

On-line Supplement

Serologic responses in childhood pulmonary tuberculosis

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Contents

Luminex Assay Validation: page 3

Generation of the optimal linear combinations of antigens
and risk probability: page 6

Supplementary Table S1: page 7

Antigen list.

Supplementary Table S2: page 12

Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB, for all ages

Supplementary Table S3: page 17

Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB, for children 60 months and older

Supplementary Table S4: page 22

Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB, for children 12 months to 59 months old

Supplementary Table S5 page 27

Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB/Mantoux test negative, for all ages

Supplementary Table S6 page 32

Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB/Mantoux test positive, for all ages

Supplementary Table S7 page 37

Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unconfirmed TB, for all ages

Luminex assay validation

Precision

A dilution of 1:200 was chosen after confirming linear behavior of log-converted measurements at different sample dilutions. Intra-assay coefficients of variation were calculated on the basis of eight replicates of six different TB positive serum samples from the FIND biobank as described elsewhere[17]. Samples with low, medium and high signals were chosen based on the results of previous experiments. The technical replicates were generated from a single source. Inter-assay coefficients of variation were generated in triplicates in three different runs in addition to the eight replicates of the intra-assay CV experiment. The results for intra- and inter-assay CV are summarized in Tables S1A and S1B. Only %CVs from positive signals (>3x negative control) are shown. Intra-assay CVs were all <10% (mean 4% to 34%) for all six tested serum samples and all antigens. Inter-assay CVs were within a comparable range and both results were within the desired range.

Intra-assay coefficients of variation for TB positive serum samples						
%CV	Positive control	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Mean	4	6	7	6	7	10
Min	1	3	2	1	2	1
Max	8	11	10	11	14	34
<10%	23	3	12	22	4	8
10-20%	0	1	0	2	1	2
>20%	0	0	0	0	0	1
Inter-assay coefficients of variation for TB positive serum samples						
%CV	Positive control	Sample 1	Sample2	Sample3	Sample4	Sample5
Mean	7	8	6	9	9	12
Min	4	6	4	3	6	2
Max	10	10	8	12	14	35
<10%	20	3	10	17	4	5

10-20%	2	1	0	6	1	5
>20%	0	0	0	0	0	1

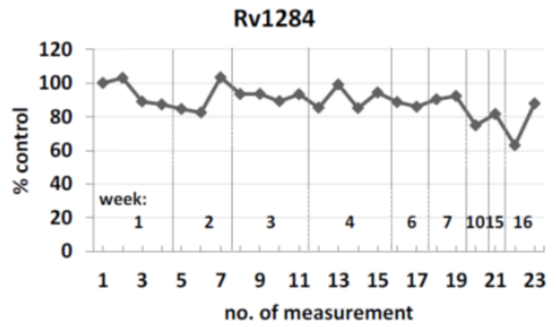
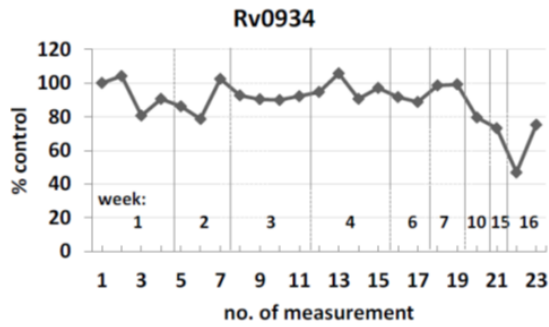
Freeze and thaw stability

The median fluorescence intensity (MFI) values generated with the fresh sample pool were set to 100% and all further freeze/thaw cycle values were calculated relative to that value. The mean values for the remaining signals for the sample comprised of three pooled TB positive serum samples on all antigens were 93% for one freeze/thaw cycle, 93% for two freeze/thaw cycles, 91% for three freeze/thaw cycles and 96% for four freeze/thaw cycles. Thus, the antibodies in the sample pool appeared stable over at least four freeze/thaw cycles.

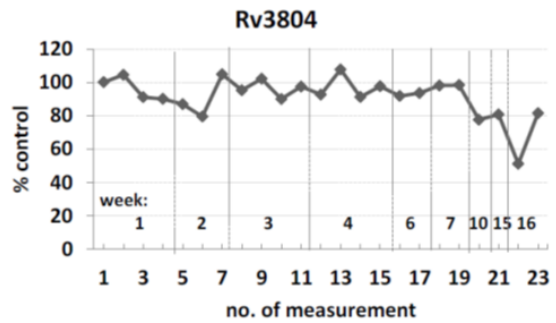
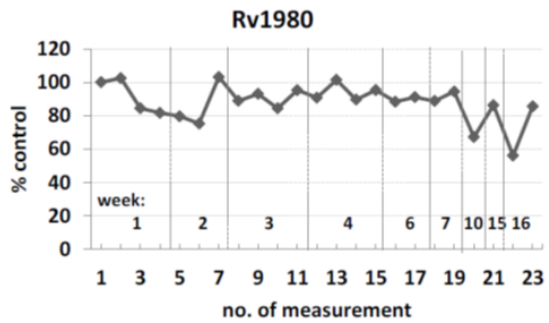
Mean values and range of antibody freeze/thaw stability				
Recovery (%)	1 freeze/thaw cycle	2 freeze/thaw cycles	3 freeze/thaw cycles	4 freeze/thaw cycles
Mean	93	93	91	96
Min	61	63	65	71
Max	110	114	107	112

Antigen stability on beads

For large sample screenings, it is desirable to have antigen-coupled bead sets that are stable over a longer period of time to achieve comparable results. Recombinant His-tagged proteins immobilized on beads were visualized in each assay with a mouse-anti-His antibody followed by the detection using an RPE-labelled goat-anti-mouse antibody. The signals obtained in the first measurement were taken as the reference signal for all consecutive measurements. The relative signal intensities for four representative antigens over a period of 16 weeks are shown below. Immobilized antigens on beads were stable over at least a time period of seven weeks. A considerable signal loss was observed after ten weeks. No correlation was found between the overall MFI signal intensity generated with the anti-His antibody and the stability of the antigens.



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Additional measures to ensure the quality of the results included measurement of several control samples in addition to patient samples on each 96-well plate. The controls included three (non-endemic) negative control samples from healthy donors and 1 positive control sample. The positive control sample was systematically generated through the combination of three positive sera and showed reactivity to most antigens (Planatscher H et al, Sci Rep 2013;3:3259). Signals for all antigens from independent measurements of the control sample on different plates correlated well (>0.98), confirming the stability of the assay and reliability of results.

Generation of the optimal linear combinations of antigens and risk probability

We conducted variable selection, among the antibody responses with $AUC > 0.5$, using the generalized linearized elastic net algorithm (Friedman et al (2008)), which is implemented in the R package *cv.glmnet*. This algorithm applies cross validation to select the best predictors that optimize the elastic net penalty, allowing highly correlated predictors to have similar coefficients. Because our outcome was binary (e.g. discrimination between children classified as Definite TB versus children classified as Unlikely TB), we applied the logit link. *Cv.glmnet* was applied with default options, and the selected subset of antibody responses were those with non-zero coefficients at the point where the mean cross-validation error was minimal. The predicted logit link function from this model is the optimal linear combination of selected antibody responses, and it was used to generate in-sample predictions of TB risk probabilities for each child.

Supplementary Table S1. Antigen list.

