Supplementary files

Figure S1-S7. Forest plots of IFN-γ, TNF-α, IP-10, IL-2, IL-10, IL-12 and VEGF

S1. Forest plots of sensitivity and specificity for IFN-γ

S2. Forest plots of sensitivity and specificity for TNF- α

S3. Forest plots of sensitivity and specificity for IP-10

S4. Forest plots of sensitivity and specificity for IL-2

S5. Forest plots of sensitivity and specificity for IL-10

S6. Forest plots of sensitivity and specificity for IL-12

S7. Forest plots of sensitivity and specificity for VEGF

Between-study heterogeneity was assessed by the Cochran Q statistic, where $P<0.10$ was considered statistically significant and quantified by the I^2 statistic, where $I^2 \geqslant 50\%$ indicating substantial heterogeneity.

Figure S8-S14. Summary receiver operating characteristic curves of IFN-γ, TNF-α, IP-10, IL-2, IL-10, IL-12 and VEGF

S8. SROC of IFN- γ

S9. SROC of TNF- α

S10. SROC of IP-10

S11. SROC of IL-2

S12. SROC of IL-10

S13. SROC of IL-12

S14. SROC of VEGF

SROC: summary receiver operating characteristic curve; AUC: area under the curve. The number in the circle represents the study, which has this indicator; the red diamond represents a summary operating point with sensitivity and specificity; the solid black line represents SROC curve and AUC value; the black dotted line represents 95% confidence contour; the black dotted line represents 95% prediction contour.

Figure S15-S21. Meta-regression and subgroup analyses of IFN-γ, TNF-α, IP-10, IL-2, IL-10, IL-12 and VEGF

S15. Meta-regression and subgroup analyses of IFN-γ

S16. Meta-regression and subgroup analyses of TNF-α

S17. Meta-regression and subgroup analyses of IP-10

S18. Meta-regression and subgroup analyses of IL-2

S19. Meta-regression and subgroup analyses of IL-10

S20. Meta-regression and subgroup analyses of IL-12

S21. Meta-regression and subgroup analyses of VEGF

a: whether the study type is an RCT; b: whether the inclusion and exclusion criteria of study subjects are clear; c: reference standard; d: whether the index test and the reference standard are independent; e: whether the index test is Luminex. Yes:

43 affirmative answer; No: negative answer

44

45 **Figure S22-S28. Begg's funnel plot of IFN-γ, TNF-α, IP-10, IL-2, IL-10, IL-12**

46 **and VEGF**

47 S22. Begg's funnel plot of IFN-γ

48 S23. Begg's funnel plot of TNF-α

49 S24. Begg's funnel plot of IP-10

50 S25. Begg's funnel plot of IL-2

51 S26. Begg's funnel plot of IL-10

52 S27. Begg's funnel plot of IL-12

53 S28. Begg's funnel plot of VEGF

54 The ordinate 'lnor' refers to the logarithm of the effect size OR, and the abscissa 's.e.

55 of lnor' refers to the standard error of the logarithm of the effect size OR.

56

57 **Table S1.** Search strategy

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59 **Tables S2-S8.** Meta-regression results of IFN-γ, TNF-α, IP-10, IL-2, IL-10, IL-12

