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WASHINGTON, D.C. 20523

DATE: 9/30/88

MEMORANDUM

TO: AID/PPC/CDIE/DI, room 209 SA-18

FROM: AID/SCI, Victoria Ose

SUBJECT: Transmittal of AID/SCI Progress Report(s)

Attached for permanent retention/proper disposition is the following:

AID/SCI Progress Report No. 5, 2, 4
PR #3

Attachment

5. 224

PROGRESS REPORT NO. 3

"IMMUNODIAGNOSIS AND SEROEPIDEMIOLOGY OF TUBERCULOSIS"

A RESEARCH PROJECT

USAID/PSTC PROGRAM

SUBMITTED BY

SAMIT MAKONKAWKEYOON, Ph.D.

PROJECT LEADER

DEPARTMENT OF CLINICAL IMMUNOLOGY

FACULTY OF ASSOCIATED MEDICAL SCIENCES

CHIANG MAI UNIVERSITY

CHIANG MAI, THAILAND.

Rec'd in SCI DEC 5 1986

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CHIANG MAI, THAILAND.

Country	:	Thailand.
Grant No.	:	936-5542-G-00-5043-00.
Program	:	Program on Science and Technology Cooperation.
Project Title	:	Immunodiagnosis and Seroepidemiology of Tuberculosis.
Project Leader	:	Santi Makonkawkeyoon, Ph.D.
Organization	:	Department of Clinical Immunology Faculty of Associated Medical Sciences Chiang Mai University Chiang Mai, Thailand.
Co-investigators	:	Sichon Songsiri, M.S. Sakchai Pettrairat, M.S. Luksana Makonkawkeyoon, M.S. Busara Pongthong, M.D.
Project Consultants	:	None
Authorized Officer	:	Sanit Makonkawkeyoon, Ph.D.
Total Project Budget	:	US$ 102,180
Project Duration	:	April 1985-October 1987.
Reporting period	:	May 1, 1986-October 31, 1986.

Budget Allocation for This Period : Baht 409,185 or US$ 15,155

1. BACKGROUND/INTRODUCTIONS :

Tuberculosis is one of the oldest and most widespread of the life-threatening infectious diseases still affecting the human population throughout the world. The estimated prevalence is about 15-20 million of active cases, with an annual incidence of about 10 million and at least 3 million deaths each year. Although the problem of tuberculosis in developed countries has been decreasing since the turn of this century, there is a very low decline in developing countries. The World Health Organization (WHO) reported that pulmonary tuberculosis was still widespread in the developing world with an annual incidence of 200-350 cases per 100,000 inhabitants in some parts of Africa, Asia and Oceania.

The diagnosis of tuberculosis is therefore of importance both to the individual patient and to the community. There is no simple diagnostic test for tuberculosis. Clinical and radiological signs and bacterial staining of smear are notoriously nonspecific. Culture techniques, although providing a definitive diagnosis, are expensive and time-consuming, and more seriously, they vary considerably in their reliability from laboratory to laboratory. There is no doubt that tuberculosis is often misdiagnosed; many cases are not recognized until a postmortem examination is performed, and cases of renal, meningitis, bone and intestinal tuberculosis are often only diagnosed late in the course of the disease.

Extensive studies have established beyond doubt that M.tuberculosis induces humoral immune response in the infected host. Until the present time, no investigator has developed a completely reliable test for serodiagnosis of tuberculosis. Many researchers have shown that there is a high degree of sharing of antigens between the various mycobacterial species and that some of the antigens are also shared with other bacterial genera.

A serologic test that would indicate active tuberculosis with reasonable precision would be of great value in the numerous conditions in which tuberculosis is part of a differential diagnosis, and in the diagnosis of diseases of internal organs that are difficult to assess, such as those of the spine or the gut. A serologic test would also save the time required for culture of specimens containing too few tubercle bacilli to yield a positive direct smear examination. The development of an effective serologic test to detect antibody in preclinical or clinical tuberculosis would also greatly aid the effectiveness of tuberculosis control programs. Such an assay could both facilitate early diagnosis of the disease and could decrease incidence of the disease by early detection in multibacillary individuals. We have tried to isolate a species specific antigen from M.tuberculosis and tried to develop a specific serologic test for tuberculosis.

2. OBJECTIVES:

The overall objectives of this research project are :

(1) to obtain species specific antigens or haptens from M.tuberculosis.

(2) To develop an enzyme linked immunosorbent assay by

using the species specific antigens or haptens for serodiagnosis of tuberculosis

(3) To develop a simple and practical method of ELISA for field study and seroepidemiology of tuberculosis.

3. MATERIALS AND METHODS :

We have made progress in the investigation of serodiagnosis for tuberculosis. A number of antigens was isolated and tested with sera from various sources by ELISA technique. The antigens included : sonicated M.tuberculosis H37Rv; Purified Protein Derivative (PPD); pyridine-extracted antigen; ammonium sulfate-precipitated from culture filtrate of M.tuberculosis H37Rv antigen; chloroform-methanol extracted lipid antigen from M.tuberculosis H37Rv; and chloroform-methanol extracted lipid antigen from M.tuberculosis local isolated strain. The antigens were tested with 120 sera from normal blood donors, 160 sera from patients with active pulmonary tuberculosis, 73 sera from patients with various types of leprosy, and 16 sera from patients with atypical mycobacterial infection.

ANTIGEN PREPARATION

Sonicated M.tuberculosis antigen

M.tuberculosis H37Rv was cultured in Sauton's medium for 6 weeks and the bacilli were killed by autoclave. They were washed thrice with distilled water and resuspended in phosphate buffered saline containing 0.4% sodium azide to give 25% w/v (wet weight). This suspension was sonicated in an ice bath at 300

watts for 15 min, three times, using Braun-Sonic Model 1510, transducer diameter 2 cm. (Braun, Melsungen, U.S.A.). The sonicate was centrifuged at 15,000 g for 20 min and the supernatant was stored at 4 ^{o}C as the source of sonicated M.tuberculosis H37Rv antigen. The opiral antigen dilution was 1:400.

Antigen from culture filtrate.

M.tuberculosis H37Rv was cultured at 37 ^{o}C in Sauton's liquid media for 1 month. Cultures showing maximal growth were autoclaved. After removal of mycobacterial mass by filtration through whatman No.1 filter paper, protein antigen in culture filtrate was precipitated by ammonium sulfate at 80% final concentration. The precipitates were collected by centrifugation, then dissolved in phosphate buffered saline pH 7.3 and reprecipitated 4 times. The final precipitates were dissolved in and dialysed against PBS. Protein concentration was determined by Biuret method.

PPD

Tuberculin purified protein derivative (PPD) was obtained from Connaught (Connaught Medical Research Laboratories, Toronto, Canada.). The optimal concentration for ELISA was 0.6 ug/well.

Lipid antigen from local isolated M.tuberculosis.

M.tuberculosis used for lipid extraction, was isolated from a patient who had recently been diagnosed to be pulmonary tuberculosis. The organisms were cultured in Sauton's medium for 2 month and killed by autoclave. They were washed thrice with distilled water and dried at 70 ^{o}C for 24 hours. The dried

bacilli were extracted by chloroform-methanol (2:1), 1 gm of dried bacilli/40 ml of chloroform-methanol mixture. The preparation was stirred in 50 °C water bath for 18 hours and filtered through filter paper (Whatman No.42). The lipid was evaporated at 40 °C water bath until dried lipid was obtained. Two ml of chloroform-methanol (2:1) mixture was added into dried lipid extract. The optimal concentration for use in ELISA was 1.1 ug/well.

Lipid antigen from M.tuberculosis H37Rv.

Mycobacterial lipid was obtained from M.tuberculosis H37Rv. The organism was grown in Sauton's medium for 6 weeks. The well-grown cultures were autoclaved and washed with distilled water. The bacilli were extracted with chloroform-methanol (2:1) as above. The lipid was dissolved in $CHCl_3$:CH_3OH(2:1) at a concentration of 3 mg/ml. Further dilutions of antigen were diluted in absolute ethanol.

ELISA procedure for lipid antigens.

Lipid antigen in 50 ul ethanol was added to the wells of microtiter plate (Dynatech, Alexandria, VA, U.S.A.), and the solvent was evaporated in 70 °C for 40 min. A 50 ul of test serum (1:400 dilution with 0.1% Tween 20, 0.02% sodium azide in phosphate-buffered saline) was added, and the plates were incubated at room-temperature for 1 hour. Wells were washed three times with phosphate buffered saline (PBS). 50 ul Peroxidase-conjugated anti-human immunoglobulin (G+A+M) (Cappel, Laboratories, Cochraville, PA, U.S.A.) diluted with 0.1% Tween 20 in phosphate buffered saline, was added into each well and

incubated at room temperature for 30 min. After removing unreacted conjugate with PBS, 50 ul of substrate solution (o-phenylenediamine [0.4 mg/ml], 30% hydrogen peroxide [0.5 ul/ml] in citrate-phosphate buffer [pH 5.0]) was added, plates were developed in the dark for 30 min, and the reaction was stopped by addition of 50 ul of 2.5 N sulfuric acid. The optical density was measured with Titertek Multiskan (Flow Laboratories, California, U.S.A.) at wave length of 492 nm.

ELISA procedure for PPD ; pyridine extracted antigen; sonicated antigen ; and ammonium-precipitated antigen.

The antigens were diluted in coating buffer (carbonate-bicarbonate buffer pH 9.6) to optimal dilution (previous titration). A 100 ul of diluted antigen was dispensed into each well of the microtiter plate. All of remaining steps were identical to those followed in the ELISA with lipid antigen, except that the volume of reagents was 100 ul instead of 50 ul and for sonicated M.tuberculosis H37Rv antigen, tested sera were diluted 1600 times in stead of 400 times, and the conjugate was anti-human IgG instead of anti-human IgG, M, A.

4. RESULTS AND DISCUSSION

Antibody to PPD in 113 normal blood donors are shown in table 1. Only 7 out of 113 (6.2%) are positive at O.D. 0.200 or more. Table 2 shows antibody to PPD in 18 suspected tuberculosis patients whose smear positive for acid fast bacilli (AFB) but culture negative or contaminated. 10 out of 18 (55.6%) are positive Table 3 depicts antibody to PPD in 14 tuberculosis patients who had a previous history of tuberculosis treatment many months or years ago and returned to T.B. Control Center

with sign of tuberculosis. There are 7 out of 14 (50.0%) containing antibody to PPD. Antibody to PPD in 31 tuberculosis patients recently on treatment is shown in table 4. 25 out of 31 (80.7%) have antibody. Table 5 shows antibody to PPD in 80 newly diagnosed tuberculosis patients : 51 out of 80 (63.8%) contain antibody. Table 6 shows antibody to PPD in 73 leprosy patients : 30 (41.1%) have antibody. Table 7 presents antibody to PPD in 16 patients infected with atypical mycobacteria : 10 (62.5%) contain antibody.

