

Abstract (บทคัดย่อ)

Studies that have used serum 3-bromotyrosine (3-BrY) to investigate eosinophil activation in dogs have found elevated 3-BrY levels in clinical patients with chronic enteropathy (CE). To our knowledge, a method to measure 3-BrY concentrations in feces has not been reported. We developed and analytically validated an electron ionization gas chromatography–mass spectrometry method to measure fecal 3-BrY concentrations in dogs. The mean and maximum fecal 3-BrY concentrations in healthy dogs ($n = 40$) and dogs with CE ($n = 40$) over 3 consecutive days were compared. Analytical validation had a limit of blank and a limit of detection of 2.5 and 3.7 mmol/g of feces, respectively. The mean coefficients of variation for precision and reproducibility for 3-BrY were 11.2% (range: 7.5–14.2%) and 10.1% (4.8–15.2%), respectively. The ranges of observed-to-expected ratios for linearity and accuracy were 81.3–125% and 85.4–120%, respectively. The reference intervals for mean and maximum fecal 3-BrY concentrations in 40 healthy dogs were 3.7–23.0 and 3.7–37.8 mmol/g of feces. Mean and maximum fecal 3-BrY concentrations in dogs with CE were significantly higher than those of healthy dogs ($p < 0.001$). Further research is warranted to determine the clinical usefulness of fecal 3-BrY concentrations in dogs with CE.

Keywords: 3-bromotyrosine; chronic enteropathy; dogs; eosinophils; feces; validation studies