Rv number	Antigen name	Supplier	Comments
	C10.E6_IDRI	IDRI	Complex of Rv3874-Rv3875 (CFP10-ESAT6, esxB-esxA)
	Rv3874.Rv3875_SSI		Complex of Rv3874-Rv3875 (CFP10-ESAT6, esxB-esxA)
	DID64_IDRI	IDRI	64 kDa fusion protein comprised of Rv2031-Rv0934-Rv3874
	DID90_IDRI	IDRI	90 kDa fusion protein comprised of Rv2031-Rv0934-Rv2032
	Rv2031c.Rv2873_SSI		Fusion protein comprised of Rv2031c-Rv2873
	TBF10_IDRI	IDRI	Fusion protein comprised of Rv0379- Rv0934-Rv3874
	Antigen.Cocktail.V_Lionex	Lionex	Recombinant antigen cocktail comprised of 4 antigens
Rv0212	Rv0212_FIND_A.2.ss	FIND_A	
Rv0222	Rv0222_SSI	SSI	RD 4
Rv0272	Rv0272_FIND_A.2.ss	FIND_A	
Rv0302	Rv0302_FIND_A.3	FIND_A	
Rv0379	Rv0379_FIND_A.1	FIND_A	
Rv0394	Rv0394_FIND_A.3	FIND_A	
Rv0440	Rv0440_FIND_A.4	FIND_A	
Rv0456c	Rv0456c_FIND_A.1	FIND_A	
Rv0577	Rv0577_SSI	SSI	
Rv0583c	Rv0583c_FIND_A.3	FIND_A	
Rv0632c	Rv0632c_FIND_A.3	FIND_A	
Rv0798c	Rv0798c_FIND_A.2.ls	FIND_A	
Rv0801	Rv0801_FIND_A.2.ls	FIND_A	
Rv0831	Rv0831_IDRI	IDRI	

Rv0934	Rv0934_FIND_A.1	FIND_A	
	Rv0934_IDRI	IDRI	
Rv0944	Rv0944_FIND_A.4	FIND_A	
Rv0984	Rv0984_FIND_A.3	FIND_A	
Rv1009	Rv1009_IDRI	IDRI	
Rv1030	Rv1030_FIND_A.6	FIND_A	
	Rv1030extern_FIND	FIND	Extracellular region
	Rv1030intra_FIND	FIND	Intracellular region
Rv1099	Rv1099_IDRI	IDRI	
Rv1175	Rv1175_FIND	FIND	
	Rv1175c_FIND_A.6.2nd.cou pling	FIND_A	
Rv1175	Rv1196_FIND_A.3	FIND_A	
Rv1175	Rv1242_FIND_A.2.ls	FIND_A	
Rv1284	Rv1284_FIND_A.1	FIND_A	
Rv1387	Rv1387_FIND_A7	FIND_A	
Rv1387	Rv1411c_FIND_A.1	FIND_A	
Rv1387	Rv1566c_FIND_A.1	FIND_A	
Rv1586c	Rv1586c_SSI	SSI	RD3
Rv1629	Rv1629_FIND_A.6	FIND_A	
	Rv1629_FIND	FIND	
Rv1636	Rv1636_SSI	SSI	
Rv1837c	Rv1837c_FIND_A.3	FIND_A	
Rv1860	Rv1860_FIND_A.1	FIND_A	
	Rv1860_IDRI	IDRI	
	Rv1860_Lionex	Lionex	
Rv1886	Rv1886c_FIND_A.6	FIND_A	
	Rv1886_FIND	FIND	
	Rv1886_IDRI	IDRI	
Rv1926c	Rv1926c_FIND_A.3	FIND_A	

Rv1980	Rv1980_SSI	SSI	RD2
	Rv1980_IDRI	IDRI	RD2
Rv1980c	Rv1980c_FIND_A.3	FIND_A	RD2
Rv1984	Rv1984_FIND_A.2.ss	FIND_A	RD2
	Rv1984_SSI	SSI	RD2
	Rv1984c_FIND_A.6	FIND_A	RD2
	Rv1984_IDRI	IDRI	RD2
Rv2031c	Rv2031c_FIND_A.1	FIND_A	
	Rv2031_IDRI	IDRI	
Rv2032	Rv2032_IDRI	IDRI	
Rv2094c	Rv2094c_FIND_A.6	FIND_A	
	Rv2094_FIND	FIND	
Rv2151	Rv2151_FIND_A.4	FIND_A	
Rv2185c	Rv2185c_SSI	SSI	
Rv2220	Rv2220_IDRI	IDRI	
Rv2252	Rv2252.T01_FIND_A.2.ls	FIND_A	
Rv2282	Rv2282_FIND_A.2.ss	FIND_A	
Rv2396	Rv2396_FIND_A7	FIND_A	
	Rv2396_FIND	FIND	
Rv2462c	Rv2462c_SSI	SSI	
Rv2544	Rv2544_FIND_A.4	FIND_A	
Rv2618	Rv2618_FIND_A.4	FIND_A	
Rv2746c	Rv2746c_FIND_A7	FIND_A	
Rv2870	Rv2870_FIND_A.4	FIND_A	
Rv2873	Rv2873_FIND	FIND	
	Rv2873_FIND_A.6	FIND_A	
	Rv2873_IDRI	IDRI	
Rv2875	Rv2875_FIND_A.6	FIND_A	
	Rv2875_IDRI	IDRI	
	Rv2875_FIND	FIND	

Rv2927	Rv2927_FIND_A.1	FIND_A	
Rv2984	Rv2984_FIND_A.4	FIND_A	
Rv3050	Rv3050_FIND_A.2.ss	FIND_A	
Rv3243	Rv3243_FIND_A.2.ls	FIND_A	
Rv3248	Rv3248_FIND_A.1	FIND_A	
Rv3319	Rv3319_FIND_A.2.ss	FIND_A	
Rv3326	Rv3326_FIND	FIND	
	Rv3326_FIND_A.2.ss	FIND_A	
	Rv3326_FIND_A.6	FIND_A	
Rv3354	Rv3354_SSI	SSI	
Rv3362	Rv3362_FIND	FIND	
	Rv3362_FIND_A.2.ss	FIND_A	
	Rv3362c_FIND_A.6	FIND_A	
Rv3376	Rv3376_FIND_A.3	FIND_A	
Rv3495	Rv3495_FIND	FIND	
	Rv3495c_FIND_A.6	FIND_A	
Rv3616	Rv3616_FIND	FIND	
	Rv3616_FIND_A.5	FIND_A	
Rv3628	Rv3628_FIND_A.4	FIND_A	
Rv3762c	Rv3762c_FIND_A.3	FIND_A	
Rv3763	Rv3763_FIND_A.3	FIND_A	
Rv3775	Rv3775_FIND_A.2.ss	FIND_A	
Rv3804	Rv3804_IDRI	IDRI	
	Rv3804c_FIND_A.1	FIND_A	
Rv3810	Rv3810_FIND_A7	FIND_A	
	Rv3810_FIND	FIND	
Rv3841	Rv3841_IDRI	IDRI	
Rv3864	Rv3864_FIND_A.5	FIND_A	
Rv3872	Rv3872_SSI	SSI	RD1
Rv3874	Rv3874_IDRI	IDRI	RD1

	Rv3874_FIND_A.1	FIND_A	RD1
	Rv3874_Lionex	Lionex	RD1
Rv3875	Rv3875_FIND	FIND	RD1
	Rv3875_Lionex	Lionex	RD1
	Rv3875_FIND_A7	FIND_A	RD1
Rv3878	Rv3878_FIND_A.1	FIND_A	RD1
Rv3879c	Rv3879c.SSI	SSI	Amino acids 1 to 181; RD1
Rv3881	Rv3881c_FIND_A.1	FIND_A	
	Rv3881_IDRI	IDRI	
<p>Abbreviations: IDRI, Infectious Disease Research Institute; SSI Statens Serum Institute; FIND, Foundation for Innovative New Diagnostics; RD, Region of Difference</p>			

Supplementary Table S2. Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB, for all ages

Antigen Name	Optimum cut-off value	AUC	Sensitivity	Specificity
DID64_IDRI	83.00	0.63	0.60	0.60
Rv3875_FIND	309.00	0.61	0.60	0.61
Rv3616_FIND_A.5	93.00	0.60	0.55	0.55
DID90_IDRI	117.00	0.59	0.58	0.58
Rv3804c_FIND_A.1	154.00	0.58	0.55	0.50
Rv3628_FIND_A.4	516.00	0.58	0.53	0.53
TBF10_IDRI	85.00	0.58	0.53	0.53
C10.E6_IDRI	117.00	0.57	0.58	0.58
Rv3874_Lionex	139.00	0.57	0.58	0.58
Rv1636_SSI	115.00	0.57	0.55	0.56
Rv3804_IDRI	184.00	0.57	0.55	0.58
Rv0831_IDRI	782.00	0.57	0.63	0.58
Rv1886_IDRI	234.00	0.56	0.53	0.53
Rv2873_FIND	94.00	0.56	0.60	0.58
Rv2873_IDRI	152.00	0.55	0.58	0.56
Rv2220_IDRI	529.00	0.55	0.58	0.55
Rv3874.Rv3875_SSI	157.00	0.55	0.55	0.53
Rv3881c_FIND_A.1	245.00	0.55	0.55	0.53
Rv3875_Lionex	206.00	0.55	0.55	0.48
Rv1886_FIND	150.00	0.55	0.53	0.51
Rv3874_IDRI	178.00	0.55	0.50	0.50
Rv2031c.Rv2873_SSI	102.00	0.55	0.55	0.55
Rv1629_FIND	138.00	0.55	0.55	0.55

