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Effects of polyclonal antiserum against adipocyte plasma membrane proteins on body composition of passively immunized Sprague-Dawley male rats

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ABSTRACT

The current study was conducted to investigate the effects of administration of antiserum against adipocyte plasma membrane (APM) proteins into rats on body fat mass. Twenty (20) male adult Sprague-Dawley rats were randomly allocated into either control or antiserum treatment group (10 rats/treatment) and immunized with physiological saline (control group) and polyclonal antiserum (treatment group), respectively, raised in sheep against rat APM proteins. Intraperitoneal (i.p.) administration of antiserum significantly ($P=0.0054$ and $P=0.0019$, respectively) reduced subcutaneous (21.9%) and perirenal + mesenteric + epididymic (36.0%) adipose tissue mass in rats of treatment group. Although body weights of antiserum treated rats were decreased during immunization, the rats recovered their body weight after 1 week of treatment. There were no significant changes in the level of blood glucose and in the contents of muscle protein and fat in antiserum treated animals. Current results indicate that polyclonal antibodies against APM proteins could be used to manipulate body fat mass in meat animals as well as laboratory animals. Further studies, however, are necessary for the practical applications of the current results.

	Control	Antiserum treatment	P value
	----- % ¹⁾ -----		
Subcutaneous	3.56 ± 0.178 ²⁾	2.78 ± 0.049	0.0054
Perirenal + mesenteric + epididymic	2.92 ± 0.094	1.87 ± 0.176	0.0019

¹⁾ Values are expressed as a percentage of total body weight

²⁾ Mean ± S.E. (n=10)

