DETECTION OF MULTIDRUG-RESISTANT *MYCOBACTERIUM TUBERCULOSIS* DIRECTLY FROM SPUTUM SAMPLES OF PATIENTS FROM JAKARTA, INDONESIA BY RADIOISOTOPE-BASED PCR-DOT BLOT HYBRIDIZATION

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Abstract. The problem of eradicating tuberculosis (TB) has become more complicated by the emergence of multidrug resistant TB (MDR-TB). Any rapid laboratory method that can be used to detect drug susceptibility of *Mycobacterium tuberculosis* (MTB) is urgently needed. In this study, we employed the radioisotope (^{32}P)-based PCR-dot blot hybridization method on sputum samples from patients in Jakarta, Indonesia. Bacterial DNA was extracted using BOOM method. *KatG* and *rpoβ* were amplified by PCR and katG315 or rpoβ531 mutations were identified by dot blot hybridization. Of 100 samples, 11% and 22% showed presence of mutation at codons 315 (AGC⟶ACC) of *katG* and 531 (TCG ⟶ TTG) of *rpoβ*, respectively. Five percent of the samples showed both mutations. This method is rapid, sensitive, and reliable and can be used to screen large numbers of samples in epidemiological studies.

Keywords: *M. tuberculosis,* MDR-TB, radioisotope, dot blot hybridization

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