

Abstract Submitted
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Correlations between nuclear and fluorescent Imaging of mammary tumors in mice¹ ROBIN CARROLL, JOHN STONE, Randolph Macon, ERIC BLUE, Biology, William and Mary, ERIC BRADLEY, JIANGUO QIAN, Applied Science, William and Mary, MARGARET SAHA, Biology, William and Mary, ROBERT WELSH, Physics, William and Mary — Progress with new imaging technologies permits the study of biological processes both *in vivo* and noninvasively. Two systems, a position-sensitive gamma camera and a cooled-CCD camera have been applied in this work. A C3H strain of mouse carrying the Mouse Mammary Tumor Virus (MMTV) was imaged using 800 nm Q-tracker fluorescent dots conjugated to a peptide targeting integrin $\alpha v \beta 3$ a mammary marker for angiogenesis. We subsequently imaged with the gamma camera to detect low levels of ¹²⁵I distribution, and hence, the activity of a trans-membrane protein called the sodium iodide symporter (NIS) responsible for iodine transport. Preliminary results indicate that the biodistribution of the tagged Q-tracker dots and ¹²⁵I co-localize very early in seemingly normal mammary glands of infected MMTV mice, while in larger palpable tumors the Q-dot signals are less apparent in comparison with the ¹²⁵I signal.

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