60 and VEGF

61

62 **Table S9.** The results of Egger's test and Begg's test

63

64

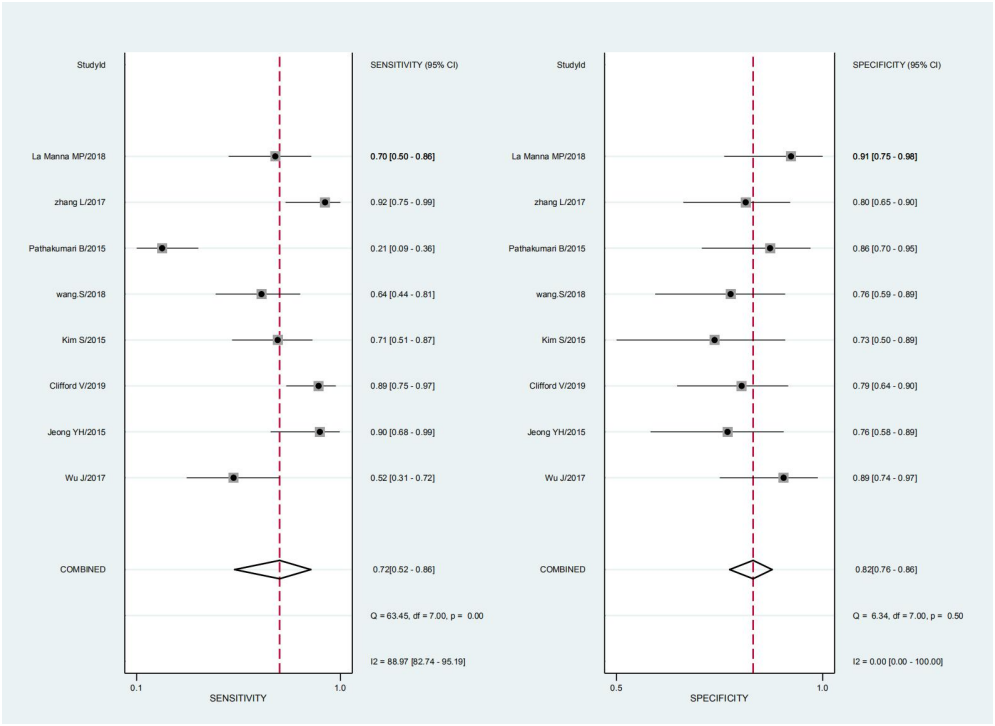

Figure S1. Forest plots of sensitivity