

## 4. 形態・生理

データ閲覧・コメント入力可能期間：2021年3月28日0時～4月3日24時（予定）

### [P4-07] Effects of starvation-induced negative energy balance (NEB) on endoplasmic reticulum (ER) stress in the liver of dry cows

○MD AMINUL ISLAM<sup>1</sup>、安達 柊也<sup>1</sup>、椎葉 湧一郎<sup>1</sup>、竹田 謙一<sup>1</sup>、芳賀 聡<sup>2</sup>、米倉 真一<sup>1</sup> (1.信州大農、2.農研機構畜産研究部門)

**Objective:** To find out the effect of starvation-induced NEB on ER stress in the liver of dry cows. **Methods:** Blood sample and liver tissue were collected from 6 non-lactating cows before and after starvation for 48 h. The blood NEFA, BHB and glucose level were analyzed. RNA and protein were extracted from liver biopsy tissue. **Results:** Starvation for 48 h increased blood BHB and NEFA levels whereas decreased glucose level. Among the unfolded protein response related gene, XBP1s expression in liver was increased after a 48 h starvation but no difference found in ATF4 and CHOP. The protein level of p-IRE1  $\alpha$  (an upstream of XBP1) was also increased. The mRNA levels of PPAR $\alpha$  and its target gene for ketogenesis, ACOX1 and HMGCS2, were increased after a 48 h starvation but no change noted in PPAR $\gamma$ , a regulator of lipogenesis and other lipogenic gene SREBP1 and FASN. Therefore, starvation-induced NEB promotes the adaptive response in liver by activating the IRE1 $\alpha$ -XBP1 pathway.