

# Seasonality of Leptin Levels in the BAT of the Common Shrew (*Sorex araneus*)

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Leptin concentrations in the interscapular brown adipose tissue (IBAT) of the common shrew (*Sorex araneus*) were measured in different seasons. The leptin concentrations in IBAT were much higher than in the liver, where leptin is supposed to be of blood origin. In the heart muscle no detectable amount of leptin was found. There were clear seasonal variations in the leptin concentrations in IBAT. Leptin levels in IBAT were the lowest in November at the beginning of the winter. The concentrations increased, however, strongly after the onset of the permanent snow cover, and the highest concentrations were measured in December-January, when the weight of the animals was very low. In April-May, at the time when shrews attain sexual maturity, leptin concentrations in IBAT were lower than in the mid-winter, but significantly higher than in November. In overwintered adults the leptin concentrations were at the same level as in nonwintered subadults. Leptin originating from BAT may inform the central nervous system about the amount of nonshivering thermogenesis as well as the amount of feeding necessary for survival in the winter months.