and specificity for IFN-γ

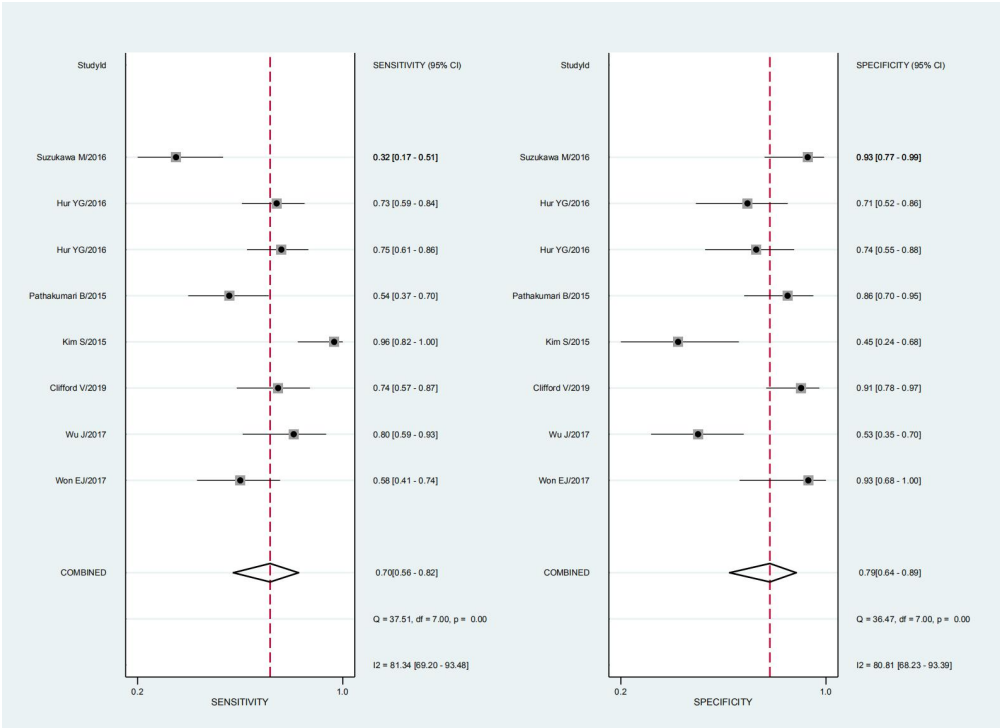

Figure S2. Forest plots of sensitivity and specificity for TNF- α

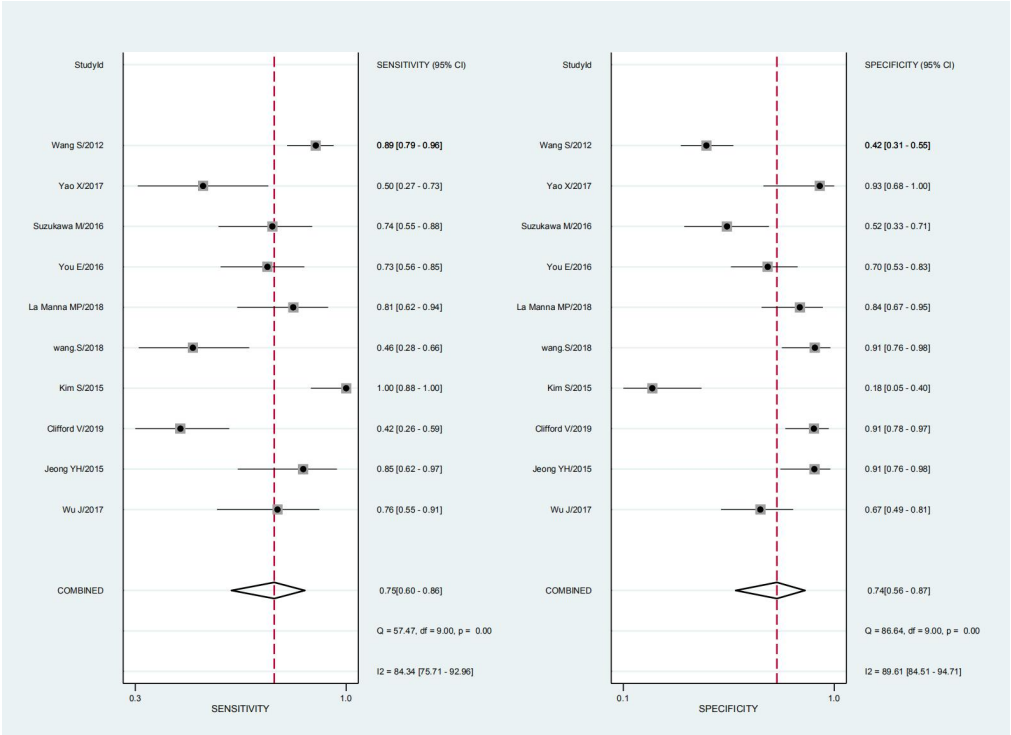