Antibody to pyridine extracted antigen in 114 normal blood donors are shown in table 8 : only 8 (7.0%) have antibody when O.D. 0.805 is the cut off point. Table 9 depicts antibody to pyridine extracted antigen in 16 tuberculosis patients with smear positive for AFB but culture negative or contaminated : 11 (68.8%) contain antibody. Table 10 shows antibody to this antigen in 14 tuberculosis patients who had a previous history of tuberculosis treatment months or years ago and returned to T.B. Control Center with sign of tuberculosis : 11 (78.6%) have antibody. Table 11 presents antibody level to pyridine extracted antigen in 31 tuberculosis patients recently on treatment : 26 (83.9%) are positive for antibody. Antibody to this antigen in 80 newly diagnosed tuberculosis patients are shown in table 12 : 58 (72.5%) contain antibody. Table 13 illustrates antibody to pyridine extracted antigen in 73 leprosy patients: 47 (64.4%) have antibody to this antigen. Table 14 shows 10 out of 16 (62.5%) patients infected with atypical mycobacteria have antibody to this antigen.

Table 15 shows antibody against sonicated M.tuberculosis H37Rv in 115 blood donors : 6 (5.2%) have antibody level at O.D. 0.210 or more. Table 16 shows antibody to sonicated antigen in 18 suspected tuberculosis patients whose smear positive for AFB but culture negative or contaminated : 14 (77.8%) contain antibody. Antibody to sonicated antigen in 31 tuberculosis patients recently on treatment is shown in table 17. 25 (80.7%) have positive antibody. Table 18 shows 57 out of 80 (71.3%) having antibody to sonicated antigen in newly diagnosed tuberculosis patients. Table 19 depicts antibody to sonicated antigen in 14 tuberculosis patients who had a previous history of tuberculosis treatment many months or years ago and returned to T.B. Control Center with signs of tuberculosis. 9 out of 14 (64.3%) are positive for antibody.

Table 20 shows antibody to culture filtrate of M.tuberculosis H37Rv in 116 normal blood donors : 10 (8.6%) are positive for antibody at the O.D. 0.248 or more. Antibody to culture filtrate antigen in 16 patients infected with atypical mycobacteria is shown in table 21. 12 (75.0%) are positive for antibody. Table 22 illustrates antibody to this antigen in 73 leprosy patients : 58 (79.5%) have positive antibody. In 18 patients with smear positive for AFB, but culture negative or contaminated, 14 (77.8%) are positive for antibody as shown in table 23. Table 24 depicts antibody to culture filtrate antigen in 14 patients with a previous history of tuberculosis treatment many months or years ago and returned to T.B. Control Center with signs of tuberculosis. 13 (92.9%) are positive for antibody. In 31 tuberculosis patients recently on treatment, 27 (87.1%) have

antibody to culture filtrate antigen as illustrated in table 25. Table 26 shows antibody to culture filtrate antigen of 80 newly diagnosed tuberculosis patients : 66 (82.5%) are positive for antibody.

Table 27 illustrates antibody to lipid antigen from local isolated M.tuberculosis in 115 blood donors : 4 (3.5%) have antibody to this antigen at the O.D. 0.418 or more. Antibody to this antigen in 73 leprosy patients is shown in table 28. 51 (69.9%) contain antibody. Table 29 shows antibody to lipid antigen of local isolated M.tuberculosis in 18 suspected tuberculosis patients with smear positive for AFB but culture negative or contaminated : 14 (77.8%) are positive for antibody. Antibody to this antigen in 14 patients with a previous history of tuberculosis treatment months or years and returned to T.B. Control Center with signs of tuberculosis are shown in table 30. 11 (78.6%) are positive for antibody. Table 31 shows antibody to lipid antigen in 31 tuberculosis patients recently on treatment : 27 (87.1%) positive for antibody. Table 32 depicts antibody to this antigen in 80 newly diagnosed tuberculosis patients : 56 (70.0%) positive antibody.

Table 33 shows antibody to lipid antigen from M.tuberculosis H37Rv in 118 blood bank donors : 8 (6.8%) are positive at the O.D. of 0.050 or more. Antibody to this antigen in 18 suspected tuberculosis patients with smear positive but culture negative or contaminated, 16 (88.9%) positive as shown in table 34. Table 35 shows antibody to this lipid antigen in 14 patients with a previous history of tuberculosis treatment months

or years and returned to T.B. Control Center with signs of tuberculosis : 11 (85.7%) show positive antibody. Antibody to this lipid antigen in 31 tuberculosis patients recently on treatment : 26 (83.9%) positive antibody as shown in table 36. Table 37 shows antibody to lipid antigen in 80 newly diagnosed tuberculosis patients : 66 (82.5%) positive for antibody.

Table 38 summarizes the number of studied cases and number and percentage positive for antibodies to different types of antigens using different O.D. values as cut off point. Lipid antigen from M.tuberculosis H37Rv or local isolation seem to be good antigens for detecting antibody against tuberculosis.

Table 1 Determination of antibodies to PPD in 120 blood donors by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-100	0.111	BB-120	0.177
BB-101	0.144	BB-121	0.085
BB-102	0.075	BB-122	0.140
BB-103	0.141	BB-123	0.209
BB-104	0.142	BB-124	0.068
BB-105	0.140	BB-125	0.100
BB-106	0.162	BB-126	0.074
BB-107	0.101	BB-127	0.305
BB-108	0.082	BB-128	0.080
BB-109	0.122	BB-129	0.112
BB-110	0.121	BB-130	0.093
BB-111	0.118	BB-131	0.066
BB-112	0.147	BB-132	0.066
BB-113	0.106	BB-133	0.050
BB-114	0.121	BB-134	0.076
BB-115	0.132	BB-135	0.080
BB-116	0.294	BB-136	0.157
BB-117	0.094	BB-137	0.065
BB-118	0.081	BB-138	0.107
BB-119	0.128	BB-139	0.137

Results are expressed in terms of optical density at wave length 492 nm.

Table 1 Determination of antibodies to FTL in 120 blood donors by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-201	0.082	BB-221	0.098
BB-202	0.105	BB-222	0.106
BB-203	0.103	BB-223	0.203
BB-204	0.209	BB-224	0.244
BB-205	0.080	BB-225	0.068
BB-206	0.123	BB-226	0.149
BB-207	0.090	BB-227	0.151
BB-208	0.050	BB-228	0.060
BB-209	0.075	BB-229	0.245
BB-210	0.096	BB-230	0.181
BB-211	0.166	BB-231	0.125
BB-212	0.063	BB-232	0.096
BB-213	0.060	BB-233	0.110
BB-214	0.105	BB-234	0.094
BB-215	0.100	BB-235	0.090
BB-216	0.111	BB-236	0.102
BB-217	0.205	BB-237	0.084
BB-218	0.060	BB-238	0.279
BB-219	0.059	BB-239	0.158
BB-220	0.163	BB-240	0.196

Results are expressed in terms of optical density at wave length 492 nm.

Table 1 Determination of antibodies to PPD in 120 blood donors by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-301	0.101	BB-321	0.114
BB-302	0.053	BB-322	0.088
BB-303	0.164	BB-323	0.093
BB-304	0.078	BB-324	0.211
BB-305	0.246	BB-325	0.111
BB-306	0.055	BB-326	0.067
BB-307	0.125	BB-327	0.047
BB-308	0.110	BB-328	0.076
BB-309	0.075	BB-329	0.061
BB-310	0.084	BB-330	0.315
BB-311	0.155	BB-331	0.124
BB-312	0.052	BB-332	0.112
BB-313	0.169	BB-333	0.067
BB-314	0.122	BB-334	0.108
BB-315	0.102	BB-335	0.079
BB-316	0.233	BB-336	0.075
BB-317	0.140	BB-337	0.126
BB-318	0.093	BB-338	0.188
BB-319	0.059	BB-339	0.102
BB-320	0.211	BB-340	0.107

Results are expressed in terms of optical density at wave length 492 nm.

Table 2 Antibodies to PPD by ELISA in 18 patients with smear positive and culture (negative, or contaminated).

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 2	1	C	TR	0.406
TB- 3	2	N	PT	0.096
TB- 15	1	C	TR	0.157
TB- 23	2	N	TR	0.263
TB- 60	1	N	TR	0.290
TB- 64	2	N	TR	0.244
TB- 88	1	N	NE	0.053
TB- 91	2	N	TR	0.842
TB- 98	2	N	NE	0.728
TB- 99	2	N	TR	0.055
TB-124	2	N	TR	0.151
TB-129	1	N	NE	0.085
TB-135	U	U	U	0.182
TB-141	1	C	TR	0.689
TB-144	2	N	TR	0.259
TB-146	1	N	NE	0.110
TB-149	1	N	TR	0.280
TB-160	3	U	NE	0.635

Results are expressed in terms of optical density at wave length 492 nm.

N = No growth, C = Contaminated, NE = No treatment, TR = On treatment, PT = Previous treatment, U = Unknown
Smear 1 = ACF 1-10/field
" 2 = ACF 10-100/field
" 3 = ACF > 100/field

Table 3 Antibodies to PPD by ELISA in 14 patients with history of tuberculosis and returning for tuberculosis treatment.

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 1	2	+	PT	0.223
TB- 4	2	+	PT	0.432
TB- 20	1	+	PT	0.119
TB- 22	1	+	PT	0.176
TB- 28	1	+	PT	0.407
TB- 33	2	+	PT	0.120
TB- 34	1	+	PT	0.254
TB- 41	1	+	PT	0.560
TB- 47	2	+	PT	0.074
TB- 71	1	+	PT	0.355
TB-116	1	+	PT	0.108
TB-118	2	+	PT	0.116
TB-127	1	+	PT	0.102
TB-154	2	+	PT	0.677

Results are expressed in optical density at wave length 492 nm.

