

Public Abstract

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Title:11 Beta- Hydroxysteroid Dehydrogenase Activity in Feline, Equine, and Ossabaw Swine Adipose Tissue

A study was conducted to determine if 11Beta HSD1 activity existed in adipose tissue in a species dependent manner and if so, did the amount of enzymatic activity differ with adipose depot within: feline, equine, or porcine.

Feline: fat samples were collected from 6 cats, each sampled from 5 different adipose depots: subcutaneous midline (SQM), subcutaneous inguinal (SQI), omental (OM), falciform (FAL), and retro-peritoneal (RP). Immunohistochemical analysis revealed the presence of 11βHSD1 in each of the adipose depots examined. Level of 11Beta HSD1 activity differed with adipose depot and cat tested (P less than 0.05): SQM greater than SQI, RP, or OM. Morphometric analysis of each adipose depot also revealed that adipocyte diameters differed (P < 0.05) with adipose depot and cat. SQI Adipocyte diameters for SQI > FAL or OM, while RP > FAL, OM, or SQM. Regardless, adipocyte volume did not correlate with 11 Beta HSD1 enzymatic activity.

Equine: fat samples were collected from abdominal and subcutaneous adipose depots from each of 23 horses. Immunohistochemical analysis confirmed the presence of 11 Beta-HSD1 in equine, but activity level did not differ between subcutaneous and adipose tissue depots, nor did enzyme activity differ with body condition score of the horse.

Porcine: fat samples were collected from abdominal and subcutaneous adipose depots from 8 Ossabaw pigs. Immunohistochemical analysis confirmed the presence of 11 Beta-HSD1 in porcine, but the level of activity did not differ between subcutaneous vs. adipose tissue depots.