Rv1030intra_FIND	222.00	0.54	0.55	0.53
Rv3864_FIND_A.5	74.00	0.54	0.55	0.55
Rv0934_IDRI	247.00	0.54	0.58	0.51
Rv2032_IDRI	156.00	0.54	0.53	0.48
Rv1980_SSI	192.00	0.53	0.55	0.53
Rv3872_SSI	92.00	0.53	0.58	0.58
Rv3495_FIND	143.00	0.53	0.55	0.50
Rv0456c_FIND_A.1	495.00	0.53	0.53	0.50
Rv1099_IDRI	343.00	0.53	0.53	0.53
Rv0222_SSI	147.00	0.53	0.53	0.53
Rv3354_SSI	94.00	0.53	0.53	0.53
Rv0934_FIND_A.1	87.00	0.52	0.58	0.48
Rv2396_FIND	217.00	0.52	0.53	0.51
Rv2875_FIND	214.00	0.52	0.50	0.50
Rv3810_FIND	99.00	0.51	0.53	0.50
Rv3841_IDRI	376.00	0.51	0.53	0.51
Rv0632c_FIND_A.3	633.00	0.51	0.53	0.51
Rv1175_FIND	111.00	0.50	0.50	0.48
Antigen.Cocktail.V_Lionex	129.00	0.50	0.48	0.46
Rv1009_IDRI	385.00	0.50	0.55	0.54
Rv2462c_SSI	139.00	0.50	0.53	0.49
Rv1196_FIND_A.3	152.00	0.50	0.50	0.50
Rv3326_FIND	127.00	0.49	0.53	0.48
Rv1886c_FIND_A.6	85.00	0.49	0.50	0.50
Rv0394_FIND_A.3	123.00	0.49	0.50	0.49
Rv0272_FIND_A.2.ss	145.00	0.49	0.53	0.51
Rv1629_FIND_A.6	130.00	0.49	0.48	0.48
Rv0577_SSI	265.00	0.49	0.50	0.49
Rv1387_FIND_A7	112.00	0.49	0.50	0.50
Rv2396_FIND_A7	923.00	0.49	0.50	0.50

Rv3874_FIND_A.1	117.00	0.49	0.48	0.49
Rv3248_FIND_A.1	198.00	0.48	0.50	0.50
Rv3879c.amino.acids.1.181_SSI	195.00	0.48	0.48	0.49
Rv3881_IDRI	183.00	0.48	0.50	0.46
Rv2031_IDRI	49.00	0.48	0.48	0.48
Rv3616_FIND	139.00	0.48	0.48	0.48
Rv2875_IDRI	442.00	0.48	0.50	0.49
Rv0583c_FIND_A.3	1944.00	0.48	0.53	0.53
Rv2875_FIND_A.6	124.00	0.48	0.45	0.45
Rv2151_FIND_A.4	107.00	0.47	0.48	0.46
Rv3495c_FIND_A.6	71.00	0.47	0.50	0.49
Rv1984_IDRI	339.00	0.47	0.50	0.50
Rv1566c_FIND_A.1	201.00	0.47	0.48	0.48
Rv1980c_FIND_A.3	361.00	0.47	0.53	0.50
Rv2544_FIND_A.4	112.00	0.47	0.50	0.49
Rv3362_FIND	147.00	0.47	0.48	0.48
Rv2870_FIND_A.4	178.00	0.47	0.45	0.45
Rv2094c_FIND_A.6	100.00	0.46	0.45	0.43
Rv3875_FIND_A7	53.00	0.46	0.45	0.45
Rv1926c_FIND_A.3	205.00	0.46	0.48	0.48
Rv0302_FIND_A.3	173.00	0.46	0.48	0.48
Rv1980_IDRI	458.00	0.46	0.50	0.44
Rv2984_FIND_A.4	104.00	0.46	0.50	0.49
Rv3326_FIND_A.6	145.00	0.46	0.48	0.48
Rv3362c_FIND_A.6	181.00	0.46	0.45	0.45
Rv1860_Lionex	115.00	0.46	0.55	0.48
Rv1984_SSI	259.00	0.45	0.50	0.49
Rv2031c_FIND_A.1	49.00	0.45	0.48	0.44
Rv0440_FIND_A.4	253.00	0.45	0.45	0.45
Rv0379_FIND_A.1	74.00	0.45	0.50	0.49

Rv1586c_SSI	403.00	0.45	0.48	0.48
Rv2094_FIND	163.00	0.45	0.43	0.43
Rv1175c_FIND_A.6.2nd.coupling	240.00	0.45	0.45	0.45
Rv1860_IDRI	225.00	0.44	0.48	0.48
Rv3362_FIND_A.2.ss	105.00	0.44	0.45	0.44
Rv3810_FIND_A7	35.00	0.44	0.45	0.44
Rv2746c_FIND_A7	46.00	0.44	0.45	0.46
Rv1030extern_FIND	164.00	0.44	0.45	0.45
Rv1984_FIND_A.2.ss	165.00	0.44	0.48	0.48
Rv2618_FIND_A.4	61.00	0.44	0.43	0.41
Rv3762c_FIND_A.3	301.00	0.44	0.45	0.45
Rv3878_FIND_A.1	50.00	0.44	0.45	0.44
Rv0798c_FIND_A.2.ls	252.00	0.43	0.48	0.48
Rv1242_FIND_A.2.ls	77.00	0.43	0.48	0.44
Rv3775_FIND_A.2.ss	137.00	0.43	0.50	0.45
Rv2282_FIND_A.2.ss	63.00	0.43	0.45	0.44
Rv3326_FIND_A.2.ss	94.00	0.43	0.45	0.44
Rv0212_FIND_A.2.ss	173.00	0.42	0.45	0.46
Rv2185c_SSI	342.00	0.42	0.40	0.40
Rv1030_FIND_A.6	71.00	0.42	0.45	0.45
Rv1284_FIND_A.1	804.00	0.42	0.50	0.43
Rv3243_FIND_A.2.ls	416.00	0.42	0.45	0.45
Rv2873_FIND_A.6	89.00	0.41	0.43	0.44
Rv1984c_FIND_A.6	167.00	0.41	0.48	0.45
Rv1837c_FIND_A.3	186.00	0.41	0.48	0.45
Rv0984_FIND_A.3	485.00	0.41	0.45	0.46
Rv2252.T01_FIND_A.2.ls	170.00	0.41	0.50	0.41
Rv3050_FIND_A.2.ss	140.00	0.41	0.45	0.45
Rv0801_FIND_A.2.ls	246.00	0.41	0.45	0.43
Rv3376_FIND_A.3	137.00	0.41	0.43	0.43

Rv0944_FIND_A.4	761.00	0.40	0.43	0.43
Rv1411c_FIND_A.1	31.00	0.40	0.40	0.41
Rv2927_FIND_A.1	995.00	0.40	0.40	0.40
Rv3319_FIND_A.2.ss	157.00	0.40	0.48	0.41
Rv3763_FIND_A.3	202.00	0.39	0.40	0.39
Rv1860_FIND_A.1	125.00	0.36	0.35	0.35

Supplementary Table S3. Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB, for children 60 months and older