Table 4 Antibodies to PPD by ELISA in 31 tuberculosis patients with short period of treatment.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 11	3	+	TR	0.320	TB-107	1	+	TR	0.089
TB- 14	1	+	TR	0.159	TB-110	1	+	TR	0.310
TB- 18	2	+	TR	0.474	TB-114	2	+	TR	0.405
TB- 25	1	+	TR	0.267	TB-133	1	+	TR	0.115
TB- 42	1	+	TR	0.320	TB-134	2	+	TR	0.075
TB- 45	1	+	TR	0.146	TB-140	2	+	TR	0.263
TB- 51	1	+	TR	0.370	TB-142	3	+	TR	1.414
TB- 53	1	+	TR	0.364	TB-143	2	+	TR	1.153
TB- 57	2	+	TR	0.305	TB-150	2	+	TR	0.462
TB- 59	2	+	TR	1.100	TB-157	2	+	TR	0.274
TB- 61	1	+	TR	0.410	TB-159	2	+	TR	1.919
TB- 69	1	+	TR	0.085					
TB- 75	2	+	TR	0.210					
TB- 77	1	+	TR	0.282					
TB- 80	2	+	TR	0.316					
TB- 82	3	+	TR	0.229					
TB- 83	1	+	TR	0.619					
TB- 86	2	+	TR	0.554					
TB-100	2	+	TR	0.263					
TB-104	2	+	TR	1.016					

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear for AFB, CU = sputum culture, TR = On treatment

Table 5 Antibodies to PPD by ELISA in 80 newly diagnosed tuberculosis patients.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 5	1	+	NE	0.259	TB- 38	2	+	NE	0.308
TB- 6	1	+	NE	0.110	TB- 39	1	+	NE	0.136
TB- 7	2	+	NE	0.147	TB- 40	2	+	NE	0.550
TB- 8	2	+	NE	0.165	TB- 43	2	+	NE	0.499
TB- 9	1	+	NE	0.172	TB- 44	3	+	NE	0.548
TB- 10	1	+	NE	0.072	TB- 46	2	+	NE	0.368
TB- 13	1	+	NE	0.202	TB- 48	1	+	NE	1.220
TB- 17	1	+	NE	0.272	TB- 49	2	+	NE	0.117
TB- 18	2	+	NE	0.434	TB- 50	2	+	NE	0.154
TB- 19	1	+	NE	0.352	TB- 52	2	+	NE	0.432
TB- 21	1	+	NE	0.180	TB- 54	1	+	NE	0.637
TB- 24	2	+	NE	0.431	TB- 55	1	+	NE	0.489
TB- 26	1	+	NE	0.267	TB- 56	1	+	NE	0.130
TB- 27	2	+	NE	0.514	TB- 58	1	+	NE	0.248
TB- 29	2	+	NE	0.134	TB- 62	1	+	NE	0.897
TB- 31	1	+	NE	0.193	TB- 63	2	+	NE	0.472
TB- 32	1	+	NE	0.256	TB- 65	2	+	NE	0.087
TB- 35	2	+	NE	0.110	TB- 66	1	+	NE	0.148
TB- 36	2	+	NE	0.404	TB- 67	2	+	NE	0.219
TB- 37	1	+	NE	0.236	TB- 70	1	+	NE	1.518

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear for AFB, CU = sputum culture, NE = No treatment

Table 5 Antibodies to PPD detected by ELISA in 80 newly diagnosed tuberculosis patients (cont.).

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 72	2	+	NE	0.219	TB-102	2	+	NE	1.173
TB- 73	2	+	NE	0.476	TB-103	2	+	NE	0.687
TB- 74	2	+	NE	0.207	TB-105	1	+	NE	0.107
TB- 76	2	+	NE	0.116	TB-106	1	+	NE	0.092
TB- 78	2	+	NE	0.267	TB-108	2	+	NE	0.364
TB- 79	2	+	NE	0.331	TB-109	1	+	NE	0.204
TB- 81	3	+	NE	0.466	TB-111	2	+	NE	0.361
TB- 84	2	+	NE	0.216	TB-112	2	+	NE	1.261
TB- 85	1	+	NE	0.379	TB-113	2	+	NE	0.097
TB- 87	2	+	NE	0.213	TB-115	2	+	NE	0.147
TB- 88	1	+	NE	0.068	TB-117	2	+	NE	1.155
TB- 89	3	+	NE	0.810	TB-119	1	+	NE	1.067
TB- 90	2	+	NE	0.139	TB-120	1	+	NE	0.158
TB- 92	2	+	NE	0.278	TB-121	1	+	NE	0.260
TB- 93	2	+	NE	0.023	TB-122	1	+	NE	0.647
TB- 94	1	+	NE	0.159	TB-123	1	+	NE	0.197
TB- 95	1	+	NE	0.057	TB-125	2	+	NE	0.322
TB- 96	2	+	NE	0.140	TB-126	1	+	NE	0.364
TB- 97	2	+	NE	0.085	TB-128	2	+	NE	0.510
TB-101	2	+	NE	0.180	TB-130	1	+	NE	1.128

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear for AFB, CU = sputum culture, NE = No treatment

Table 6 Antibodies to PPD in 73 leprosy patients by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
LEP- 1	0.224	LEP- 21	0.144
LEP- 2	0.099	LEP- 22	0.146
LEP- 3	1.421	LEP- 23	0.350
LEP- 4	1.332	LEP- 24	0.302
LEP- 5	0.923	LEP- 25	0.221
LEP- 6	0.242	LEP- 26	0.242
LEP- 7	0.126	LEP- 27	0.268
LEP- 8	0.703	LEP- 28	0.013
LEP- 9	0.391	LEP- 29	0.190
LEP- 10	0.328	LEP- 30	1.297
LEP- 11	1.439	LEP- 31	0.088
LEP- 12	0.143	LEP- 32	0.174
LEP- 13	0.408	LEP- 33	0.251
LEP- 14	0.957	LEP- 34	0.139
LEP- 15	0.988	LEP- 35	0.073
LEP- 16	0.120	LEP- 36	0.316
LEP- 17	0.698	LEP- 37	0.178
LEP- 18	0.359	LEP- 38	0.208
LEP- 19	0.173	LEP- 39	0.370
LEP- 20	0.422	LEP- 40	0.204

Results are expressed in terms of optical density at wave length 492 nm.

Table 6 Antibodies to PPD in 73 leprosy patients by ELISA [cont.].

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
LEP- 41	0.139	LEP- 61	0.166
LEP- 42	0.034	LEP- 62	0.047
LEP- 43	0.124	LEP- 63	0.337
LEP- 44	0.177	LEP- 64	0.090
LEP- 45	0.057	LEP- 65	0.114
LEP- 46	0.034	LEP- 66	0.069
LEP- 47	0.000	LEP- 67	0.129
LEP- 48	0.125	LEP- 68	0.088
LEP- 49	0.174	LEP- 69	0.144
LEP- 50	0.020	LEP- 70	0.107
LEP- 51	0.252	LEP- 71	0.239
LEP- 52	0.057	LEP- 72	0.061
LEP- 53	0.084	LEP- 73	0.199
LEP- 54	0.090		
LEP- 55	0.022		
LEP- 56	0.077		
LEP- 57	0.094		
LEP- 58	0.022		
LEP- 59	0.066		
LEP- 60	0.035		

Results are expressed in terms of optical density at wave length 492 nm.

Table 7 Antibodies to PPD by ELISA in 16 patients infected with atypical mycobacteria.

SPECIMEN Number	ELISA Value
AMI- 1	0.351
AMI- 2	0.604
AMI- 3	0.184
AMI- 4	0.176
AMI- 5	0.302
AMI- 6	0.542
AMI- 7	0.476
AMI- 8	1.800
AMI- 9	0.331
AMI- 10	0.288
AMI- 11	0.671
AMI- 12	0.140
AMI- 13	0.238
AMI- 14	0.069
AMI- 15	0.102
AMI- 16	0.076

Results are expressed in terms of optical density at wave length 492 nm.

Table 8 Antibodies to pryidore extracted Ag in 120 blood donors by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-100	0.311	BB-120	0.136
BB-101	0.256	BB-121	0.080
BB-102	0.416	BB-122	0.504
BB-103	0.446	BB-123	0.267
BB-104	1.048	BB-124	0.199
BB-105	0.413	BB-125	0.326
BB-106	0.385	BB-126	0.184
BB-107	0.212	BB-127	0.728
BB-108	0.410	BB-128	0.463
BB-109	0.266	BB-129	0.487
BB-110	0.760	BB-130	0.358
BB-111	0.447	BB-131	0.434
BB-112	0.241	BB-132	0.364
BB-113	0.368	BB-133	0.149
BB-114	0.195	BB-134	0.211
BB-115	1.636	BB-135	0.240
BB-116	0.172	BB-136	0.898
BB-117	0.173	BB-137	0.273
BB-118	0.485	BB-138	0.206
BB-119	0.385	BB-139	0.581

Results are expressed in terms of optical density at wave length 492 nm.

Table 8 Antibodies to pyridine extracted Ag in 120 blood donors by ELISA [cont.].

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-201	0.241	BB-221	0.225
BB-202	0.263	BB-222	0.386
BB-203	0.181	BB-223	0.225
BB-204	0.812	BB-224	1.024
BB-205	0.312	BB-225	0.499
BB-206	0.446	BB-226	0.940
BB-207	0.003	BB-227	0.413
BB-208	0.135	BB-228	1.059
BB-209	0.384	BB-229	0.269
BB-210	0.181	BB-230	0.136
BB-211	1.487	BB-231	0.312
BB-212	0.584	BB-232	0.267
BB-213	0.353	BB-233	0.557
BB-214	0.454	BB-234	0.370
BB-215	0.307	BB-235	0.301
BB-216	0.381	BB-236	0.194
BB-217	0.234	BB-237	0.373
BB-218	0.099	BB-238	0.972
BB-219	0.233	BB-239	0.465
BB-220	0.674	BB-240	1.011

Results are expressed in terms of optical density at wave length 492 nm.

Table 8 Antibodies to pyridine extracted Ag in 120 blood donors by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-301	0.320	BB-321	0.259
BB-302	0.123	BB-322	0.181
BB-303	2.224	BB-323	0.482
BB-304	0.396	BB-324	0.220
BB-305	1.166	BB-325	0.229
BB-306	0.235	BB-326	0.091
BB-307	0.377	BB-327	0.083
BB-308	0.399	BB-328	0.188
BB-309	0.605	BB-329	0.383
BB-310	0.314	BB-330	0.391
BB-311	0.233	BB-331	0.317
BB-312	0.384	BB-332	0.263
BB-313	0.302	BB-333	0.230
BB-314	0.459	BB-334	0.135
BB-315	0.262	BB-335	0.334
BB-316	0.760	BB-336	0.136
BB-317	0.323	BB-337	0.352
BB-318	0.377	BB-338	1.507
BB-319	0.172	BB-339	0.158
BB-320	1.449	BB-340	0.255

Results are expressed in terms of optical density at wave length 492 nm.

Table 9 Antibodies to pyridine extracted Ag by ELISA in 16 patients with smear positive and culture (negative, or contaminated).

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 2	1	C	TR	2.240
TB- 3	2	N	PT	0.501
TB- 15	1	C	TR	1.127
TB- 23	2	N	TR	1.388
TB- 60	1	N	TR	1.160
TB- 64	2	N	TR	1.322
TB- 68	1	N	NE	0.320
TB- 91	2	N	TR	1.700
TB- 98	2	N	NE	1.314
TB- 99	2	N	TR	0.537
TB-124	2	N	TR	1.101
TB-129	1	N	NE	0.380
TB-141	1	C	TR	1.409
TB-144	2	N	TR	0.702
TB-146	1	N	NE	0.882
TB-149	1	N	TR	1.153

N = No growth, C = Contaminated, NE = No treatment,

TR = On treatment, PT = Previous treatment.

Table 10 Antibodies to pyridine extracted Ag by ELISA in 14 patients with history of tuberculosis and returning for tuberculosis treatment.

