

Abstract Submitted
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Nuclear imaging of iodine uptake in mouse tissues¹ W.T. HAMMOND, J.T. CELLA, C. MCLOUGHLIN, K.J. SMITH, R.E. WELSH, Physics, William and Mary, E.L. BRADLEY, M.S. SAHA, Biology, William and Mary, J. QIAN, Appl. Sci, William and Mary, S. MAJEWSKI, V. POPOV, M.F. SMITH, A.G. WEISENBERGER, Jefferson Lab/TJNAF — We have designed and employed a compact gamma camera based on pixellated scintillators and position-sensitive photomultipliers to obtain *in vivo* images in mice of biological substances tagged with ¹²⁵I. Biomedical imaging studies make use of radioactive isotopes of iodine. In these applications, protection of the thyroid from the effects of the radioactive material can be important. We have studied *in vivo* the effectiveness in mice of pre-administration of KI in various concentrations to evaluate both the biologically effective doses for thyroid protection and the potential for use in general sodium iodide symporter studies. These findings have important implications for both intentional and accidental exposure to radioiodine.

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