Figure S3. Forest plots of sensitivity and specificity for IP-10

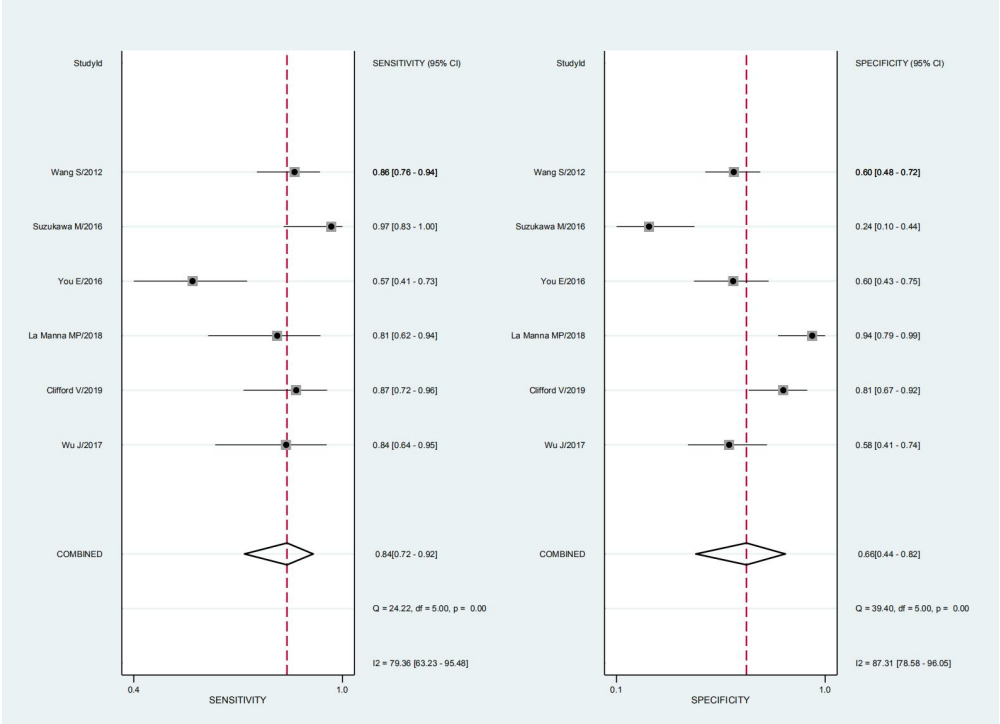

Figure S4. Forest plots of sensitivity