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 1	2	+	PT	1.056
TB- 4	2	+	PT	0.703
TB- 20	1	+	PT	1.751
TB- 22	1	+	PT	0.803
TB- 28	1	+	PT	1.257
TB- 33	2	+	PT	1.113
TB- 34	1	+	PT	1.987
TB- 41	1	+	PT	2.240
TB- 47	2	+	PT	0.388
TB- 71	1	+	PT	2.240
TB-116	1	+	PT	1.740
TB-118	2	+	PT	1.740
TB-127	1	+	PT	1.635
TB-154	2	+	PT	1.740

Results are expressed in terms of optical density at wave length 492 nm.

Table 11 Antibodies to pyridine extracted Ag by ELISA in 31 tuberculosis patients with short period of treatment.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 12	3	+	TR	2.240	TB-107	1	+	TR	0.386
TB- 14	1	+	TR	0.728	TB-110	1	+	TR	1.278
TB- 16	2	+	TR	1.824	TB-114	2	+	TR	1.056
TB- 25	1	+	TR	1.295	TB-133	1	+	TR	1.181
TB- 42	1	+	TR	0.930	TB-134	2	+	TR	0.666
TB- 45	1	+	TR	0.472	TB-140	2	+	TR	1.442
TB- 51	1	+	TR	1.884	TB-142	3	+	TR	1.740
TB- 53	1	+	TR	2.144	TB-143	2	+	TR	1.740
TB- 57	2	+	TR	2.240	TB-150	2	+	TR	1.670
TB- 59	2	+	TR	1.524	TB-157	2	+	TR	0.740
TB- 61	1	+	TR	2.240	TB-159	2	+	TR	1.740
TB- 69	1	+	TR	1.532					
TB- 75	2	+	TR	1.618					
TB- 77	1	+	TR	1.116					
TB- 80	2	+	TR	1.112					
TB- 82	3	+	TR	0.821					
TB- 83	1	+	TR	1.740					
TB- 85	2	+	TR	1.708					
TB-100	2	+	TR	1.430					
TB-104	2	+	TR	1.740					

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, TR = On treatment.

Table 12 Antibodies to pyridine extracted Ag by ELISA in 60 newly diagnosed tuberculosis patients.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 5	1	+	NE	1.474	TB- 38	2	+	NE	1.384
TB- 6	1	+	NE	0.442	TB- 39	1	+	NE	0.852
TB- 7	2	+	NE	0.579	TB- 40	2	+	NE	0.582
TB- 8	2	+	NE	0.731	TB- 43	2	+	NE	2.240
TB- 9	1	+	NE	1.626	TB- 44	3	+	NE	2.240
TB- 10	1	+	NE	0.791	TB- 46	2	+	NE	1.447
TB- 13	1	+	NE	1.077	TB- 48	1	+	NE	2.240
TB- 17	1	+	NE	1.917	TB- 49	2	+	NE	1.533
TB- 18	2	+	NE	2.146	TB- 50	2	+	NE	1.286
TB- 19	1	+	NE	1.389	TB- 52	2	+	NE	1.437
TB- 21	1	+	NE	0.669	TB- 54	1	+	NE	2.240
TB- 24	2	+	NE	2.240	TB- 55	1	+	NE	2.240
TB- 26	1	+	NE	1.057	TB- 56	1	+	NE	0.146
TB- 27	2	+	NE	2.240	TB- 58	1	+	NE	0.767
TB- 29	2	+	NE	0.758	TB- 62	1	+	NE	2.240
TB- 31	1	+	NE	2.240	TB- 63	2	+	NE	2.240
TB- 32	1	+	NE	0.550	TB- 65	2	+	NE	0.492
TB- 35	2	+	NE	1.534	TB- 66	1	+	NE	0.612
TB- 36	2	+	NE	1.704	TB- 67	2	+	NE	2.240
TB- 37	1	+	NE	0.491	TB- 70	1	+	NE	2.202

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 12 Antibodies to pyridine extracted Ag by ELISA in 80 newly diagnosed tuberculosis patients (cont.).

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 72	2	+	NE	1.538	TB-102	2	+	NE	1.740
TB- 73	2	+	NE	2.240	TB-103	2	+	NE	1.740
TB- 74	2	+	NE	2.046	TB-105	1	+	NE	0.341
TB- 76	2	+	NE	0.491	TB-106	1	+	NE	1.507
TB- 78	2	+	NE	0.925	TB-108	2	+	NE	1.589
TB- 79	2	+	NE	1.880	TB-109	1	+	NE	1.201
TB- 81	3	+	NE	1.740	TB-111	2	+	NE	1.360
TB- 84	2	+	NE	1.126	TB-112	2	+	NE	1.740
TB- 85	1	+	NE	1.081	TB-113	2	+	NE	0.407
TB- 87	2	+	NE	1.319	TB-115	2	+	NE	0.859
TB- 88	1	+	NE	0.717	TB-117	2	+	NE	1.740
TB- 89	3	+	NE	1.740	TB-119	1	+	NE	1.740
TB- 90	2	+	NE	0.713	TB-120	1	+	NE	0.401
TB- 92	2	+	NE	1.868	TB-121	1	+	NE	1.540
TB- 93	2	+	NE	0.210	TB-122	1	+	NE	1.740
TB- 94	1	+	NE	1.174	TB-123	1	+	NE	1.434
TB- 95	1	+	NE	0.943	TB-125	2	+	NE	1.577
TB- 96	2	+	NE	1.632	TB-126	1	+	NE	0.399
TB- 97	2	+	NE	0.738	TB-128	2	+	NE	1.740
TB-101	2	+	NE	1.702	TB-130	1	+	NE	1.740

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 13 Antibodies to pyridine extracted AF in 73 leprosy patients by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
LEP- 41	1.223	LEP- 61	1.780
LEP- 42	0.114	LEP- 62	0.350
LEP- 43	0.533	LEP- 63	1.638
LEP- 44	1.306	LEP- 64	0.937
LEP- 45	0.396	LEP- 65	0.622
LEP- 46	0.182	LEP- 66	0.773
LEP- 47	0.181	LEP- 67	0.425
LEP- 48	0.630	LEP- 68	0.614
LEP- 49	0.743	LEP- 69	1.780
LEP- 50	0.245	LEP- 70	0.357
LEP- 51	1.780	LEP- 71	1.658
LEP- 52	0.395	LEP- 72	0.204
LEP- 53	0.910	LEP- 73	0.733
LEP- 54	0.515		
LEP- 55	0.382		
LEP- 56	0.588		
LEP- 57	0.701		
LEP- 58	0.159		
LEP- 59	0.368		
LEP- 60	0.386		

Results are expressed in terms of optical density at wave length 492 nm.

Table 14 Antibodies to pyridine extracted Ag by ELISA in 16 patients infected with atypical mycobacteria.

SPECIMEN Number	ELISA Value
AMI- 1	1.800
AMI- 2	1.747
AMI- 3	0.870
AMI- 4	0.610
AMI- 5	1.609
AMI- 6	1.651
AMI- 7	1.362
AMI- 8	1.800
AMI- 9	0.928
AMI- 10	1.287
AMI- 11	1.800
AMI- 12	0.134
AMI- 13	0.719
AMI- 14	0.176
AMI- 15	0.449
AMI- 16	0.270

Results are expressed in terms of optical density at wave length 492 nm.

Table 15 Antibodies to sonicated M.tuberculosis H37Rv in 120 blood donors by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-100	0.118	BB-120	0.077
BB-101	0.053	BB-121	0.068
BB-102	0.097	BB-122	0.147
BB-103	0.101	BB-123	0.083
BB-104	0.183	BB-124	0.049
BB-105	0.185	BB-125	0.100
BB-106	0.386	BB-126	0.077
BB-107	0.041	BB-127	0.131
BB-108	0.050	BB-128	0.091
BB-109	0.484	BB-129	0.101
BB-110	0.178	BB-130	0.184
BB-111	0.084	BB-131	0.133
BB-112	0.063	BB-132	0.046
BB-113	0.088	BB-133	0.074
BB-114	0.062	BB-134	0.103
BB-115	0.050	BB-135	0.095
BB-116	0.233	BB-136	0.108
BB-117	0.084	BB-137	0.074
BB-118	0.114	BB-138	0.072
BB-119	0.091	BB-139	0.122

Results are expressed in terms of optical density at wave length 492 nm.

Table 15 Antibodies to sonicated *M. tuberculosis* H37Rv in 120 blood donors by ELISA [cont.].

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-201	0.092	BB-221	0.098
BB-202	0.106	BB-222	0.092
BB-203	0.106	BB-223	0.126
BB-204	0.098	BB-224	0.150
BB-205	0.193	BB-225	0.109
BB-206	0.098	BB-226	0.143
BB-207	0.144	BB-227	0.141
BB-208	0.087	BB-228	0.206
BB-209	0.078	BB-229	0.132
BB-210	0.173	BB-230	0.211
BB-211	0.081	BB-231	0.099
BB-212	0.270	BB-232	0.122
BB-213	0.199	BB-233	0.272
BB-214	0.108	BB-234	0.145
BB-215	0.090	BB-235	0.112
BB-216	0.130	BB-236	0.066
BB-217	0.156	BB-237	0.090
BB-218	0.140	BB-238	0.096
BB-219	0.125	BB-239	0.201
BB-220	0.149	BB-240	0.106

Results are expressed in terms of optical density at wave length 492 nm

Table 15 Antibodies to sonicated *M.tuberculosis* H37Rv in 120 blood donors by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-301	0.166	BB-321	0.221
BB-302	0.133	BB-322	0.093
BB-303	0.142	BB-323	0.155
BB-304	0.265	BB-324	0.254
BB-305	0.097	BB-325	0.162
BB-306	0.174	BB-326	0.102
BB-307	0.121	BB-327	0.110
BB-308	0.106	BB-328	0.080
BB-309	0.217	BB-329	0.087
BB-310	0.155	BB-330	0.115
BB-311	0.114	BB-331	0.150
BB-312	0.168	BB-332	0.112
BB-313	0.102	BB-333	0.113
BB-314	0.102	BB-334	0.138
BB-315	0.118	BB-335	0.151
BB-316	0.230	BB-336	0.153
BB-317	0.137	BB-337	0.096
BB-318	0.172	BB-338	0.162
BB-319	0.115	BB-339	0.177
BB-320	0.098	BB-340	0.118

Results are expressed in terms of optical density at wave length 492 nm

Table 16 Antibodies to sonicated *M.tuberculosis* H37Rv by ELISA in 18 patients with smear positive and culture (negative, or contaminated).

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 2	1	C	TR	1.188
TB- 3	2	N	PT	0.320
TB- 15	1	C	TR	0.222
TB- 23	2	N	TR	0.289
TB- 60	1	N	TR	0.319
TB- 64	2	N	TR	0.650
TB- 68	1	N	NE	0.079
TB- 91	2	N	TR	0.331
TB- 98	2	N	NE	0.363
TB- 99	2	N	TR	0.171
TB-124	2	N	TR	0.331
TB-129	1	N	NE	0.082
TB-135	U	U	U	0.249
TB-141	1	C	TR	0.596
TB-144	2	N	TR	0.182
TB-146	1	N	NE	0.285
TB-149	1	N	TR	0.857
TB-160	3	U	NE	0.543

Results are expressed in terms of optical density at wave length 492 nm.

