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Minimum blood lactate and muscle protein of rats during swimming exercise  
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Few studies dealing with effort intensity during swimming exercise in rats have been reported in the literature. Recently, with the use of the lactate minimum test (LMT), our group estimated the minimum blood lactate (MBL) of rats during swimming exercises. This information allowed accurate evaluation of the effort intensity developed by rats during swimming exercise. The present study was designed to evaluate the effects of swimming exercise sessions in below, equivalent and above intensities to MBL, on protein metabolism of rats. Adult (90 days) sedentary male Wistar rats were used in the present study. Mean values of MBL, in the present study, were obtained at blood concentration of  $6.7 \pm 0.4$  mmol/L with a load of 5% bw. The animals were sacrificed at rest (R) or immediately after a single swimming session (30 min) supporting loads below (3.5% bw), equivalent (5.0% bw) and high load (6.5% bw) to AT. Blood samples were collected each 5 min of exercise for lactate determination. Soleus muscle protein synthesis (amount of L-[14C] phenyl alanine incorporation to protein) and breakdown (tyrosine release) rates were evaluated. Blood lactate concentrations (mmol/L) stabilized with the below ( $5.4 \pm 0.01$ ) and equivalent ( $6.4 \pm 0.006$ ) to MBL but increased, progressively, with the high load. There were no differences in protein synthesis (pmol/mg.h) among rest values ( $65.2 \pm 3.4$ ) and after-exercise supporting the loads below ( $61.5 \pm 1.3$ ) and the equivalent ( $60.7 \pm 1.7$ ) to MBL but there was a decrease with the high load ( $36.6 \pm 2.0$ ). Protein breakdown rates (pmol/g.h) increase after exercise supporting the loads below ( $227.0 \pm 6.1$ ), equivalent ( $227.9 \pm 6.0$ ) and high ( $363.6 \pm 7.1$ ) to MBL in relation to the rest ( $214.3 \pm 6.0$ ). The results indicate the viability of the application of LMT in studies with rats since it detected alterations imposed by exercise.

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