Antigen Name	Optimum cut-off value	AUC	Sensitivity	Specificity
DID64_IDRI	93	0.76	0.71	0.74
Rv3804c_FIND_A.1	153	0.72	0.59	0.63
TBF10_IDRI	108	0.69	0.59	0.63
Rv3616_FIND_A.5	93	0.67	0.59	0.63
Rv3628_FIND_A.4	681	0.66	0.59	0.63
Rv1009_IDRI	300	0.66	0.59	0.63
Rv0934_FIND_A.1	101	0.66	0.53	0.58
Rv3864_FIND_A.5	62	0.65	0.65	0.63
Rv3875_FIND	324	0.63	0.59	0.63
Rv3362_FIND	179	0.62	0.53	0.53
Rv0394_FIND_A.3	147	0.62	0.59	0.63
Rv0934_IDRI	331	0.62	0.59	0.63
Rv2220_IDRI	661	0.62	0.59	0.63
Rv2094c_FIND_A.6	75	0.61	0.82	0.47
Rv3326_FIND_A.6	130	0.61	0.65	0.53
Rv3362c_FIND_A.6	212	0.61	0.59	0.63
Rv3881_IDRI	204	0.61	0.59	0.63
Rv3326_FIND	127	0.61	0.71	0.47
Rv1387_FIND_A7	116	0.61	0.53	0.58
Rv2544_FIND_A.4	132	0.60	0.53	0.58
Rv2870_FIND_A.4	213	0.60	0.53	0.58
Rv2873_FIND	103	0.60	0.59	0.63
DID90_IDRI	147	0.60	0.59	0.58
Rv0831_IDRI	948	0.60	0.53	0.58

Rv2875_IDRI	462	0.60	0.59	0.58
Rv2031c.Rv2873_SSI	115	0.59	0.59	0.63
Rv2618_FIND_A.4	57	0.59	0.76	0.47
Rv3616_FIND	126	0.59	0.71	0.47
Rv3810_FIND	95	0.59	0.71	0.47
Rv1175c_FIND_A.6.2nd.coupling	202	0.58	0.53	0.58
Rv3874.Rv3875_SSI	177	0.58	0.53	0.53
Rv1886_FIND	182	0.58	0.65	0.47
C10.E6_IDRI	129	0.58	0.59	0.53
Rv1196_FIND_A.3	162	0.57	0.53	0.47
Rv3248_FIND_A.1	180	0.57	0.53	0.58
Rv3874_FIND_A.1	166	0.57	0.53	0.58
Rv0456c_FIND_A.1	582	0.57	0.53	0.53
Rv1926c_FIND_A.3	140	0.57	0.59	0.58
Rv3881c_FIND_A.1	301	0.56	0.53	0.58
Rv3804_IDRI	184	0.56	0.65	0.47
Rv3354_SSI	113	0.56	0.59	0.53
Rv1629_FIND	148	0.56	0.59	0.53
Rv3872_SSI	107	0.56	0.65	0.53
Rv0379_FIND_A.1	82	0.55	0.65	0.63
Rv2873_IDRI	152	0.55	0.59	0.53
Rv1030intra_FIND	312	0.55	0.53	0.58
Rv1886c_FIND_A.6	67	0.55	0.71	0.53
Rv1886_IDRI	184	0.55	0.82	0.47
Rv3874_IDRI	234	0.54	0.47	0.47
Rv0272_FIND_A.2.ss	141	0.54	0.59	0.47
Rv2031c_FIND_A.1	45	0.54	0.65	0.47
Rv3875_Lionex	266	0.54	0.59	0.53
Rv1175_FIND	138	0.54	0.53	0.53
Antigen.Cocktail.V_Lionex	132	0.53	0.47	0.47

Rv3362_FIND_A.2.ss	89	0.53	0.65	0.47
Rv2875_FIND	228	0.53	0.53	0.47
Rv3495c_FIND_A.6	65	0.53	0.53	0.53
Rv3875_FIND_A7	46	0.53	0.53	0.53
Rv2984_FIND_A.4	96	0.53	0.47	0.53
Rv3762c_FIND_A.3	178	0.53	0.76	0.42
Rv0583c_FIND_A.3	1239	0.52	0.53	0.58
Rv3874_Lionex	174	0.52	0.53	0.47
Rv1629_FIND_A.6	130	0.52	0.59	0.53
Rv3326_FIND_A.2.ss	66	0.51	0.65	0.47
Rv3775_FIND_A.2.ss	123	0.51	0.59	0.47
Rv0632c_FIND_A.3	445	0.51	0.59	0.63
Rv1984_FIND_A.2.ss	129	0.51	0.53	0.47
Rv2252.T01_FIND_A.2.ls	161	0.51	0.47	0.47
Rv1030_FIND_A.6	78	0.51	0.53	0.58
Rv1980_SSI	188	0.51	0.71	0.47
Rv3243_FIND_A.2.ls	320	0.51	0.53	0.47
Rv1099_IDRI	1134	0.50	0.53	0.58
Rv2746c_FIND_A7	36	0.50	0.59	0.42
Rv0222_SSI	174	0.50	0.41	0.42
Rv3495_FIND	172	0.50	0.53	0.53
Rv0212_FIND_A.2.ss	146	0.50	0.53	0.47
Rv3878_FIND_A.1	50	0.50	0.47	0.47
Rv3841_IDRI	410	0.50	0.53	0.47
Rv2031_IDRI	49	0.49	0.59	0.47
Rv0577_SSI	277	0.49	0.47	0.47
Rv3879c.amino.acids.1.181_SSI	151	0.49	0.53	0.37
Rv2875_FIND_A.6	130	0.49	0.47	0.47
Rv1980_IDRI	414	0.48	0.59	0.53
Rv0798c_FIND_A.2.ls	181	0.48	0.41	0.42

Rv1860_IDRI	194	0.48	0.59	0.47
Rv2462c_SSI	156	0.48	0.47	0.47
Rv1586c_SSI	351	0.48	0.59	0.47
Rv1411c_FIND_A.1	31	0.48	0.53	0.42
Rv2282_FIND_A.2.ss	59	0.48	0.47	0.47
Rv2032_IDRI	218	0.48	0.47	0.47
Rv2396_FIND	208	0.48	0.59	0.47
Rv1636_SSI	105	0.47	0.71	0.47
Rv2873_FIND_A.6	92	0.47	0.47	0.47
Rv3763_FIND_A.3	140	0.47	0.59	0.42
Rv2151_FIND_A.4	87	0.47	0.53	0.42
Rv0944_FIND_A.4	894	0.46	0.47	0.47
Rv3376_FIND_A.3	118	0.46	0.47	0.42
Rv1242_FIND_A.2.ls	69	0.46	0.53	0.47
Rv1860_Lionex	115	0.46	0.65	0.42
Rv0984_FIND_A.3	371	0.46	0.53	0.47
Rv1566c_FIND_A.1	178	0.46	0.59	0.53
Rv2396_FIND_A7	1624	0.45	0.53	0.42
Rv3050_FIND_A.2.ss	104	0.45	0.76	0.37
Rv3319_FIND_A.2.ss	130	0.45	0.65	0.42
Rv1837c_FIND_A.3	133	0.45	0.59	0.47
Rv1984_IDRI	326	0.44	0.59	0.47
Rv1980c_FIND_A.3	363	0.44	0.47	0.47
Rv1030extern_FIND	149	0.44	0.53	0.37
Rv1860_FIND_A.1	113	0.44	0.47	0.42
Rv3810_FIND_A7	28	0.44	0.47	0.42
Rv1284_FIND_A.1	458	0.43	0.59	0.42
Rv1984_SSI	195	0.42	0.59	0.42
Rv2094_FIND	151	0.42	0.59	0.32
Rv0440_FIND_A.4	179	0.42	0.53	0.37

Rv0801_FIND_A.2.ls	202	0.42	0.41	0.42
Rv2927_FIND_A.1	995	0.38	0.35	0.37
Rv1984c_FIND_A.6	167	0.38	0.47	0.47
Rv0302_FIND_A.3	168	0.33	0.41	0.42

Supplementary Table S4. Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB, for children 12 months to 59 months old