N = No growth, C = Contaminated, NE = No treatment, TR = On treatment, PT = Previous treatment, U = Unknown.

Table 17 Antibodies to sonicated M.tuberculosis H37Rv by ELISA in 31 tuberculosis patients with short period of treatment.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 12	3	+	TR	0.288	TB-107	1	+	TR	0.182
TB- 14	1	+	TR	0.377	TB-110	1	+	TR	0.762
TB- 16	2	+	TR	0.564	TB-114	2	+	TR	0.204
TB- 25	1	+	TR	0.275	TB-133	1	+	TR	0.347
TB- 42	1	+	TR	0.192	TB-134	2	+	TR	0.269
TB- 45	1	+	TR	0.254	TB-140	2	+	TR	0.418
TB- 51	1	+	TR	0.290	TB-142	3	+	TR	0.830
TB- 53	1	+	TR	0.642	TB-143	2	+	TR	0.858
TB- 57	2	+	TR	0.615	TB-150	2	+	TR	0.351
TB- 59	2	+	TR	0.392	TB-157	2	+	TR	0.145
TB- 61	1	+	TR	0.474	TB-159	2	+	TR	1.551
TB- 69	1	+	TR	0.196					
TB- 75	2	+	TR	0.293					
TB- 77	1	+	TR	0.254					
TB- 80	2	+	TR	0.536					
TB- 82	3	+	TR	0.143					
TB- 83	1	+	TR	0.627					
TB- 86	2	+	TR	0.468					
TB-100	2	+	TR	0.255					
TB-104	2	+	TR	1.162					

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, TR = On treatment.

Table 18 Antibodies to sonicated M.tuberculosis H37Rv by ELISA in 80 newly diagnosed tuberculosis patients.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 5	1	+	NE	0.371	TB- 38	2	+	NE	0.417
TB- 6	1	+	NE	0.161	TB- 39	1	+	NE	0.311
TB- 7	2	+	NE	0.128	TB- 40	2	+	NE	0.169
TB- 8	2	+	NE	0.155	TB- 4[illegible]	[illegible]	+	NE	1.369
TB- 9	1	+	NE	0.285	TB- [illegible]	[illegible]	+	NE	1.395
TB- 10	1	+	NE	0.058	TB- 46	2	+	NE	0.330
TB- 13	1	+	NE	0.182	TB- 48	1	+	NE	0.738
TB- 17	1	+	NE	0.327	TB- 49	2	+	NE	0.109
TB- 18	2	+	NE	0.621	TB- 50	2	+	NE	0.264
TB- 19	1	+	NE	0.387	TB- 52	2	+	NE	0.286
TB- 21	1	+	NE	0.278	TB- 54	1	+	NE	1.262
TB- 24	2	+	NE	0.676	TB- 55	1	+	NE	0.557
TB- 26	1	+	NE	0.129	TB- 56	1	+	NE	0.148
TB- 27	2	+	NE	0.733	TB- 58	1	+	NE	0.219
TB- 29	2	+	NE	0.388	TB- 62	1	+	NE	1.106
TB- 31	1	+	NE	0.224	TB- 63	2	+	NE	0.549
TB- 32	1	+	NE	0.176	TB- 65	2	+	NE	0.100
TB- 35	2	+	NE	0.156	TB- 66	1	+	NE	0.177
TB- 36	2	+	NE	0.425	TB- 67	2	+	NE	0.432
TB- 37	1	+	NE	0.211	TB- 70	1	+	NE	0.715

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 18 Antibodies to sonicated M tuberculosis H37Rv by ELISA in 80 newly diagnosed tuberculosis patients (cont.)

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 72	2	+	NE	0.618	TB-102	2	+	NE	0.847
TB- 73	2	+	NE	0.692	TB-103	2	+	NE	0.820
TB- 74	2	+	NE	0.910	TB-105	1	+	NE	0.137
TB- 76	2	+	NE	0.099	TB-106	1	+	NE	0.249
TB- 78	2	+	NE	0.205	TB-108	2	+	NE	0.559
TB- 79	2	+	NE	0.314	TB-109	1	+	NE	0.202
TB- 81	3	+	NE	0.311	TB-111	2	+	NE	0.543
TB- 84	2	+	NE	0.469	TB-112	2	+	NE	0.840
TB- 85	1	+	NE	0.332	TB-113	2	+	NE	0.142
TB- 87	2	+	NE	0.274	TB-115	2	+	NE	0.165
TB- 88	1	+	NE	0.167	TB-117	2	+	NE	0.696
TB- 89	3	+	NE	0.642	TB-119	1	+	NE	0.571
TB- 90	2	+	NE	0.591	TB-120	1	+	NE	0.196
TB- 92	2	+	NE	0.403	TB-121	1	+	NE	0.462
TB- 93	2	+	NE	0.083	TB-122	1	+	NE	0.919
TB- 94	1	+	NE	0.396	TB-123	1	+	NE	0.299
TB- 95	1	+	NE	0.237	TB-125	2	+	NE	0.288
TB- 96	2	+	NE	0.367	TB-126	1	+	NE	0.194
TB- 97	2	+	NE	0.350	TB-128	2	+	NE	0.474
TB-101	2	+	NE	0.385	TB-130	1	+	NE	0.599

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 19 Antibodies to sonicated M. tuberculosis H37Rv by ELISA in 14 patients with history of tuberculosis and returning for tuberculosis treatment.

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 1	2	+	PT	0.150
TB- 4	2	+	PT	0.162
TB- 20	1	+	PT	0.150
TB- 22	1	+	PT	0.238
TB- 28	1	+	PT	0.239
TB- 33	2	+	PT	0.115
TB- 34	1	+	PT	0.640
TB- 41	1	+	PT	0.526
TB- 47	2	+	PT	0.094
TB- 71	1	+	PT	0.780
TB-116	1	+	PT	0.387
TB-118	2	+	PT	0.734
TB-127	1	+	PT	0.389
TB-154	2	+	PT	0.661

Results are expressed in terms of optical density at wave length 492 nm.

Table 20 Antibodies to culture filtrate antigen in 120 blood donors by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-100	0.105	BB-120	0.129
BB-101	0.119	BB-121	0.092
BB-102	0.100	BB-122	0.146
BB-103	0.122	BB-123	0.170
BB-104	0.405	BB-124	0.061
BB-105	0.174	BB-125	0.163
BB-106	0.243	BB-126	0.124
BB-107	0.057	BB-127	0.299
BB-108	0.123	BB-128	0.154
BB-109	0.108	BB-129	0.116
BB-110	0.286	BB-130	0.134
BB-111	0.225	BB-131	0.081
BB-112	0.103	BB-132	0.081
BB-113	0.189	BB-133	0.101
BB-114	0.136	BB-134	0.143
BB-115	0.142	BB-135	0.063
BB-116	0.983	BB-136	0.164
BB-117	0.137	BB-137	0.093
BB-118	0.165	BB-138	0.123
BB-119	0.142	BB-139	0.069

Results are expressed in terms of optical density at wave length 492.

Table 20 Antibodies to culture filtrate antigen in 120 blood donors by ELISA [cont.].

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-201	0.037	BB-221	0.046
BB-202	0.064	BB-222	0.052
BB-203	0.036	BB-223	[illegible]
BB-204	0.241	BB-224	0.153
BB-205	0.058	BB-225	0.055
BB-206	0.056	BB-226	0.097
BB-207	0.038	BB-227	0.119
BB-208	0.017	BB-228	0.117
BB-209	0.058	BB-229	0.058
BB-210	0.035	BB-230	0.053
BB-211	0.192	BB-231	0.085
BB-212	0.107	BB-232	0.020
BB-213	0.044	BB-233	0.086
BB-214	0.068	BB-234	0.062
BB-215	0.026	BB-235	0 4
BB-216	0.101	BB-236	.048
BB-217	0.125	BB-237	0.056
BB-218	0.021	BB-238	0.301
BB-219	0.049	BB-239	0.131
BB-220	0.168	BB-240	0.278

Results are expressed in terms of optical density at wave length 492 nm.

Table 20 Antibodies to culture filtrate antigen in 120 blood donors by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-301	0.035	BB-321	0.064
BB-302	0.019	BB-322	0.054
BB-303	0.508	BB-323	0.078
BB-304	0.084	BB-324	0.051
BB-305	0.375	BB-325	0.066
BB-306	0.026	BB-326	0.029
BB-307	0.053	BB-327	0.026
BB-308	0.071	BB-328	0.056
BB-309	0.078	BB-329	0.096
BB-310	0.025	BB-330	0.198
BB-311	0.030	BB-331	0.069
BB-312	0.076	BB-332	0.089
BB-313	0.080	BB-333	0.059
BB-314	0.057	BB-334	0.026
BB-315	0.040	BB-335	0.057
BB-316	0.344	BB-336	0.038
BB-317	0.075	BB-337	0.131
BB-318	0.071	BB-338	0.341
BB-319	0.049	BB-339	0.029
BB-320	0.324	BB-340	0.098

Results are expressed in terms of optical density at wave length 492 nm.

Table 21 Antibodies to culture filtrate antigen by ELISA in 16 patients infected with atypical mycobacteria.

SPECIMEN	ELISA
AMI- 1	1.066
AMI- 2	1.566
AMI- 3	0.531
AMI- 4	0.287
AMI- 5	0.734
AMI- 6	1.363
AMI- 7	0.591
AMI- 8	1.780
AMI- 9	0.595
AMI- 10	0.847
AMI- 11	1.508
AMI- 12	0.087
AMI- 13	0.446
AMI- 14	0.117
AMI- 15	0.132
AMI- 16	0.071

Results are expressed in terms of optical density at wave length 492 nm.

Table 22 Antibodies to culture filtrate antigen in 73 leprosy patients by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
LEP- 1	0.862	LEP- 21	0.371
LEP- 2	0.492	LEP- 22	0.644
LEP- 3	1.876	LEP- 23	1.506
LEP- 4	1.876	LEP- 24	0.630
LEP- 5	1.876	LEP- 25	0.613
LEP- 6	0.542	LEP- 26	1.438
LEP- 7	0.976	LEP- 27	0.846
LEP- 8	1.338	LEP- 28	0.068
LEP- 9	0.693	LEP- 29	0.592
LEP- 10	0.774	LEP- 30	1.876
LEP- 11	1.876	LEP- 31	0.512
LEP- 12	0.601	LEP- 32	0.731
LEP- 13	1.345	LEP- 33	1.196
LEP- 14	1.876	LEP- 34	0.451
LEP- 15	1.876	LEP- 35	0.418
LEP- 16	0.350	LEP- 36	1.305
LEP- 17	1.356	LEP- 37	1.049
LEP- 18	0.835	LEP- 38	0.729
LEP- 19	0.970	LEP- 39	1.787
LEP- 20	1.257	LEP- 40	1.083

Results are expressed in terms of optical density at wave length 492 nm.