and specificity for IL-2

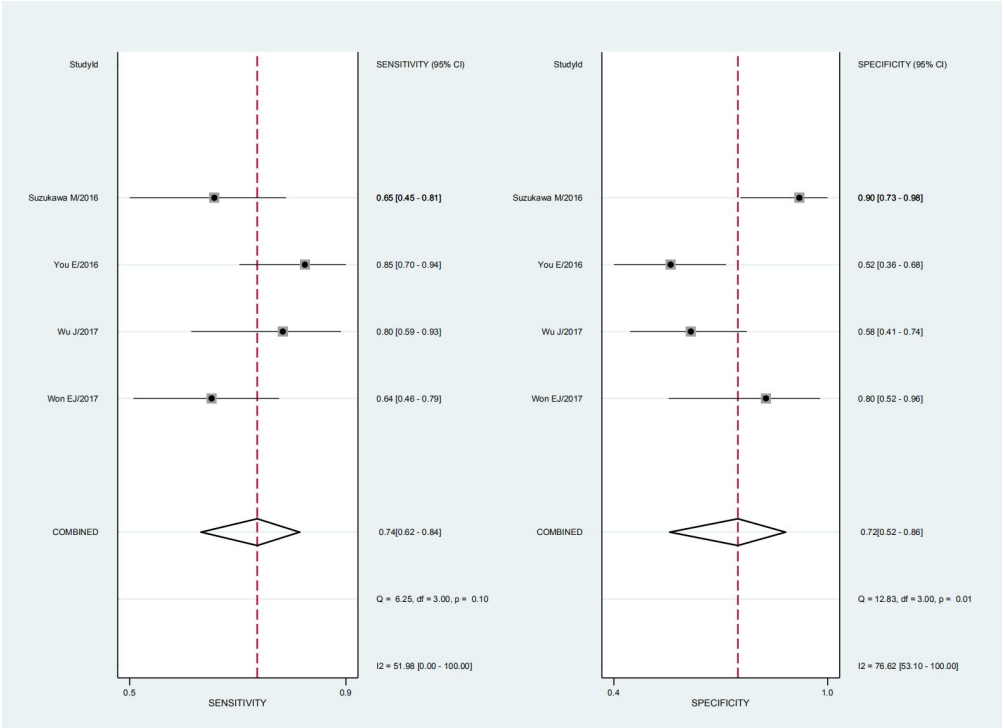

Figure S5. Forest plots of sensitivity and specificity for IL-10

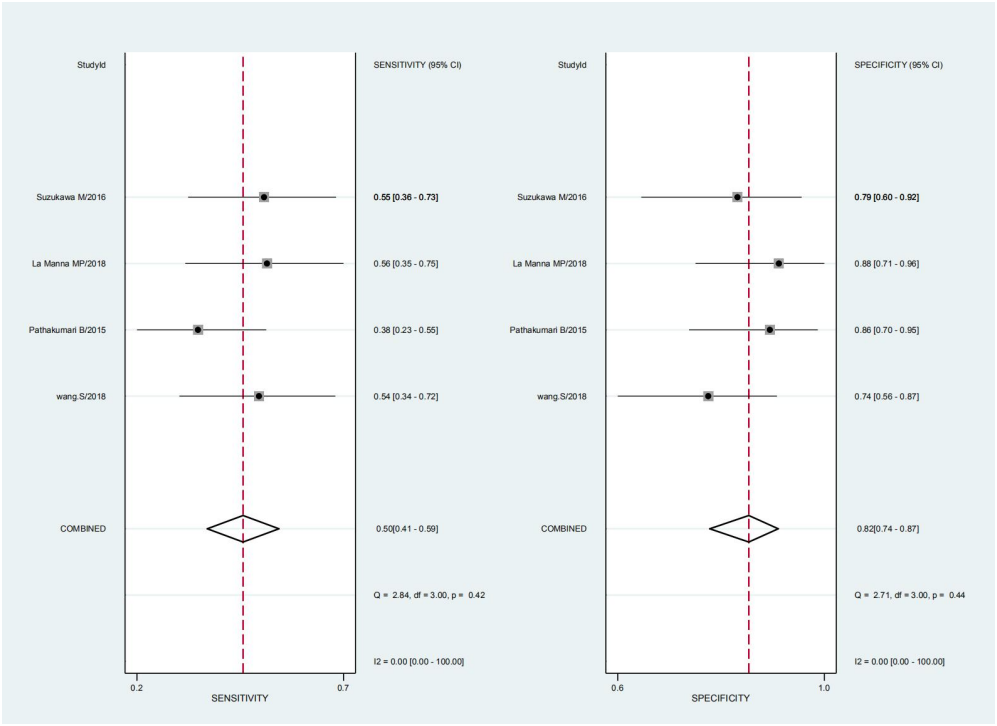