Antigen Name	Optimum cut-off value	AUC	Sensitivity	Specificity
Rv3875_FIND	299	0.587	0.65	0.59
Rv1636_SSI	113	0.576	0.57	0.56
DID90_IDRI	115	0.574	0.57	0.57
Rv0632c_FIND_A.3	682	0.568	0.52	0.51
Rv3874_Lionex	130	0.567	0.57	0.57
Rv3616_FIND_A.5	94	0.562	0.52	0.52
Rv3881c_FIND_A.1	220	0.558	0.61	0.52
C10.E6_IDRI	114	0.552	0.57	0.57
Rv0302_FIND_A.3	196	0.548	0.52	0.52
DID64_IDRI	73	0.548	0.57	0.56
Rv3804_IDRI	175	0.547	0.52	0.52
Rv0222_SSI	160	0.544	0.57	0.57
Rv2873_FIND	103	0.542	0.57	0.57
Rv3874_IDRI	178	0.537	0.52	0.54
Rv1886_IDRI	210	0.537	0.48	0.49
Rv2873_IDRI	152	0.536	0.57	0.57
Rv3495_FIND	136	0.532	0.48	0.49
Rv3628_FIND_A.4	445	0.528	0.43	0.44
Rv3874.Rv3875_SSI	157	0.526	0.57	0.57
Rv2032_IDRI	145	0.522	0.57	0.48
Rv0831_IDRI	730	0.517	0.57	0.54
Rv1629_FIND	126	0.517	0.57	0.52
Rv1980_SSI	189	0.516	0.52	0.51
Rv3875_Lionex	206	0.514	0.48	0.49

Rv1980c_FIND_A.3	361	0.512	0.57	0.51
Rv0583c_FIND_A.3	2139	0.509	0.57	0.52
Rv2031c.Rv2873_SSI	94	0.509	0.57	0.56
Rv3804c_FIND_A.1	154	0.502	0.52	0.44
Rv2396_FIND	217	0.5	0.52	0.52
Rv3872_SSI	88	0.496	0.52	0.52
Rv3841_IDRI	373	0.494	0.52	0.52
Rv1030intra_FIND	199	0.494	0.52	0.49
Rv1566c_FIND_A.1	222	0.489	0.48	0.49
TBF10_IDRI	77	0.489	0.48	0.49
Rv2875_FIND	192	0.488	0.57	0.49
Rv0456c_FIND_A.1	437	0.487	0.48	0.49
Antigen.Cocktail.V_Lionex	129	0.485	0.48	0.48
Rv1886_FIND	131	0.485	0.48	0.46
Rv1984_IDRI	337	0.48	0.48	0.49
Rv2151_FIND_A.4	113	0.479	0.48	0.49
Rv2220_IDRI	446	0.477	0.57	0.51
Rv2462c_SSI	132	0.476	0.48	0.49
Rv3810_FIND_A7	39	0.475	0.48	0.49
Rv0934_IDRI	247	0.473	0.57	0.56
Rv1099_IDRI	266	0.473	0.48	0.49
Rv3879c.amino.acids.1.181_SSI	221	0.473	0.52	0.52
Rv1175_FIND	104	0.473	0.43	0.44
Rv1886c_FIND_A.6	91	0.47	0.52	0.56
Rv2875_FIND_A.6	122	0.47	0.48	0.44
Rv3354_SSI	89	0.469	0.43	0.46
Rv0440_FIND_A.4	262	0.468	0.52	0.46
Rv1284_FIND_A.1	914	0.465	0.52	0.46
Rv1984_SSI	262	0.463	0.52	0.51
Rv2185c_SSI	372	0.463	0.43	0.44

Rv3248_FIND_A.1	210	0.462	0.48	0.49
Rv3864_FIND_A.5	74	0.462	0.52	0.52
Rv1629_FIND_A.6	129	0.46	0.43	0.44
Rv2396_FIND_A7	524	0.458	0.48	0.44
Rv2031_IDRI	45	0.457	0.48	0.46
Rv0577_SSI	241	0.457	0.48	0.46
Rv2984_FIND_A.4	113	0.456	0.52	0.52
Rv0272_FIND_A.2.ss	151	0.455	0.52	0.52
Rv1980_IDRI	471	0.453	0.43	0.43
Rv1030extern_FIND	167	0.453	0.48	0.49
Rv3495c_FIND_A.6	74	0.452	0.48	0.51
Rv3810_FIND	95	0.452	0.43	0.44
Rv1926c_FIND_A.3	243	0.447	0.52	0.51
Rv2094_FIND	162	0.447	0.43	0.44
Rv1860_Lionex	121	0.44	0.48	0.49
Rv1009_IDRI	443	0.438	0.52	0.52
Rv1387_FIND_A7	112	0.436	0.48	0.48
Rv0934_FIND_A.1	87	0.434	0.52	0.48
Rv1586c_SSI	336	0.432	0.48	0.44
Rv1196_FIND_A.3	150	0.431	0.52	0.49
Rv3874_FIND_A.1	113	0.431	0.43	0.44
Rv1860_IDRI	223	0.431	0.48	0.46
Rv1984c_FIND_A.6	170	0.426	0.48	0.44
Rv1837c_FIND_A.3	247	0.423	0.48	0.49
Rv3875_FIND_A7	55	0.421	0.43	0.44
Rv2875_IDRI	397	0.418	0.52	0.44
Rv1242_FIND_A.2.ls	77	0.417	0.52	0.39
Rv2282_FIND_A.2.ss	77	0.414	0.43	0.46
Rv2746c_FIND_A7	47	0.413	0.43	0.44
Rv0798c_FIND_A.2.ls	283	0.412	0.52	0.49

Rv2927_FIND_A.1	1117	0.411	0.43	0.44
Rv1984_FIND_A.2.ss	171	0.41	0.52	0.49
Rv3878_FIND_A.1	50	0.408	0.43	0.43
Rv3881_IDRI	181	0.408	0.43	0.41
Rv3326_FIND	120	0.408	0.43	0.39
Rv2031c_FIND_A.1	49	0.404	0.48	0.43
Rv3762c_FIND_A.3	333	0.402	0.48	0.49
Rv0394_FIND_A.3	116	0.401	0.43	0.44
Rv1175c_FIND_A.6.2nd.coupling	261	0.401	0.43	0.44
Rv2544_FIND_A.4	110	0.401	0.43	0.46
Rv0801_FIND_A.2.ls	299	0.4	0.43	0.44
Rv3362_FIND_A.2.ss	105	0.399	0.43	0.43
Rv3326_FIND_A.6	157	0.396	0.48	0.49
Rv2094c_FIND_A.6	104	0.392	0.43	0.43
Rv3243_FIND_A.2.ls	466	0.391	0.48	0.49
Rv3326_FIND_A.2.ss	100	0.391	0.43	0.43
Rv2873_FIND_A.6	87	0.39	0.43	0.39
Rv3616_FIND	128	0.39	0.39	0.39
Rv0212_FIND_A.2.ss	184	0.388	0.48	0.49
Rv3050_FIND_A.2.ss	154	0.388	0.48	0.48
Rv0984_FIND_A.3	543	0.386	0.48	0.46
Rv3775_FIND_A.2.ss	142	0.384	0.48	0.44
Rv0379_FIND_A.1	70	0.38	0.48	0.46
Rv2870_FIND_A.4	154	0.379	0.48	0.43
Rv3376_FIND_A.3	141	0.378	0.48	0.44
Rv3319_FIND_A.2.ss	157	0.375	0.52	0.41
Rv3362_FIND	143	0.369	0.43	0.43
Rv0944_FIND_A.4	711	0.368	0.43	0.39
Rv1030_FIND_A.6	67	0.366	0.39	0.39
Rv2252.T01_FIND_A.2.ls	210	0.362	0.43	0.41

Rv3362c_FIND_A.6	169	0.362	0.39	0.39
Rv1411c_FIND_A.1	28	0.35	0.43	0.38
Rv1860_FIND_A.1	144	0.347	0.35	0.36
Rv3763_FIND_A.3	208	0.347	0.39	0.38
Rv2618_FIND_A.4	58	0.343	0.48	0.38

Supplementary Table S5. Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB/Mantoux TST test negative, for all ages

