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**Simultaneous Determination of Endogenous and Orally Administered  $^{15}\text{N}$ -Labeled Polyamines in Rat Organs**

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A method for the simultaneous determination of polyamines (putrescine, spermidine, and spermine) by ionspray ionization-mass spectrometry was modified to determine  $^{15}\text{N}$ -labeled polyamines together with unlabeled polyamines using  $^{13}\text{C}$ ,  $^{15}\text{N}$  double-labeled polyamines as internal standards. This technique permitted the use of  $^{15}\text{N}$ -labeled polyamines as tracer compounds to follow polyamine biosynthesis, interconversion, and absorption. The method was used to examine the organ distribution of orally administered  $^{15}\text{N}$ -labeled polyamines in rats. Each  $^{15}\text{N}$ -labeled polyamine was taken up by the three organs tested: the small intestine, liver, and kidney. The uptake of  $^{15}\text{N}$ -labeled spermidine was greater than that of  $^{15}\text{N}$ -labeled spermine and putrescine. Administration of a mixture of  $^{15}\text{N}$ -labeled polyamines was useful for determining the disposition of each  $^{15}\text{N}$ -polyamine absorbed from the intestinal tract.