PE9.28 Comparison of meat protein from different species and muscles on nonheme iron availability 179.00

Anne Dorthe Sørensen (1) dos@life.ku.dk, Gunilla Lindahl(1), Lars Kristensen (3), Anders Hans Karlsson (1), Klaus Bukhave (1)
(1)Faculty of Life Sciences, University of Copenhagen
(2)Danish Meat Association

Meat has been shown to enhance nonheme iron absorption. The unique property of meat is called the meat factor and is yet unidentified. The aims of the present study is to compare and evaluate the effects of five different species and three different pork muscles on in vitro nonheme iron availability as well as their iron reduction capacity in an attempt to categorise these dietary sources as iron enhancing or non-enhancing products. In vitro iron availability is measured as Fe(II)-dialysability by combining in vitro digestion and dialysis (IVPD-dialysis). The IVPD-dialysis is a highly simplified imitation of the conditions present in the duodenum (pepsin digestion) and in the proximal jejunum (pepsin/panceatin digestion). The results show that the major effects on in vitro nonheme iron availability are achieved during duodenal conditions after pepsin digestion in agreement with the major site for nonheme iron absorption in man. Furthermore, this study indicates that the choice of animal meat source as well as the choice of muscle type greatly affects the magnitude of nonheme iron enhancing properties. Pork, beef and lamb all qualified as iron enhancing products by IVPD-dialysis. In addition, the fatty fish, mackerel showed iron enhancing properties in vitro whereas the lean fish, pollack showed no iron enhancing properties