

Cystic fibrosis-related diabetes (CFRD) is the most significant co-morbidity of CF, impacting >50% of adult patients. Studies in young children with CF indicate that perinatal defects in islet function is an early clinical feature of CF, but the cause of this dysfunction remains controversial. To begin to understand the potential origins of CFRD, it would be optimal to model CFRD in an animal model; however, CFRD is not well-modeled in mice. Alternatively, CFRD occurs spontaneously in the ferret model of CF, suggesting this would be a useful model to characterize whether there is a developmental origin of pancreas dysfunction in patients with CF. Because the development of the fetal ferret pancreas has not yet been characterized, the purpose of this project is to characterize wild type ferret pancreas development as a baseline for future comparison with a CF ferret model. Immunofluorescent staining was employed to characterize key markers of development and islet hormone expression patterns in fetal ferret tissues. In this study, we demonstrate that WT ferret and human islet formation appear similar, and both species diverge from mouse pancreatic morphology as development progresses. Future studies are underway to determine whether CF ferrets display altered pancreatic islet development and hormone expression.