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# An artificial amino acid radiopharmaceutical for single photon emission computed tomographic study of pancreatic amino acid transports $^{123}$I-3-iodo-alpha-methyl-L-tyrosine

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$^{123}$I-3-iodo-alpha-methyl-L-tyrosine ($^{123}$I-L-AMT) was selected and its characteristics on pancreas accumulation, metabolic selectivity and metabolic stability of $^{125}$I-L-AMT were studied. The studies on rat tissue slice as well as mouse biodistribution proved very high accumulation of $^{125}$I-labeled L-AMT in the pancreas, which was remarkably inhibited by the active transport inhibitor, ouabain. $^{125}$I-L-AMT does not enter into protein synthesis and general amino acid catabolism. Moreover, $^{125}$I-L-AMT was very stable against enzymatic deiodination. Thus, the above studies indicated that the $^{123}$I-labeled L-AMT was an "artificial amino acid" radiopharmaceutical to be used for the selective measurement of the membrane amino acid transport rate in the pancreas.

**Key words:** radioiodinated amino acid, amino acid transport, pancreas, radiopharmaceutical metabolic stability