Antigen Name	Optimum cut-off value	AUC	Sensitivity	Specificity
Rv3875_FIND	240	0.74	0.70	0.71
Rv3804_IDRI	135	0.69	0.65	0.63
Rv0831_IDRI	693	0.69	0.65	0.66
Rv2031c.Rv2873_SSI	80	0.68	0.65	0.63
Rv3616_FIND_A.5	66	0.68	0.70	0.66
Rv2873_IDRI	128	0.68	0.65	0.68
Rv1886_IDRI	207	0.68	0.60	0.61
Rv1030intra_FIND	199	0.67	0.63	0.63
Rv2873_FIND	88	0.67	0.63	0.68
DID64_IDRI	73	0.67	0.65	0.66
Rv3841_IDRI	343	0.67	0.63	0.61
Rv1636_SSI	103	0.67	0.65	0.66
Rv1886_FIND	126	0.66	0.63	0.61
Rv1629_FIND	122	0.66	0.65	0.63
Rv3875_Lionex	193	0.66	0.63	0.61
C10.E6_IDRI	104	0.66	0.63	0.63
Rv3872_SSI	84	0.65	0.58	0.59
DID90_IDRI	113	0.65	0.60	0.63
Rv0456c_FIND_A.1	355	0.65	0.65	0.61
Rv0222_SSI	127	0.65	0.58	0.56
Rv1099_IDRI	262	0.64	0.63	0.63
Rv1980_SSI	185	0.64	0.63	0.61
Rv3874_Lionex	125	0.64	0.60	0.61

Rv0934_IDRI	192	0.64	0.63	0.59
Rv0577_SSI	197	0.64	0.65	0.59
Rv2032_IDRI	139	0.64	0.70	0.61
Rv3628_FIND_A.4	430	0.63	0.58	0.54
Rv3881c_FIND_A.1	203	0.63	0.65	0.63
Rv2396_FIND	193	0.63	0.63	0.63
Rv3495_FIND	129	0.63	0.58	0.59
Rv3354_SSI	88	0.63	0.55	0.56
Rv3874_IDRI	150	0.63	0.63	0.63
TBF10_IDRI	71	0.63	0.55	0.56
Rv3874.Rv3875_SSI	130	0.63	0.63	0.63
Rv2220_IDRI	505	0.62	0.60	0.61
Rv1175_FIND	101	0.62	0.58	0.59
Rv0934_FIND_A.1	85	0.62	0.60	0.59
Rv2875_FIND	178	0.62	0.60	0.61
Rv3810_FIND	92	0.61	0.55	0.56
Rv3864_FIND_A.5	62	0.61	0.65	0.63
Rv2462c_SSI	131	0.60	0.58	0.59
Rv0394_FIND_A.3	103	0.60	0.58	0.56
Rv3804c_FIND_A.1	145	0.60	0.63	0.56
Rv0272_FIND_A.2.ss	139	0.59	0.58	0.59
Rv1196_FIND_A.3	139	0.59	0.60	0.59
Rv3326_FIND	120	0.59	0.55	0.54
Antigen.Cocktail.V_Lionex	100	0.58	0.65	0.56
Rv1629_FIND_A.6	122	0.58	0.55	0.54
Rv2396_FIND_A7	450	0.58	0.63	0.54
Rv1586c_SSI	323	0.58	0.60	0.59
Rv3879c.amino.acids.1.181_SSI	150	0.58	0.63	0.51
Rv2151_FIND_A.4	85	0.58	0.58	0.59
Rv3881_IDRI	179	0.58	0.53	0.54

Rv3248_FIND_A.1	169	0.57	0.55	0.56
Rv3616_FIND	126	0.57	0.53	0.54
Rv1387_FIND_A7	91	0.57	0.65	0.54
Rv1886c_FIND_A.6	76	0.57	0.58	0.56
Rv2544_FIND_A.4	107	0.56	0.53	0.54
Rv3326_FIND_A.6	130	0.56	0.60	0.56
Rv3362_FIND	138	0.56	0.55	0.54
Rv2870_FIND_A.4	154	0.56	0.58	0.54
Rv3495c_FIND_A.6	67	0.56	0.53	0.54
Rv1980_IDRI	414	0.56	0.60	0.56
Rv1566c_FIND_A.1	184	0.55	0.53	0.54
Rv3874_FIND_A.1	104	0.55	0.50	0.51
Rv2875_IDRI	346	0.55	0.55	0.56
Rv3362c_FIND_A.6	156	0.55	0.55	0.54
Rv2984_FIND_A.4	92	0.55	0.58	0.56
Rv3775_FIND_A.2.ss	123	0.54	0.58	0.54
Rv2031_IDRI	45	0.54	0.55	0.51
Rv1030extern_FIND	146	0.54	0.58	0.54
Rv3878_FIND_A.1	46	0.54	0.53	0.54
Rv1175c_FIND_A.6.2nd.coupling	220	0.54	0.53	0.54
Rv3326_FIND_A.2.ss	79	0.54	0.58	0.56
Rv1984_IDRI	301	0.54	0.55	0.54
Rv2094c_FIND_A.6	93	0.54	0.55	0.54
Rv2094_FIND	148	0.54	0.53	0.51
Rv2031c_FIND_A.1	45	0.53	0.65	0.54
Rv1860_Lionex	115	0.53	0.55	0.56
Rv0212_FIND_A.2.ss	146	0.53	0.55	0.54
Rv0798c_FIND_A.2.ls	189	0.53	0.55	0.51
Rv3875_FIND_A7	42	0.53	0.65	0.49
Rv1009_IDRI	314	0.53	0.58	0.59

Rv1242_FIND_A.2.ls	65	0.53	0.58	0.51
Rv2618_FIND_A.4	58	0.53	0.58	0.54
Rv3362_FIND_A.2.ss	101	0.53	0.50	0.51
Rv0302_FIND_A.3	165	0.52	0.55	0.54
Rv2875_FIND_A.6	115	0.52	0.50	0.51
Rv1860_IDRI	194	0.52	0.53	0.54
Rv1984_SSI	225	0.52	0.53	0.54
Rv0632c_FIND_A.3	633	0.52	0.53	0.49
Rv3243_FIND_A.2.ls	339	0.52	0.55	0.56
Rv3762c_FIND_A.3	251	0.52	0.53	0.51
Rv1984_FIND_A.2.ss	148	0.52	0.50	0.56
Rv0440_FIND_A.4	221	0.51	0.50	0.49
Rv1030_FIND_A.6	64	0.51	0.48	0.49
Rv1980c_FIND_A.3	326	0.51	0.55	0.56
Rv3810_FIND_A7	31	0.51	0.50	0.49
Rv0801_FIND_A.2.ls	213	0.51	0.55	0.51
Rv3050_FIND_A.2.ss	125	0.51	0.48	0.49
Rv2282_FIND_A.2.ss	60	0.51	0.50	0.51
Rv1837c_FIND_A.3	165	0.50	0.53	0.49
Rv2252.T01_FIND_A.2.ls	161	0.50	0.53	0.54
Rv2746c_FIND_A7	40	0.50	0.48	0.49
Rv2185c_SSI	304	0.50	0.53	0.49
Rv0379_FIND_A.1	66	0.50	0.55	0.56
Rv3319_FIND_A.2.ss	135	0.50	0.60	0.51
Rv1926c_FIND_A.3	202	0.49	0.53	0.49
Rv2873_FIND_A.6	71	0.49	0.53	0.49
Rv1284_FIND_A.1	706	0.49	0.50	0.51
Rv2927_FIND_A.1	803	0.49	0.55	0.51
Rv1411c_FIND_A.1	28	0.49	0.50	0.49
Rv1984c_FIND_A.6	142	0.47	0.53	0.49

Rv0984_FIND_A.3	371	0.47	0.55	0.54
Rv3763_FIND_A.3	148	0.47	0.55	0.44
Rv3376_FIND_A.3	127	0.46	0.45	0.46
Rv0583c_FIND_A.3	1963	0.46	0.53	0.51
Rv1860_FIND_A.1	104	0.44	0.53	0.46
Rv0944_FIND_A.4	697	0.44	0.45	0.46

Supplementary Table S6. Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unlikely TB/Mantoux TST test positive, for all ages