Table 22 Antibodies to culture filtrate antigen in 73 leprosy patients by ELISA [cont.].

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
LEP- 41	0.536	LEP- 61	1.002
LEP- 42	0.079	LEP- 62	0.239
LEP- 43	0.362	LEP- 63	0.922
LEP- 44	0.844	LEP- 64	0.472
LEP- 45	0.171	LEP- 65	0.285
LEP- 46	0.127	LEP- 66	0.205
LEP- 47	0.077	LEP- 67	0.220
LEP- 48	0.431	LEP- 68	0.308
LEP- 49	0.195	LEP- 69	0.644
LEP- 50	0.084	LEP- 70	0.250
LEP- 51	0.944	LEP- 71	0.798
LEP- 52	0.189	LEP- 72	0.205
LEP- 53	0.257	LEP- 73	0.388
LEP- 54	0.363		
LEP- 55	0.252		
LEP- 56	0.423		
LEP- 57	0.342		
LEP- 58	0.103		
LEP- 59	0.178		
LEP- 60	0.189		

Results are expressed in terms of optical density at wave lengeh 492 nm.

Table 23 Antibodies to culture filtrate antigen by ELISA in 18 patients with smear positive and culture (negative or contaminated).

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 2	1	C	TR	1.509
TB- 3	2	N	PT	0.144
TB- 15	1	C	TR	0.267
TB- 23	2	N	TR	0.461
TB- 60	1	N	TR	0.532
TB- 64	2	N	TR	0.447
TB- 68	1	N	NE	0.029
TB- 91	2	N	TR	0.973
TB- 98	2	N	NE	1.366
TB- 99	2	N	TR	0.141
TB-124	2	N	TR	0.380
TB-129	1	N	NE	0.150
TB-135	U	U	U	0.444
TB-141	1	C	TR	1.108
TB-144	2	N	TR	0.526
TB-146	1	N	NE	0.350
TB-149	1	N	TR	0.824
TB-160	3	U	NE	0.971

Results are expressed in terms of optical density at wave length 492 nm.

N = No growth, C = Contaminated, NE = No treatment, TR = On treatment, PT = Previous treatment, U = Unknown.

Table 24 Antibodies to culture filtrate antigen by ELISA in 14 patients with history of tuberculosis and returning for tuberculosis treatment.

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 1	2	+	PT	0.356
TB- 4	2	+	PT	0.534
TB- 20	1	+	PT	0.193
TB- 22	1	+	PT	0.211
TB- 28	1	+	PT	0.905
TB- 33	2	+	PT	0.312
TB- 34	1	+	PT	0.651
TB- 41	1	+	PT	1.224
TB- 47	2	+	PT	0.090
TB- 71	1	+	PT	0.969
TB-116	1	+	PT	0.564
TB-118	2	+	PT	0.678
TB-127	1	+	PT	0.616
TB-154	2	+	PT	2.085

Results are expressed in terms of optical density at wave length 492 nm.

Table 25 Antibodies to culture filtrate antigen by ELISA in 31 tuberculosis patients with short period of treatment.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 12	3	+	TR	0.755	TB-107	1	+	TR	0.147
TB- 14	1	+	TR	0.151	TB-110	1	+	TR	0.489
TB- 16	2	+	TR	1.076	TB-114	2	+	TR	0.090
TB- 25	1	+	TR	0.484	TB-133	1	+	TR	0.444
TB- 42	1	+	TR	0.202	TB-134	2	+	TR	0.167
TB- 45	1	+	TR	0.220	TB-140	2	+	TR	0.705
TB- 51	1	+	TR	0.693	TB-142	3	+	TR	2.344
TB- 53	1	+	TR	1.305	TB-143	2	+	TR	2.177
TB- 57	2	+	TR	1.110	TB-150	2	+	TR	0.882
TB- 59	2	+	TR	1.464	TB-157	2	+	TR	0.400
TB- 61	1	+	TR	1.583	TB-159	2	+	TR	3.028
TB- 69	1	+	TR	0.215					
TB- 75	2	+	TR	0.641					
TB- 77	1	+	TR	0.711					
TB- 80	2	+	TR	0.865					
TB- 82	3	+	TR	0.350					
TB- 83	1	+	TR	1.889					
TB- 86	2	+	TR	1.601					
TB-100	2	+	TR	0.529					
TB-104	2	+	TR	2.400					

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, TR = On treatment.

Table 26 Antibodies to culture filtrate antigen by ELISA in 80 newly diagnosed tuberculosis patients.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 5	1	+	NE	0.840	TB- 38	2	+	NE	0.703
TB- 6	1	+	NE	0.113	TB- 39	1	+	NE	0.129
TB- 7	2	+	NE	0.159	TB- 40	2	+	NE	0.338
TB- 8	2	+	NE	0.224	TB- 43	2	+	NE	1.250
TB- 9	1	+	NE	0.326	TB- 44	3	+	NE	1.607
TB- 10	1	+	NE	0.117	TB- 46	2	+	NE	0.595
TB- 13	1	+	NE	0.527	TB- 48	1	+	NE	1.892
TB- 17	1	+	NE	0.841	TB- 49	2	+	NE	0.153
TB- 18	2	+	NE	0.903	TB- 50	2	+	NE	0.345
TB- 19	1	+	NE	0.480	TB- 52	2	+	NE	0.870
TB- 21	1	+	NE	0.340	TB- 54	1	+	NE	1.491
TB- 24	2	+	NE	1.172	TB- 55	1	+	NE	1.417
TB- 26	1	+	NE	0.248	TB- 56	1	+	NE	0.076
TB- 27	2	+	NE	1.185	TB- 58	1	+	NE	0.278
TB- 29	2	+	NE	0.250	TB- 62	1	+	NE	1.721
TB- 31	1	+	NE	0.637	TB- 63	2	+	NE	1.050
TB- 32	1	+	NE	0.257	TB- 65	2	+	NE	0.101
TB- 35	2	+	NE	0.304	TB- 66	1	+	NE	0.306
TB- 36	2	+	NE	0.840	TB- 67	2	+	NE	0.809
TB- 37	1	+	NE	0.179	TB- 70	1	+	NE	1.741

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 26 Antibodies to culture filtrate antigen by ELISA in 80 newly diagnosed tuberculosis patients [cont.].

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 72	2	+	NE	0.431	TB-102	2	+	NE	2.128
TB- 73	2	+	NE	1.408	TB-103	2	+	NE	2.462
TB- 74	2	+	NE	1.060	TB-105	1	+	NE	0.091
TB- 76	2	+	NE	0.118	TB-106	1	+	NE	0.365
TB- 78	2	+	NE	0.462	TB-108	2	+	NE	0.500
TB- 79	2	+	NE	0.705	TB-109	1	+	NE	0.482
TB- 81	3	+	NE	1.322	TB-111	2	+	NE	1.050
TB- 84	2	+	NE	0.678	TB-112	2	+	NE	2.123
TB- 85	1	+	NE	0.403	TB-113	2	+	NE	0.070
TB- 87	2	+	NE	0.582	TB-115	2	+	NE	0.312
TB- 88	1	+	NE	0.185	TB-117	2	+	NE	1.631
TB- 89	3	+	NE	2.315	TB-119	1	+	NE	2.008
TB- 90	2	+	NE	0.377	TB-120	1	+	NE	0.313
TB- 92	2	+	NE	0.625	TB-121	1	+	NE	0.657
TB- 93	2	+	NE	0.081	TB-122	1	+	NE	1.567
TB- 94	1	+	NE	0.340	TB-123	1	+	NE	0.299
TB- 95	1	+	NE	0.119	TB-125	2	+	NE	0.585
TB- 96	2	+	NE	0.420	TB-126	1	+	NE	0.272
TB- 97	2	+	NE	0.357	TB-128	2	+	NE	1.362
TB-101	2	+	NE	0.511	TB-130	1	+	NE	2.186

Results are expressed in terms of optical density at wave length length 492 nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 27 Antibodies to lipid Ag from local isolated *M.tuberculosis* in 120 blood donors by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-100	0.175	BB-120	0.143
BB-101	0.186	BB-121	0.325
BB-102	0.110	BB-122	0.223
BB-103	0.196	BB-123	0.204
BB-104	0.350	BB-124	0.122
BB-105	0.167	BB-125	0.215
BB-106	0.192	BB-126	0.187
BB-107	0.172	BB-127	0.164
BB-108	0.133	BB-128	0.379
BB-109	0.186	BB-129	0.228
BB-110	0.271	BB-130	1.050
BB-111	0.342	BB-131	0.123
BB-112	0.194	BB-132	0.234
BB-113	0.207	BB-133	0.197
BB-114	0.145	BB-134	0.150
BB-115	0.252	BB-135	0.318
BB-116	0.770	BB-136	0.184
BB-117	0.160	BB-137	0.310
BB-118	0.181	BB-138	0.375
BB-119	0.171	BB-139	0.211

Results are expressed in terms of optical density at wave length 492 nm.

Table 27 Antibodies to lipid Ag from local isolated *M.tuberculosis* in 120 blood donors by ELISA [cont.].

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-201	0.148	BB-221	0.260
BB-202	0.160	BB-222	0.184
BB-203	0.184	BB-223	0.196
BB-204	0.241	BB-224	0.227
BB-205	0.306	BB-225	0.245
BB-206	0.392	BB-226	0.418
BB-207	0.161	BB-227	0.506
BB-208	0.073	BB-228	0.391
BB-209	0.192	BB-229	0.253
BB-210	0.137	BB-230	0.204
BB-211	0.398	BB-231	0.306
BB-212	0.510	BB-232	0.256
BB-213	0.166	BB-233	0.473
BB-214	0.418	BB-234	0.235
BB-215	0.139	BB-235	0.598
BB-216	0.146	BB-236	0.194
BB-217	0.190	BB-237	0.877
BB-218	0.182	BB-238	0.274
BB-219	0.209	BB-239	0.224
BB-220	0.257	BB-240	0.330

Results are expressed in terms of optical density at wave length 492 nm.

Table 27 Antibodies to lipid AG from local isolated M.tuberculosis in 120 blood donors by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-301	0.277	BB-321	0.258
BB-302	0.134	BB-322	0.143
BB-303	0.428	BB-323	0.181
BB-304	0.319	BB-324	0.157
BB-305	0.299	BB-325	0.206
BB-306	0.181	BB-326	0.158
BB-307	0.278	BB-327	0.139
BB-308	0.275	BB-328	0.167
BB-309	0.334	BB-329	0.208
BB-310	0.314	BB-330	0.330
BB-311	0.137	BB-331	0.178
BB-312	0.270	BB-332	0.202
BB-313	0.259	BB-333	0.127
BB-314	0.164	BB-334	0.150
BB-315	0.182	BB-335	0.312
BB-316	0.386	BB-336	0.206
BB-317	0.274	BB-337	0.408
BB-318	0.245	BB-338	0.238
BB-319	0.397	BB-339	0.240
BB-320	0.662	BB-340	0.181

Results are expressed in terms of optical density at wave length 492 nm.

