhibited significantly higher mRNA levels for five genes encoding acyl-CoA dehydrogenases involved in mitochondrial fatty-acid  $\beta$ -oxidation in eight different adipose tissues. These changes in gene expression were positively correlated with adipocyte volume in the eight adipose tissues. Based on these results, we hypothesize that acyl-CoA dehydrogenase genes participate in the regulation of fat mass in pigs.

**Key words:** Fat deposition; Acyl-CoA dehydrogenases;  
Fatty acid oxidation; Obese and lean pigs