

ポスター | 1-17 心血管発生・基礎研究

## ポスター

### 心血管発生・基礎研究③

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#### [II-P-132]シクロオキシゲナーゼ阻害薬は鳥類動脈管を収縮させる

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Keywords: ductus arteriosus, prostaglandin, indomethacin

Background: Ductus arteriosus (DA) is an essential fetal artery that connects the main pulmonary artery and the descending aorta. Decreases of circulating prostaglandin  $E_2$  ( $PGE_2$ ) transferred from its placenta close mammalian DA right after birth. Avian DA also closes after birth although avian has no placenta that is a source of  $PGE_2$  in rodent and mammalian. Previous research demonstrated that  $PGE_2$  signal pathway is not involved in constriction of isolated chicken DA. However, *in vivo* effects of  $PGE_2$  in avian DA is not fully clarified. Aim: The aim of this study is to elucidate effects of  $PGE_2$  in chicken DA closure. Method and results: First, we measured expressions of  $PGE_2$  in chicken at day 19 embryo by enzyme immunoassay. Blood concentration of  $PGE_2$  in chicken was significantly higher than that of rat at termed embryo. And,  $PGE_2$  in the chicken DA tissues was higher expressed than that of the chicken aorta tissues. These data suggested that  $PGE_2$  works on fetal chicken DA. Next, we performed a rapid whole-body freezing method to evaluate DA closure *in vivo*. We measured internal diameter of DA and the aorta at 4hrs after *in ovo* injection of indomethacin. Indomethacin decreased the internal diameter ratio of DA and the aorta at day 19 embryo *in vivo*. These data suggested that  $PGE_2$  is an important factor in avian DA closure although avian has no placenta that is a source of  $PGE_2$ . Conclusion: Inhibition of cyclooxygenase contracts chicken DA. Prostaglandin  $E_2$  signal may play an important role in an acute response of chicken DA closure.