Table 28 Antibodies to lipid Ag from local isolated M.tuberculosis in 73 leprosy patients by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
LEP- 1	1.025	LEP- 21	0.955
LEP- 2	0.532	LEP- 22	0.921
LEP- 3	1.700	LEP- 23	1.157
LEP- 4	1.700	LEP- 24	0.768
LEP- 5	1.700	LEP- 25	0.570
LEP- 6	0.666	LEP- 26	1.700
LEP- 7	1.023	LEP- 27	1.335
LEP- 8	1.057	LEP- 28	0.208
LEP- 9	0.867	LEP- 29	0.269
LEP- 10	1.433	LEP- 30	1.700
LEP- 11	1.700	LEP- 31	1.149
LEP- 12	0.654	LEP- 32	0.690
LEP- 13	1.700	LEP- 33	1.130
LEP- 14	1.700	LEP- 34	0.811
LEP- 15	1.491	LEP- 35	0.858
LEP- 16	0.870	LEP- 36	1.348
LEP- 17	1.255	LEP- 37	0.538
LEP- 18	1.352	LEP- 38	0.590
LEP- 19	0.930	LEP- 39	1.166
LEP- 20	1.482	LEP- 40	1.160

Results are expressed in terms of optical density at wave length 492 nm.

Table 28 Antibodies to lipid Ag from local isolated *M.tuberculosis* in 73 leprosy patients by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
LEP- 41	0.715	LEP- 61	0.744
LEP- 42	0.238	LEP- 62	0.198
LEP- 43	0.518	LEP- 63	0.907
LEP- 44	0.353	LEP- 64	0.596
LEP- 45	0.228	LEP- 65	0.433
LEP- 46	0.184	LEP- 66	0.286
LEP- 47	0.115	LEP- 67	0.639
LEP- 48	0.245	LEP- 68	0.499
LEP- 49	0.177	LEP- 69	0.378
LEP- 50	0.138	LEP- 70	0.307
LEP- 51	1.012	LEP- 71	0.799
LEP- 52	0.232	LEP- 72	0.239
LEP- 53	0.542	LEP- 73	0.501
LEP- 54	0.569		
LEP- 55	0.277		
LEP- 56	0.233		
LEP- 57	0.150		
LEP- 58	0.156		
LEP- 59	0.167		
LEP- 60	0.293		

Results are expressed in terms of optical density at wave length 492 nm.

Table 29 Antibodies to lipid Ag from local isolated *M.tuberculosis* by ELISA in 18 patients with smear positive and culture (negative or contaminated).

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 2	1	C	TR	1.971
TB- 3	2	N	PT	0.339
TB- 15	1	C	TR	0.416
TB- 23	2	N	TR	0.828
TB- 60	1	N	TR	0.829
TB- 64	2	N	TR	0.494
TB- 88	1	N	NE	0.179
TB- 91	2	N	TR	0.899
TB- 98	2	N	NE	0.913
TB- 99	2	N	TR	0.573
TB-124	2	N	TR	0.776
TB-129	1	N	NE	0.315
TB-135	U	U	U	1.504
TB-141	1	C	TR	1.276
TB-144	2	N	TR	0.522
TB-146	1	N	NE	1.759
TB-149	1	N	TR	0.657
TB-160	3	U	NE	0.808

Results are expressed in terms of optical density at wave length 492 nm.

N = No growth, C = Contaminated, NE = No treatment, TR = On treatment, PT = Previous treatment, U = Unknown.

Table 30 Antibodies to lipid Ag from local isolated M.tuberculosis by ELISA in 14 patients with history of tuberculosis and returning for tuberculosis treatment.

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 1	2	+	PT	0.312
TB- 4	2	+	PT	0.711
TB- 20	1	+	PT	0.286
TB- 22	1	+	PT	0.588
TB- 28	1	+	PT	0.672
TB- 33	2	+	PT	1.011
TB- 34	1	+	PT	1.161
TB- 41	1	+	PT	1.314
TB- 47	2	+	PT	0.158
TB- 71	1	+	PT	1.551
TB-116	1	+	PT	1.139
TB-118	2	+	PT	1.579
TB-127	1	+	PT	0.842
TB-154	2	+	PT	1.110

Results are expressed in terms of optical density at wave length 492 nm.

Table 31 Antibodies to lipid Ag from local isolated *M.tuberculosis* by ELISA in 31 tuberculosis patients with short period of treatment.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 12	3	+	TR	0.324	TB-107	1	+	TR	0.239
TB- 14	1	+	TR	0.699	TB-110	1	+	TR	0.449
TB- 16	2	+	TR	0.929	TB-114	2	+	TR	0.533
TB- 25	1	+	TR	0.502	TB-133	1	+	TR	1.489
TB- 42	1	+	TR	0.442	TB-134	2	+	TR	0.428
TB- 45	1	+	TR	0.320	TB-140	2	+	TR	0.987
TB- 51	1	+	TR	1.455	TB-142	3	+	TR	1.408
TB- 53	1	+	TR	1.421	TB-143	2	+	TR	0.528
TB- 57	2	+	TR	1.464	TB-150	2	+	TR	0.878
TB- 59	2	+	TR	0.666	TB-157	2	+	TR	0.394
TB- 61	1	+	TR	1.002	TB-159	2	+	TR	1.389
TB- 69	1	+	TR	0.662					
TB- 75	2	+	TR	1.145					
TB- 77	1	+	TR	0.570					
TB- 80	2	+	TR	0.994					
TB- 82	3	+	TR	0.470					
TB- 83	1	+	TR	1.191					
TB- 86	2	+	TR	1.451					
TB-100	2	+	TR	1.120					
TB-104	2	+	TR	1.492					

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, TR = On treatment.

Table 32 Antibodies to lipid Ag from local isolated M.tuberculosis by ELISA in 80 newly diagnosed tuberculosis patients.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 5	1	+	NE	0.989	TB- 38	2	+	NE	1.741
TB- 6	1	+	NE	0.212	TB- 39	1	+	NE	0.291
TB- 7	2	+	NE	0.374	TB- 40	2	+	NE	0.968
TB- 8	2	+	NE	0.290	TB- 43	2	+	NE	2.500
TB- 9	1	+	NE	0.375	TB- 44	3	+	NE	2.291
TB- 10	1	+	NE	0.089	TB- 46	2	+	NE	0.625
TB- 13	1	+	NE	0.754	TB- 48	1	+	NE	1.575
TB- 17	1	+	NE	1.030	TB- 49	2	+	NE	0.292
TB- 18	2	+	NE	1.949	TB- 50	2	+	NE	0.644
TB- 19	1	+	NE	0.570	TB- 52	2	+	NE	1.684
TB- 21	1	+	NE	0.576	TB- 54	1	+	NE	1.594
TB- 24	2	+	NE	1.593	TB- 55	1	+	NE	2.198
TB- 26	1	+	NE	0.354	TB- 56	1	+	NE	0.142
TB- 27	2	+	NE	1.250	TB- 58	1	+	NE	0.246
TB- 29	2	+	NE	0.809	TB- 62	1	+	NE	1.438
TB- 31	1	+	NE	0.431	TB- 63	2	+	NE	2.408
TB- 32	1	+	NE	0.436	TB- 65	2	+	NE	0.402
TB- 35	2	+	NE	1.169	TB- 66	1	+	NE	0.268
TB- 36	2	+	NE	0.945	TB- 67	2	+	NE	1.385
TB- 37	1	+	NE	0.491	TB- 70	1	+	NE	2.226

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 32 Antibodies to lipid Ag from local isolated M.tuberculosis by ELISA in 80 newly diagnosed tuberculosis patients [cont.].

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMENS	SM.	CU.	TR.	ELISA
TB- 72	2	+	NE	0.646	TB-102	2	+	NE	0.765
TB- 73	2	+	NE	1.628	TB-103	2	+	NE	1.800
TB- 74	2	+	NE	1.875	TB-105	1	+	NE	0.177
TB- 76	2	+	NE	0.159	TB-106	1	+	NE	0.425
TB- 78	2	+	NE	0.459	TB-108	2	+	NE	0.452
TB- 79	2	+	NE	1.071	TB-109	1	+	NE	1.033
TB- 81	3	+	NE	0.425	TB-111	2	+	NE	1.800
TB- 84	2	+	NE	1.619	TB-112	2	+	NE	1.333
TB- 85	1	+	NE	0.417	TB-113	2	+	NE	0.220
TB- 87	2	+	NE	0.361	TB-115	2	+	NE	0.687
TB- 88	1	+	NE	1.263	TB-117	2	+	NE	0.903
TB- 89	3	+	NE	1.001	TB-119	1	+	NE	1.800
TB- 90	2	+	NE	1.066	TB-120	1	+	NE	0.295
TB- 92	2	+	NE	0.957	TB-121	1	+	NE	1.800
TB- 93	2	+	NE	0.339	TB-122	1	+	NE	0.358
TB- 94	1	+	NE	0.848	TB-123	1	+	NE	0.621
TB- 95	1	+	NE	0.168	TB-125	2	+	NE	0.365
TB- 96	2	+	NE	1.617	TB-126	1	+	NE	0.266
TB- 97	2	+	NE	0.375	TB-128	2	+	NE	0.944
TB-101	2	+	NE	0.938	TB-130	1	+	NE	1.664

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 33 Antibodies to lipid Ag from M.tuberculosis H37Rv in 120 blood donors by ELISA.

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-100	0.000	BB-120	0.000
BB-101	0.002	BB-121	0.035
BB-102	0.000	BB-122	0.064
BB-103	0.000	BB-123	0.054
BB-104	0.096	BB-124	0.000
BB-105	0.010	BB-125	0.000
BB-106	0.037	BB-126	0.000
BB-107	0.000	BB-127	0.000
BB-108	0.000	BB-128	0.000
BB-109	0.000	BB-129	0.000
BB-110	0.005	BB-130	0.313
BB-111	0.046	BB-131	0.000
BB-112	0.000	BB-132	0.000
BB-113	0.000	BB-133	0.005
BB-114	0.000	BB-134	0.000
BB-115	0.041	BB-135	0.000
BB-116	0.266	BB-136	0.000
BB-117	0.000	BB-137	0.000
BB-118	0.000	BB-138	0.067
BB-119	0.000	BB-139	0.072

Results are expressed in terms of optical density at wave length 492 nm.

Table 33 Antibodies to Lipid Ar from M.tuberculosis H37Rv in 120 blood donors by ELISA (cont.).