Figure S6. Forest plots of sensitivity and specificity for IL-12

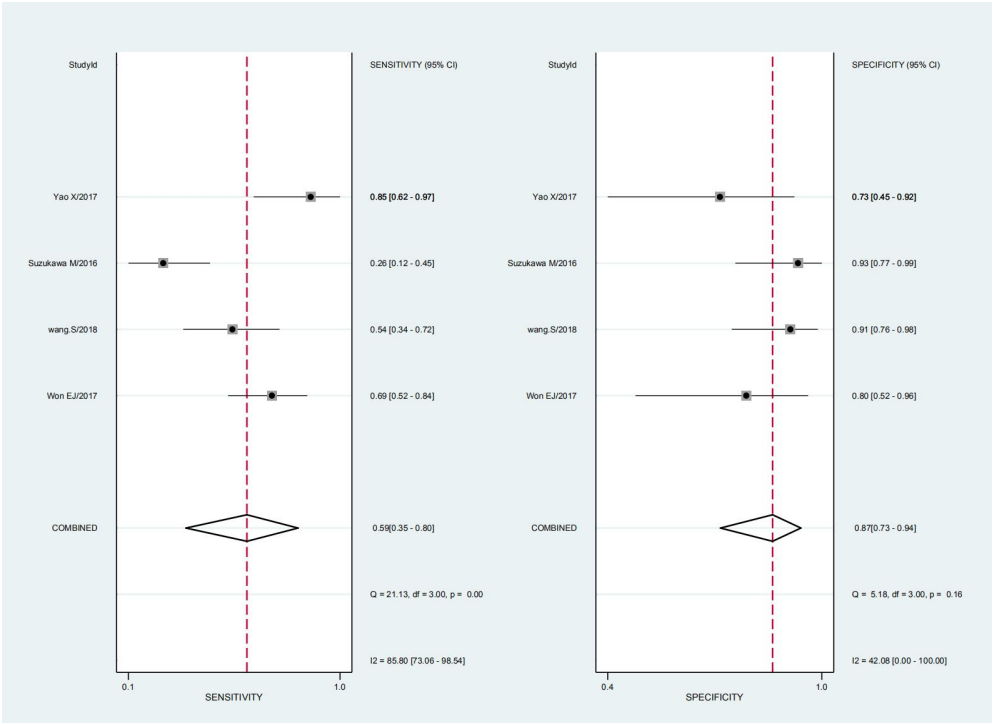

Figure S7. Forest plots of sensitivity