Antigen Name	Optimum cut-off value	AUC	Sensitivity	Specificity
DID64_IDRI	95	0.59	0.60	0.64
Rv3804c_FIND_A.1	168	0.56	0.50	0.49
DID90_IDRI	147	0.53	0.55	0.56
TBF10_IDRI	106	0.52	0.53	0.54
Rv3628_FIND_A.4	630	0.52	0.50	0.51
Rv3616_FIND_A.5	109	0.51	0.50	0.51
Rv3874_Lionex	155	0.50	0.48	0.49
Rv0583c_FIND_A.3	1944	0.50	0.53	0.54
Rv0632c_FIND_A.3	633	0.50	0.53	0.54
C10.E6_IDRI	140	0.48	0.48	0.46
Rv2220_IDRI	623	0.48	0.53	0.54
Rv3874.Rv3875_SSI	192	0.47	0.50	0.51
Rv1009_IDRI	439	0.47	0.53	0.54
Rv3881c_FIND_A.1	352	0.47	0.50	0.51
Rv3864_FIND_A.5	79	0.46	0.50	0.46
Rv3874_IDRI	204	0.46	0.45	0.46
Rv1636_SSI	128	0.46	0.55	0.49
Rv3875_FIND	342	0.46	0.53	0.51
Rv0831_IDRI	930	0.44	0.45	0.46
Rv1886_IDRI	283	0.44	0.50	0.49
Rv2873_FIND	109	0.44	0.55	0.49
Rv3804_IDRI	207	0.44	0.45	0.46
Rv3875_Lionex	248	0.43	0.48	0.46
Rv3495_FIND	167	0.43	0.48	0.46

Rv0934_IDRI	303	0.43	0.45	0.46
Rv2032_IDRI	191	0.43	0.43	0.44
Rv1886_FIND	171	0.43	0.48	0.49
Rv2875_FIND_A.6	130	0.43	0.43	0.44
Rv1980c_FIND_A.3	364	0.43	0.50	0.44
Rv0934_FIND_A.1	114	0.43	0.40	0.41
Rv1629_FIND	151	0.43	0.50	0.46
Rv1926c_FIND_A.3	202	0.42	0.53	0.44
Rv3874_FIND_A.1	160	0.42	0.43	0.44
Rv1980_SSI	219	0.42	0.48	0.49
Rv2873_IDRI	172	0.42	0.45	0.46
Rv3354_SSI	110	0.42	0.50	0.51
Rv1886c_FIND_A.6	91	0.42	0.50	0.46
Rv2031_IDRI	49	0.42	0.48	0.44
Antigen.Cocktail.V_Lionex	145	0.41	0.45	0.44
Rv3872_SSI	109	0.41	0.48	0.49
Rv3810_FIND	128	0.41	0.48	0.46
Rv2875_FIND	255	0.41	0.48	0.49
Rv1984_IDRI	349	0.41	0.45	0.46
Rv1099_IDRI	416	0.41	0.43	0.41
Rv0456c_FIND_A.1	582	0.41	0.48	0.41
Rv2875_IDRI	510	0.40	0.43	0.44
Rv2031c.Rv2873_SSI	115	0.40	0.50	0.44
Rv0222_SSI	182	0.40	0.45	0.44
Rv1030intra_FIND	281	0.40	0.45	0.46
Rv1387_FIND_A7	131	0.40	0.45	0.44
Rv1196_FIND_A.3	183	0.40	0.40	0.41
Rv3326_FIND	155	0.40	0.40	0.41
Rv2396_FIND	347	0.40	0.38	0.38
Rv0302_FIND_A.3	196	0.39	0.45	0.41

Rv0379_FIND_A.1	85	0.39	0.45	0.44
Rv3875_FIND_A7	57	0.39	0.45	0.46
Rv2462c_SSI	156	0.39	0.43	0.41
Rv1629_FIND_A.6	130	0.39	0.48	0.41
Rv3248_FIND_A.1	224	0.39	0.48	0.41
Rv1566c_FIND_A.1	281	0.39	0.45	0.46
Rv2396_FIND_A7	1624	0.39	0.43	0.41
Rv3495c_FIND_A.6	78	0.39	0.43	0.44
Rv0272_FIND_A.2.ss	161	0.39	0.43	0.38
Rv2094c_FIND_A.6	114	0.39	0.38	0.38
Rv3879c.amino.acids.1.181_SSI	212	0.39	0.48	0.38
Rv3881_IDRI	204	0.38	0.43	0.41
Rv1984_SSI	277	0.38	0.40	0.41
Rv3616_FIND	169	0.38	0.43	0.44
Rv0394_FIND_A.3	149	0.38	0.43	0.44
Rv0440_FIND_A.4	262	0.38	0.45	0.38
Rv2746c_FIND_A7	47	0.38	0.40	0.41
Rv3362_FIND	179	0.38	0.43	0.41
Rv1175_FIND	138	0.38	0.43	0.41
Rv2544_FIND_A.4	122	0.37	0.43	0.38
Rv1860_Lionex	125	0.37	0.45	0.44
Rv3810_FIND_A7	37	0.37	0.38	0.44
Rv2151_FIND_A.4	124	0.37	0.38	0.38
Rv0944_FIND_A.4	885	0.37	0.40	0.38
Rv2870_FIND_A.4	213	0.37	0.40	0.41
Rv2984_FIND_A.4	113	0.37	0.45	0.41
Rv2031c_FIND_A.1	56	0.36	0.40	0.36
Rv3362c_FIND_A.6	212	0.36	0.43	0.36
Rv1860_IDRI	247	0.36	0.45	0.41
Rv1980_IDRI	510	0.36	0.40	0.36

Rv3362_FIND_A.2.ss	117	0.36	0.38	0.38
Rv1984_FIND_A.2.ss	183	0.35	0.43	0.44
Rv3762c_FIND_A.3	335	0.35	0.43	0.44
Rv2094_FIND	193	0.35	0.38	0.36
Rv3326_FIND_A.6	160	0.35	0.45	0.41
Rv2282_FIND_A.2.ss	77	0.35	0.38	0.38
Rv2618_FIND_A.4	68	0.35	0.33	0.31
Rv1175c_FIND_A.6.2nd.coupling	282	0.35	0.40	0.36
Rv1984c_FIND_A.6	178	0.35	0.38	0.36
Rv3376_FIND_A.3	141	0.35	0.40	0.41
Rv3841_IDRI	426	0.35	0.40	0.38
Rv0984_FIND_A.3	503	0.35	0.45	0.41
Rv1284_FIND_A.1	938	0.34	0.35	0.33
Rv2185c_SSI	353	0.34	0.40	0.33
Rv1242_FIND_A.2.ls	89	0.33	0.35	0.36
Rv1030extern_FIND	201	0.33	0.38	0.36
Rv0798c_FIND_A.2.ls	283	0.33	0.43	0.41
Rv0577_SSI	322	0.33	0.35	0.36
Rv2873_FIND_A.6	92	0.33	0.38	0.38
Rv3878_FIND_A.1	55	0.33	0.38	0.36
Rv1030_FIND_A.6	78	0.32	0.40	0.38
Rv3775_FIND_A.2.ss	159	0.32	0.38	0.36
Rv1837c_FIND_A.3	254	0.31	0.38	0.36
Rv1411c_FIND_A.1	34	0.31	0.33	0.33
Rv3326_FIND_A.2.ss	98	0.31	0.43	0.31
Rv3763_FIND_A.3	214	0.31	0.33	0.33
Rv1586c_SSI	475	0.31	0.35	0.36
Rv2252.T01_FIND_A.2.ls	210	0.31	0.40	0.36
Rv0212_FIND_A.2.ss	178	0.31	0.45	0.36
Rv3243_FIND_A.2.ls	476	0.31	0.40	0.38

Rv2927_FIND_A.1	1281	0.30	0.33	0.31
Rv3050_FIND_A.2.ss	164	0.30	0.40	0.33
Rv0801_FIND_A.2.ls	307	0.30	0.35	0.36
Rv3319_FIND_A.2.ss	185	0.29	0.33	0.33
Rv1860_FIND_A.1	144	0.27	0.33	0.33

Supplementary Table S7. Optimum cut-off values and area under the curve (AUC) for single antigens for discrimination between children classified as Definite TB versus children classified as Unconfirmed TB, for all ages