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-201	0.000	BB-221	0.000
BB-202	0.000	BB-222	0.000
BB-203	0.000	BB-223	0.000
BB-204	0.000	BB-224	0.000
BB-205	0.000	BB-225	0.000
BB-206	0.000	BB-226	0.000
BB-207	0.000	BB-227	0.011
BB-208	0.000	BB-228	0.000
BB-209	0.000	BB-229	0.000
BB-210	0.000	BB-230	0.000
BB-211	0.000	BB-231	0.000
BB-212	0.014	BB-232	0.000
BB-213	0.000	BB-233	0.000
BB-214	0.007	BB-234	0.000
BB-215	0.000	BB-235	0.004
BB-216	0.000	BB-236	0.000
BB-217	0.000	BB-237	0.009
BB-218	0.000	BB-238	0.000
BB-219	0.000	BB-239	0.000
BB-220	0.000	BB-240	0.000

Results are expressed in terms of optical density at wave length 492 nm.

Table 33 Antibodies to lipid Ag from M.tuberculosis H37Rv in 120 blood donors by ELISA [cont.].

SPECIMEN Number	ELISA Value	SPECIMEN Number	ELISA Value
BB-301	0.024	BB-321	0.021
BB-302	0.001	BB-322	0.000
BB-303	0.000	BB-323	0.000
BB-304	0.044	BB-324	0.000
BB-305	0.001	BB-325	0.045
BB-306	0.000	BB-326	0.024
BB-307	0.000	BB-327	0.000
BB-308	0.018	BB-328	0.000
BB-309	0.044	BB-329	0.000
BB-310	0.000	BB-330	0.000
BB-311	0.000	BB-331	0.000
BB-312	0.000	BB-332	0.000
BB-313	0.000	BB-333	0.000
BB-314	0.000	BB-334	0.000
BB-315	0.019	BB-335	0.001
BB-316	0.000	BB-336	0.088
BB-317	0.066	BB-337	0.011
BB-318	0.000	BB-338	0.054
BB-319	0.000	BB-339	0.029
BB-320	0.008	BB-340	0.000

Results are expressed in terms of optical density at wave length 492 nm.

Table 34 Antibodies to lipid Ag from M.tuberculosis H37Rv by ELISA in 18 patients with smear positive and culture (negative or contaminated).

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 2	1	C	TR	0.916
TB- 3	2	N	PT	0.081
TB- 15	1	C	TR	0.250
TB- 23	2	N	TR	0.365
TB- 60	1	N	TR	0.095
TB- 64	2	N	TR	0.015
TB- 68	1	N	NE	-
TB- 91	2	N	TR	0.205
TB- 98	2	N	NE	0.353
TB- 99	2	N	TR	0.089
TB-124	2	N	TR	0.124
TB-129	1	N	NE	0.089
TB-135	U	U	U	0.693
TB-141	1	C	TR	0.356
TB-144	2	N	TR	0.211
TB-146	1	N	NE	0.876
TB-149	1	N	TR	0.386
TB-160	3	U	NE	0.273

Results are expressed in terms of optical density at wave length 492 nm.

N = No growth, C = contaminated, NE = No treatment, TR = On treatment, PT = Previous treatment, U = Unknown.

Table 35 Antibodies to lipid Ag from M.tuberculosis H37Rv by ELISA in 14 patients with history of tuberculosis and returning for tuberculosis treatment.

SPECIMEN	SMEAR	CULTURE	TREATMENT	ELISA
TB- 1	2	+	PT	0.141
TB- 4	2	+	PT	0.272
TB- 20	1	+	PT	0.012
TB- 22	1	+	PT	0.110
TB- 28	1	+	PT	0.189
TB- 33	2	+	PT	0.605
TB- 34	1	+	PT	0.398
TB- 41	1	+	PT	0.338
TB- 47	2	+	PT	0.000
TB- 71	1	+	PT	0.524
TB-116	1	+	PT	0.184
TB-118	2	+	PT	0.521
TB-127	1	+	PT	0.220
TB-154	2	+	PT	0.335

Results are expressed in terms of optical density at wave length 492 nm.

Table 36 Antibodies to lipid Ag from M.tuberculosis [illegible] by ELISA in 31 tuberculosis patients with short period of treatment.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 12	3	+	TR	0.013	TB-107	1	+	TR	0.[illegible]
TB- 14	1	+	TR	0.304	TB-110	1	+	TR	0.[illegible]
TB- 16	2	+	TR	0.559	TB-114	1	+	TR	0.063
TB- 25	1	+	TR	0.262	TB-132	1	+	TR	0.252
TB- 42	1	+	TR	0.042	TB-134	1	+	TR	0.173
TB- 45	1	+	TR	0.054	TB-140	2	+	TR	0.180
TB- 51	1	+	TR	0.328	TB-142	3	+	TR	0.305
TB- 53	1	+	TR	0.511	TB-143	2	+	TR	0.240
TB- 57	2	+	TR	0.244	TB-150	1	+	TR	0.33[illegible]
TB- 59	2	+	TR	0.238	TB-157	2	+	TR	0.030
TB- 61	1	+	TR	0.384	TB-159	2	+	TR	1.425
TB- 69	1	+	TR	0.085					
TB- 75	2	+	TR	0.100					
TB- 77	1	+	TR	0.294					
TB- 80	2	+	TR	0.140					
TB- 82	3	+	TR	0.000					
TB- 83	1	+	TR	0.302					
TB- 86	2	+	TR	0.801					
TB-100	2	+	TR	0.312					
TB-104	2	+	TR	0.667					

Results are expressed in terms of optical density at wave length 492 nm.

Table 37 Antibodies to lipid Ag from M.tuberculosis H37Rv by ELISA in 80 newly diagnosed tuberculosis patients.

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 5	1	+	NE	0.321	TB- 38	2	+	NE	0.958
TB- 6	1	+	NE	0.012	TB- 39	1	+	NE	0.736
TB- 7	2	+	NE	0.394	TB- 40	2	+	NE	0.196
TB- 8	2	+	NE	0.170	TB- 43	2	+	NE	1.276
TB- 9	1	+	NE	0.153	TB- 44	3	+	NE	0.649
TB- 10	1	+	NE	0.000	TB- 46	2	+	NE	0.241
TB- 13	1	+	NE	0.213	TB- 48	1	+	NE	0.721
TB- 17	1	+	NE	0.214	TB- 49	2	+	NE	0.000
TB- 18	2	+	NE	0.862	TB- 50	2	+	NE	0.174
TB- 19	1	+	NE	0.120	TB- 52	2	+	NE	0.620
TB- 21	1	+	NE	0.191	TB- 54	1	+	NE	0.534
TB- 24	2	+	NE	0.810	TB- 55	1	+	NE	0.755
TB- 26	1	+	NE	0.082	TB- 56	1	+	NE	0.000
TB- 27	2	+	NE	0.323	TB- 58	1	+	NE	0.[illegible]
TB- 29	2	+	NE	0.212	TB- 62	1	+	NE	0.876
TB- 31	1	+	NE	0.082	TB- 63	2	+	NE	0.578
TB- 32	1	+	NE	0.127	TB- 65	2	+	NE	0.092
TB- 35	2	+	NE	0.872	TB- 66	1	+	NE	0.000
TB- 36	2	+	NE	0.332	TB- 67	2	+	NE	0.315
TB- 37	1	+	NE	0.109	TB- 70	1	+	NE	1.214

Results are expressed in terms of optical density at wave length 492 nm.

SM = sputum smear, CU = sputum cultu , NE = No treatment.

Table 37 Antibodies to lipid Ar from *M.tuberculosis* H37Rv by ELISA in 80 newly diagnosed tuberculosis patients [cont.].

SPECIMEN	SM.	CU.	TR.	ELISA	SPECIMEN	SM.	CU.	TR.	ELISA
TB- 72	2	+	NE	0.285	TB-102	2	+	NE	0.330
TB- 73	2	+	NE	0.474	TB-103	2	+	NE	1.139
TB- 74	2	+	NE	0.688	TB-105	1	+	NE	0.027
TB- 76	2	+	NE	0.000	TB-106	1	+	NE	0.050
TB- 78	2	+	NE	0.045	TB-108	2	+	NE	0.149
TB- 79	2	+	NE	0.241	TB-109	1	+	NE	0.439
TB- 81	3	+	NE	0.236	TB-111	2	+	NE	1.007
TB- 84	2	+	NE	1.072	TB-112	2	+	NE	0.561
TB- 85	1	+	NE	0.000	TB-113	2	+	NE	0.030
TB- 87	2	+	NE	0.149	TB-115	2	+	NE	0.035
TB- 88	1	+	NE	0.1 [illegible]	TB-117	2	+	NE	0.708
TB- 89	3	+	NE	0.300	TB-119	1	+	NE	1.150
TB- 90	2	+	NE	0.350	TB-120	1	+	NE	0.078
TB- 92	2	+	NE	0.451	TB-121	1	+	NE	1.133
TB- 93	2	+	NE	0.163	TB-122	1	+	NE	0.031
TB- 94	1	+	NE	0.287	TB-123	1	+	NE	0.221
TB- 95	1	+	NE	0.083	TB-125	2	+	NE	0.010
TB- 96	2	+	NE	0.355	TB-126	1	+	NE	0.073
TB- 97	2	+	NE	0.022	TB-128	2	+	NE	0.217
TB-101	2	+	NE	0.130	TB-130	1	+	NE	0.997

Results are expressed in terms of optical density at wave length 4[illegible] nm.

SM = sputum smear, CU = sputum culture, NE = No treatment.

Table 38. Antibody against Various Types of Antigen by ELISA.

Groups of Subjects	Antibodies to Different Antigens by ELISA																	
	PPD(0.200)*			Pyridine Ext.(0.395)*			Cult.Filt.(0.210)*			Sonicated (0.210)*			Lipid H37Rv (0.050)*			Lipid Local (0.418)*		
	No.Test	No.Pos	%Pos	No.Test	No.Pos	%Pos	No.Test	No.Pos	%Pos	No.Test	No.Pos	%Pos	No.Test	No.Pos	%Pos	No.Test	No.Pos	%Pos
Blood Bank Donors	113	7	6.2	114	8	7.0	116	10	8.6	115	6	5.2	118	8	6.8	115	4	3.5
T.B.Smear+, Cult+,New Cases	80	51	63.8	80	58	72.5	80	66	82.50	80	57	71.3	80	66	82.5	80	56	70.0
T.B.Smear+, Cult.+, History of T.B.	14	7	50.0	14	11	79.6	14	13	92.86	14	9	64.3	14	12	85.7	14	11	78.6
T.B.Smear+, Cult.+ Treatment at present	31	25	80.7	31	26	83.9	31	27	87.1	31	25	80.7	31	26	83.9	31	27	87.1
T.B.Smear+ Cult.-or cont.	18	10	55.6	18	12	66.7	18	14	77.8	18	14	77.8	18	16	88.9	18	14	77.8
T.B.smear+ Culture+	142	91	64.1	142	105	73.9	142	119	83.8	142	100	70.4	142	115	81.0	142	105	73.9
Leprosy patients	73	30	41.1	73	47	64.4	73	58	79.5	ND	ND	ND	ND	ND	ND	73	51	69.9
Atypical Mycobacterial Infection	16	10	62.5	16	10	62.5	16	12	75.0	ND	ND	ND	ND	ND	ND	16	8	50.0