

## 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）

### [P4-05]IGFI-induced UPR component gene *XBP1s* regulates the endoplasmic reticulum biogenesis of bovine mammary epithelial cell

○Mst Mamuna Sharmin<sup>1</sup>、林 聡子<sup>1</sup>、芳賀 聡<sup>2</sup>、米倉 真一<sup>1</sup> (1.信州大農、2.農研機構畜産部門)

**Objective:** To find out the role of IGFI induced *XBP1s* expression on endoplasmic reticulum (ER) biogenesis of bovine mammary epithelial cell. **Methods:** In vitro, MAC-T cells were treated with IGFI with or without 4  $\mu$  8c (IRE1 inhibitor) to quantify the *XBP1s* and ER biogenesis related gene (EBG); *CHKA*, *PCYT1A* and *SURF4* expressions and fluorescence intensity of ER tracker. In vivo, mammary *XBP1s*, EBG and *IGFIR* expressions, and plasma IGFI concentration were measured using mammary gland biopsy and blood samples respectively collected during late gestation to early lactation in dairy cows. **Results:** IGFI enhanced *XBP1s* and EBG expression, and fluorescence intensity of ER tracker, which were reduced by 4  $\mu$  8c. Protein expressions of IRE1  $\alpha$  and p-IRE1  $\alpha$  (upstream of *XBP1s*) were increased by IGFI treated cell. In early lactation, *XBP1s*, *CHKA*, *PCYT1A* and *SURF4* and *IGFIR* expression in mammary biopsy specimens and plasma IGFI concentration were higher compared with those during the precalving. Therefore, we suggest that IGFI mediated *XBP1s* expression contributes to ER expansion in the mammary gland during lactation.