Antigen Name	Optimum cut-off value	AUC	Sensitivity	Specificity
Rv1886_FIND	131	0.63	0.60	0.62
Rv2220_IDRI	496	0.62	0.60	0.62
Rv3804c_FIND_A.1	154	0.61	0.55	0.51
DID64_IDRI	108	0.61	0.60	0.62
C10.E6_IDRI	115	0.60	0.60	0.59
Rv3495_FIND	129	0.60	0.58	0.56
Rv1636_SSI	105	0.60	0.63	0.64
Rv3874_Lionex	134	0.60	0.60	0.59
TBF10_IDRI	84	0.59	0.53	0.54
Rv1980_SSI	188	0.59	0.60	0.62
Rv3354_SSI	88	0.59	0.55	0.62
Rv3875_FIND	309	0.59	0.60	0.62
Rv1886_IDRI	216	0.58	0.55	0.56
Rv3874.Rv3875_SSI	136	0.58	0.60	0.54
Rv3875_Lionex	205	0.58	0.58	0.56
Rv1030extern_FIND	149	0.58	0.55	0.56
Rv3628_FIND_A.4	521	0.57	0.53	0.54
Rv1099_IDRI	299	0.57	0.58	0.54
Rv1175_FIND	101	0.57	0.58	0.54
Rv2875_FIND	184	0.57	0.60	0.59
Rv2873_IDRI	146	0.57	0.60	0.62
Rv3804_IDRI	184	0.57	0.55	0.56
Rv3874_IDRI	167	0.56	0.58	0.54

Rv3872_SSI	92	0.56	0.58	0.59
Rv0222_SSI	144	0.56	0.53	0.54
Rv1629_FIND	133	0.56	0.58	0.56
Rv2094_FIND	128	0.56	0.58	0.54
DID90_IDRI	137	0.56	0.55	0.56
Rv2032_IDRI	155	0.56	0.55	0.49
Rv1030intra_FIND	222	0.56	0.55	0.54
Rv0831_IDRI	844	0.55	0.55	0.56
Rv1009_IDRI	377	0.55	0.55	0.56
Rv2875_IDRI	336	0.55	0.58	0.56
Rv3616_FIND_A.5	93	0.54	0.55	0.54
Rv3810_FIND	99	0.54	0.53	0.51
Rv3881c_FIND_A.1	227	0.53	0.60	0.54
Rv3881_IDRI	181	0.53	0.53	0.49
Rv0272_FIND_A.2.ss	139	0.53	0.58	0.54
Rv0934_FIND_A.1	88	0.53	0.55	0.56
Rv2462c_SSI	131	0.53	0.58	0.54
Rv3879c.amino.acids.1.181_SSI	180	0.53	0.50	0.51
Antigen.Cocktail.V_Lionex	122	0.53	0.48	0.49
Rv2031c.Rv2873_SSI	108	0.52	0.55	0.54
Rv0456c_FIND_A.1	495	0.52	0.53	0.51
Rv0934_IDRI	247	0.52	0.58	0.51
Rv1926c_FIND_A.3	202	0.52	0.53	0.54
Rv2984_FIND_A.4	102	0.52	0.50	0.54
Rv0394_FIND_A.3	115	0.51	0.55	0.56
Rv2870_FIND_A.4	163	0.51	0.53	0.54
Rv1886c_FIND_A.6	90	0.51	0.50	0.51
Rv0632c_FIND_A.3	633	0.51	0.53	0.51
Rv2185c_SSI	317	0.51	0.50	0.51
Rv1984_IDRI	326	0.50	0.53	0.49

Rv3495c_FIND_A.6	71	0.50	0.50	0.51
Rv3326_FIND	127	0.50	0.53	0.46
Rv3875_FIND_A7	47	0.50	0.50	0.51
Rv1196_FIND_A.3	162	0.50	0.50	0.51
Rv3616_FIND	140	0.50	0.48	0.49
Rv3362_FIND	142	0.50	0.53	0.49
Rv1980c_FIND_A.3	361	0.50	0.53	0.54
Rv2746c_FIND_A7	39	0.50	0.48	0.49
Rv3874_FIND_A.1	111	0.49	0.50	0.51
Rv1586c_SSI	336	0.49	0.55	0.51
Rv0379_FIND_A.1	70	0.49	0.55	0.51
Rv2544_FIND_A.4	114	0.48	0.48	0.49
Rv2282_FIND_A.2.ss	55	0.48	0.55	0.46
Rv1984_SSI	250	0.48	0.50	0.51
Rv1387_FIND_A7	112	0.48	0.50	0.51
Rv1629_FIND_A.6	130	0.48	0.48	0.46
Rv3248_FIND_A.1	209	0.48	0.50	0.49
Rv3841_IDRI	394	0.48	0.50	0.51
Rv2873_FIND	128	0.48	0.48	0.49
Rv2875_FIND_A.6	132	0.48	0.43	0.44
Rv1242_FIND_A.2.ls	76	0.47	0.48	0.49
Rv2151_FIND_A.4	99	0.47	0.50	0.51
Rv3362_FIND_A.2.ss	103	0.47	0.48	0.46
Rv1980_IDRI	492	0.47	0.40	0.41
Rv3864_FIND_A.5	81	0.47	0.48	0.49
Rv0577_SSI	261	0.47	0.53	0.46
Rv1860_Lionex	119	0.47	0.53	0.51
Rv1984_FIND_A.2.ss	160	0.47	0.50	0.49
Rv2031_IDRI	49	0.46	0.48	0.44
Rv2927_FIND_A.1	948	0.46	0.45	0.44

Rv3362c_FIND_A.6	196	0.45	0.45	0.46
Rv3376_FIND_A.3	118	0.45	0.48	0.49
Rv3326_FIND_A.6	157	0.45	0.48	0.49
Rv3763_FIND_A.3	167	0.44	0.48	0.46
Rv2873_FIND_A.6	78	0.44	0.48	0.49
Rv0212_FIND_A.2.ss	178	0.44	0.45	0.46
Rv1860_IDRI	223	0.43	0.50	0.51
Rv3050_FIND_A.2.ss	147	0.43	0.45	0.46
Rv3878_FIND_A.1	50	0.43	0.45	0.44
Rv2396_FIND	312	0.42	0.43	0.44
Rv0944_FIND_A.4	617	0.42	0.50	0.49
Rv1837c_FIND_A.3	213	0.42	0.43	0.44
Rv1984c_FIND_A.6	167	0.42	0.48	0.46
Rv2252.T01_FIND_A.2.ls	170	0.42	0.50	0.44
Rv0440_FIND_A.4	262	0.41	0.45	0.46
Rv3326_FIND_A.2.ss	85	0.41	0.53	0.46
Rv1566c_FIND_A.1	284	0.41	0.45	0.46
Rv0798c_FIND_A.2.ls	271	0.41	0.48	0.46
Rv1030_FIND_A.6	72	0.40	0.45	0.41
Rv2031c_FIND_A.1	55	0.40	0.40	0.41
Rv0984_FIND_A.3	470	0.40	0.48	0.49
Rv0801_FIND_A.2.ls	227	0.40	0.48	0.46
Rv3319_FIND_A.2.ss	142	0.40	0.55	0.41
Rv3762c_FIND_A.3	301	0.40	0.45	0.44
Rv0583c_FIND_A.3	2042	0.40	0.50	0.44
Rv3775_FIND_A.2.ss	135	0.40	0.53	0.41
Rv2396_FIND_A7	1624	0.39	0.43	0.44
Rv2094c_FIND_A.6	109	0.39	0.40	0.41
Rv1175c_FIND_A.6.2nd.couplin g	243	0.39	0.45	0.46

Rv3243_FIND_A.2.ls	352	0.39	0.53	0.44
Rv2618_FIND_A.4	62	0.39	0.40	0.41
Rv0302_FIND_A.3	229	0.38	0.40	0.41
Rv1284_FIND_A.1	883	0.37	0.40	0.41
Rv1411c_FIND_A.1	30	0.37	0.43	0.46
Rv3810_FIND_A7	38	0.36	0.38	0.38
Rv1860_FIND_A.1	125	0.32	0.35	0.33