Zoophysiology Seminar at Aarhus University

Hydrogen sulfide signaling during hibernating: The thirteen-lined ground squirrel as a case study

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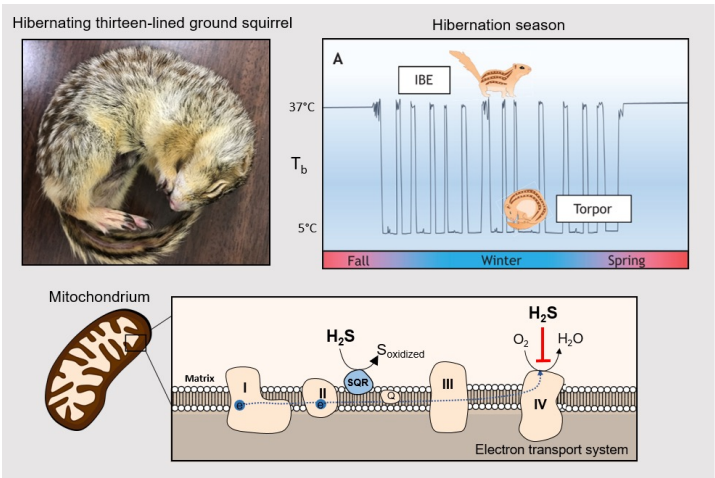
During winter, hibernating mammals may suppress their basal metabolic rate by up to 95% in a state of torpor to reduce energy expenditure. The mechanisms underlying the dramatic metabolic suppression of torpor are complex and not fully understood. However, it is well established that mitochondrial function parallels the whole-animal suppression.

The gasotransmitter hydrogen sulfide (H_2S) is a potent *in vitro* inhibitor of mitochondrial cytochrome *c* oxidase and increasing evidence points to a potential key role for H_2S in the suppression of mitochondrial respiration during torpor.
This talk will explore the mechanism of H_2S signaling during torpor, focusing on a recent study showing how H_2S suppresses mitochondrial respiration in torpid thirteen-lined ground squirrels. Interestingly, H_2S degradation catalyzed by the mitochondrial sulfide:quinone oxidoreductase (SQR) appears important in controlling H_2S availability for inhibiting respiration.



Friday, March 18th at 13.00
Zoophysiology Seminar Room (1131-127)