【ABSTRACT】A fully automated nonradioactive mycobacteria culture system, the MB／BacT(Organon Teknika, Durham, NC, USA), was evaluated for its ability to detect mycobacteria in clinical specimens (mostly sputa). After pretreatment with mucolytic agent (semi-alkaline protease) for digestion and NaOH for decontamination, the concentrated sediments were inoculated into the MB／BacT Process Bottles supplemented with antibiotics. The bottles were incubated at 37℃ and continuously monitored for up to fifty-six days. In the evaluation, recovery of mycobacteria was directly compared with two conventional solid media (egg-based Ogawa and Middlebrook 7H10 agar). From 456 clinical specimens, a total of 223 isolates of mycobacteria comprising of Mycobacterium tuberculosis (n = 135) and nontuberculous mycobacteria (NTM; n = 88) were recovered. Of 223 isolates, 168 (75.3%) were positive in the MB／BacT, the results indicating less frequency when compared to the Middlebrook 7H10 agar, but more than egg-based Ogawa media, in particular for NTM. The mean time to detect positive for M. tuberculosis by the MB／BacT was 23.9 days (2.5 to 52.4), approximately similar to those of Ogawa-Vite and Middlebrook 7H10 agar media. Whereas, the MB／BacT could detect positive for NTM earlier than the conventional solid media did. Microorganisms other than mycobacteria contaminated with <1%. These results suggest that the well-automated nonradiometric MB／BacT is particularly useful for the isolation of mycobacteria and suitable to the mycobacteriology laboratories in Japan, although more practical but less adverse pretreatment procedure should be established.