Copyright © 2003 Elsevier Science (USA). All rights reserved.

Stability of diacylglycerol acyltransferase in dehydrated bovine muscle tissue

Phillip W. Huff [a], Fred J. Lozeman [a], E. Chris Kazala [a], Cara Prozniak [a], Jochen Wegner [b], Jingti Deng [a], André Laroche [c], Priya S. Mir [c], Jennifer Aalhus [d] and Randall J. Weselake [, , a]

[a] Department of Chemistry and Biochemistry, University of Lethbridge, Lethbridge, Alberta, Canada T1K 3M4
[b] Research Institute for the Biology of Farm Animals, 18196, Dummerstorf, Germany
[c] Agriculture and Agri-Food Canada, Lethbridge Research Centre, Lethbridge, Alberta, Canada T1J 4B1
[d] Agriculture and Agri-Food Canada, Lacombe Research Centre, Lacombe, Alberta, Canada T4L 1W1

Received 3 January 2003. Available online 15 May 2003.

Abstract

Meaningful estimates of diacylglycerol acyltransferase (EC 2.3.1.20) activity in different tissue samples require effective, unbiased methods of sample storage. Samples of the *pars costalis diaphragmatis* muscle (skirt muscle of the diaphragm) were obtained from 18- to 20-month-old cattle and assayed for microsomal protein content and diacylglycerol acyltransferase activity after having been stored under various conditions as dissected tissue or microsomes prepared from dissected tissue. There was relative enrichment of diacylglycerol acyltransferase specific activity ($p<0.05$) when samples prepared from the *pars costalis diaphragmatis* muscle were dehydrated and stored for 2 weeks, as compared to the control condition (in which the microsome fraction was prepared from fresh *pars costalis diaphragmatis* muscle and assayed immediately). The results suggested that dehydration was an effective method of storage for bovine muscle samples destined for estimation of the microsomal diacylglycerol acyltransferase activity. The dehydration approach for preparing samples for analysis of diacylglycerol acyltransferase activity might also prove useful to investigators who are interested in obtaining reliable estimates of the activity of other enzymes in tissue samples.

Author Keywords: Triacylglycerol biosynthesis; *Bos taurus*; Tissue storage