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Postnatal changes and effects of glucocorticoid on MUC5AC mRNA expression in the rat stomach.

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Mucus is an important factor in gastric mucosal protection against acid, pepsin and various irritants such as alcohol and nonsteroidal anti-inflammatory drugs. MUC5AC is a gel-forming mucin secreted from gastric surface mucous cells. However, little is known about expression of the MUC5AC gene. We examined developmental changes in rat MUC5AC mRNA expression and the effect of glucocorticoid on MUC5AC mRNA expression in infant rat gastric mucosa. Expression levels of MUC5AC mRNA in the stomach of 0 to 30-d-old and 8-week-old (adult) rats were evaluated by reverse transcription polymerase chain reaction (RT-PCR) and by in situ hybridization. We also examined pepsinogen C (PgC) and F (foetal type) (PgF) mRNA expression by RT-PCR. The expression of MUC5AC mRNA increased from 10 d of age, which was about one week earlier than that of PgC mRNA. The expression of PgF mRNA decreased as that of PgC mRNA increased. The injection of hydrocortisone induced PgC mRNA expression in the infant rat stomach, whereas MUC5AC and PgF mRNA expression decreased. These results suggest that developmental changes of MUC5AC mRNA expression differ from those of Pgs, and are not induced by glucocorticoid.