

Physical & biological evaluation of newly developed positron probe

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Abstract

Physical & biological evaluation was performed to the newly developed positron probe (PP). The sensitivity of PP to the total radioactivity was 5 to 7%, and the correlation between radioactivity and measured counts was observed between 0.1nCi to 5uCi.

Biological evaluation was performed using transplanted experimental tumor (AH109A) in vivo. Tumor radioactivity was measured by three different procedures 1) through the skin, 2) bearing the skin and 3) removed tumor. Tumor counts have closed relationship between skin bearing tumor and removed tumor. Organs counts except brain showed less than 1 cps (background) and tumor showed 5 to 8 cps, which can be distinguishable from the normal tissues.

PP can be used for monitoring of metastatic lymph node detection during operation.