modestly affected when Put synthesis was inhibited by addition of 1 to 5 mM difluoromethylornithine. Collectively, these findings indicate a novel and important role for Put in promoting growth of porcine placental cells largely via an mTOR signaling pathway, which help to explain beneficial effects of Put supplementation on improving survival and growth of embryos/fetuses in mammals.

Key Words: pigs, growth, nutrition

W32 Dietary arginine supplementation confers immunostimulatory effects on inactivated Pasteurella multocida vaccines immunized mice. W. K. Ren1, Y. L. Yin1,1, L. X. Zhou2, Y. Wang3, and Y. Peng2, 1Institute of Subtropical Agriculture, the Chinese Academy of Sciences, Changsha, Hunan, China, 2Chongqing Key Laboratory of Forage & Herbivore, College of Animal Science and Technology, Southwest University, Chongqing, China.

This study was conducted to test the adjuvant effect of arginine on inactivated vaccines immunized mice. Mice immunized with inactivated Pasteurella multocida (P. multocida) vaccines alone and with dietary 0.2% or 0.5% arginine supplementation showed 100% protection after challenge with P. multocida serotype A (CQ2) at dose of 4.44×105 cfu (2LD50). However, the antibody titers in vaccine-0.2% arginine group were much higher than those in vaccine-oil adjuvant group before challenge, meanwhile immunization with inactivated vaccines and dietary 0.2% arginine supplementation significantly increased the antibody titers at 36 h post infection, compared with the mice immunized with inactivated vaccines alone or with oil adjuvant. Furthermore, immunization with inactivated vaccines and dietary 0.2% arginine supplementation significantly increased the serum Interleukin-1 β and glutathione peroxidase levels in comparison with the vaccine and vaccine-adjuvant groups of mice. Collectively, dietary arginine supplementation performs a significant immunostimulatory effects in inactivated P. multocida vaccines immunized mice, and dietary 0.2–0.5% arginine supplementation was the optimal supplementation dose in mouse model.

Key Words: ketois, β-hydroxybutyric acid, grazing cows

W34 Effects of soy isoflavones on the male reproductive regulation in Huanjiang male pigs. X. Yuan1, L. Li1, J. Fan1,2, B. Zhang1, C. Xiao2, and Y. Yin1, 1Institute of Subtropical Agriculture, the Chinese Academy of Science, Changsha, Hunan, China, 2College of Animal Sciences, Hunan Agricultural University, Changsha, Hunan, China, 3Nutrition Research Division, Food Directorate, Health Products and Food Branch, Health Canada, Ottawa, Canada.

To evaluate the effects of soy isoflavones on male reproductive regulation in Huanjiang male pigs. Fifty male black small-eared pigs were randomly divided into control group (fed a test diet), low, medium and high doses of soy isoflavones group and diethylstilbestrol group. Three different doses of soy isoflavones (125 mg/kg, 250 mg/kg, and 500 mg/kg) and 0.5 mg/ kg diethylstilbestrol were evenly mixed in the feed and fed to pigs for 60 d (The purity of soy isoflavones is 80%). Analysis levels of GnRH, LH, FSH, Tes and E2 by radioimmunoassay; weigh tests and epididymis; the mRNA expression of P450ccc, 3β-HSD and StAR in testicular tissue, which associated with testosterone synthesis, was measured by RT-PCR. In 250 mg/kg soy isoflavones group, testicular index increased by 44.76% than the control group, the difference was significant (P < 0.05); serum testosterone level increased by 51.49% than the control group, the difference was significant (P < 0.05); mRNA expression of StAR was up to 1.43%, a significant difference with control group (P < 0.05). In 500 mg/kg soy isoflavones group, testicular index decreased by 39.92% than the control group, the difference was significant (P < 0.05); serum testosterone level decreased by 53.69% than the control group, the difference was significant (P < 0.05); mRNA expression of StAR 0.49%, a significant difference with 250 mg/kg soy isoflavones group (P < 0.05). Soy isoflavones can affect the male reproductive hormone secretion, the growth and development of testis and epididymis, enzyme activity of testosterone synthesis, and expression of reproductive hormone genes in the brain, and in dosage-dependent ways.

Key Words: soy isoflavones, reproductive hormone, Huanjiang male pigs

W35 Estimate of serum IgG concentration using refractometry with or without caprylic acid fractionation. K. M. Morrill1, A. Lago1, J. Polio1, J. D. Quigley2, and H. D. Tyler2, 1Cornell Cooperative Extension, Westport, NY, 2Iowa State University, Ames, 3APC Inc., Ankeny, IA.

The objective of this study was to develop a rapid, calf-side test to determine serum IgG concentration using a refractometer and caprylic