

Development, validation and use of a fluorescent covalent microsphere immunoassay (FCMIA) for the measurement of IgG antibodies to *Bacillus anthracis* protective antigen in human sera

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At the request of the Environmental Protection Agency, we performed immunological biological monitoring for exposure to *Bacillus anthracis* (*Ba*) on workers conducting environmental sampling in response to the October, 2001 terror attack at the American Media, Inc., building in Boca Raton, FL. We developed, validated and used a fluorescent covalent microsphere immunoassay (FCMIA) to measure anti-*Ba*-protective antigen (PA) IgG in workers' sera. The FCMIA gave 4 positive anti-PA IgG results. The positive sera were the pre-entry and follow-up samples of two workers who had received their last dose of anthrax vaccine in 2000. We also compared the FCMIA to a Centers for Disease Control standardized enzyme-linked immunosorbent assay (ELISA) for anti-PA IgG (Emerg Infect Dis 8:1103-10, 2002). A high positive correlation ($R=0.923$, $P < 0.001$) was observed when 20 other samples were co-analyzed for anti-PA IgG in a double-masked analysis using FCMIA and ELISA.

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