and specificity for VEGF

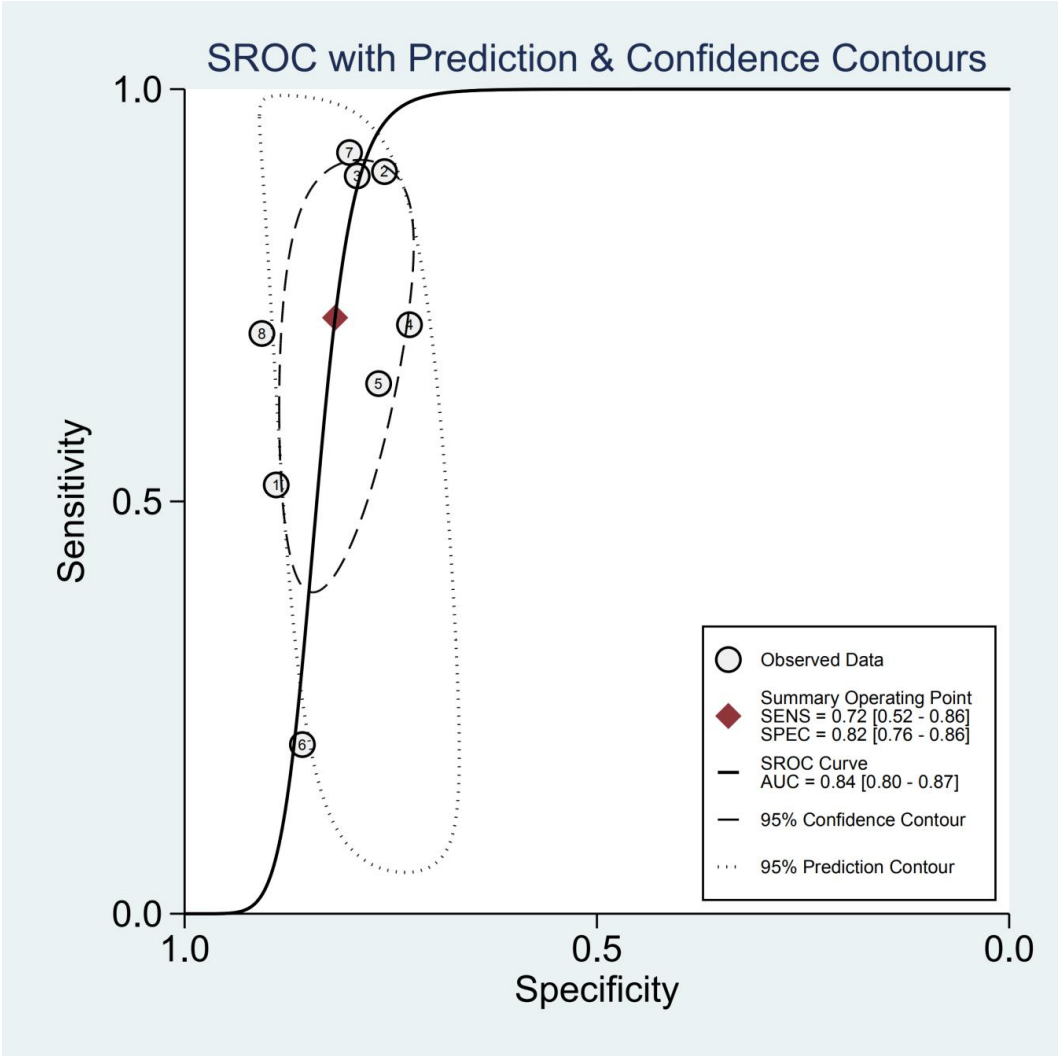

Figure S8. SROC of IFN- γ

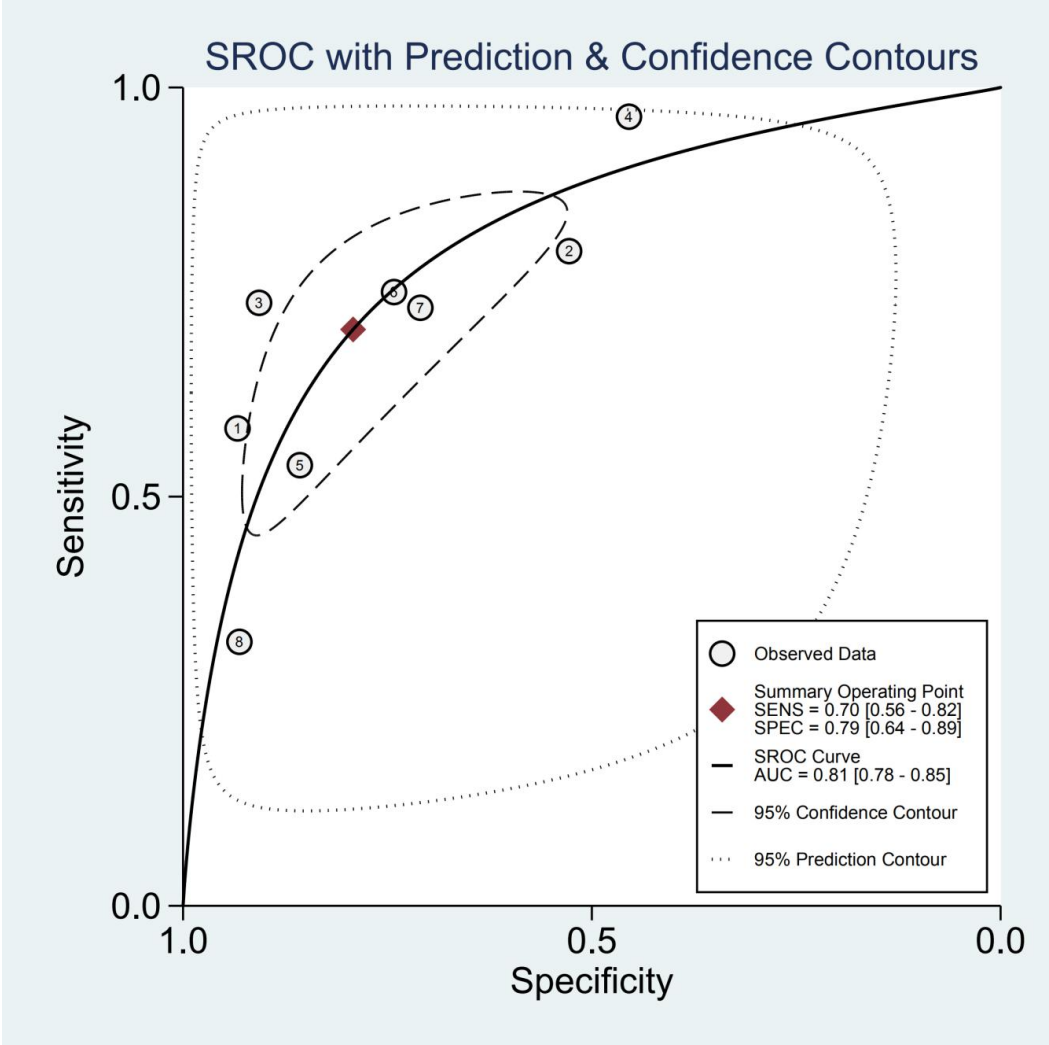

Figure S9. SROC of TNF- α

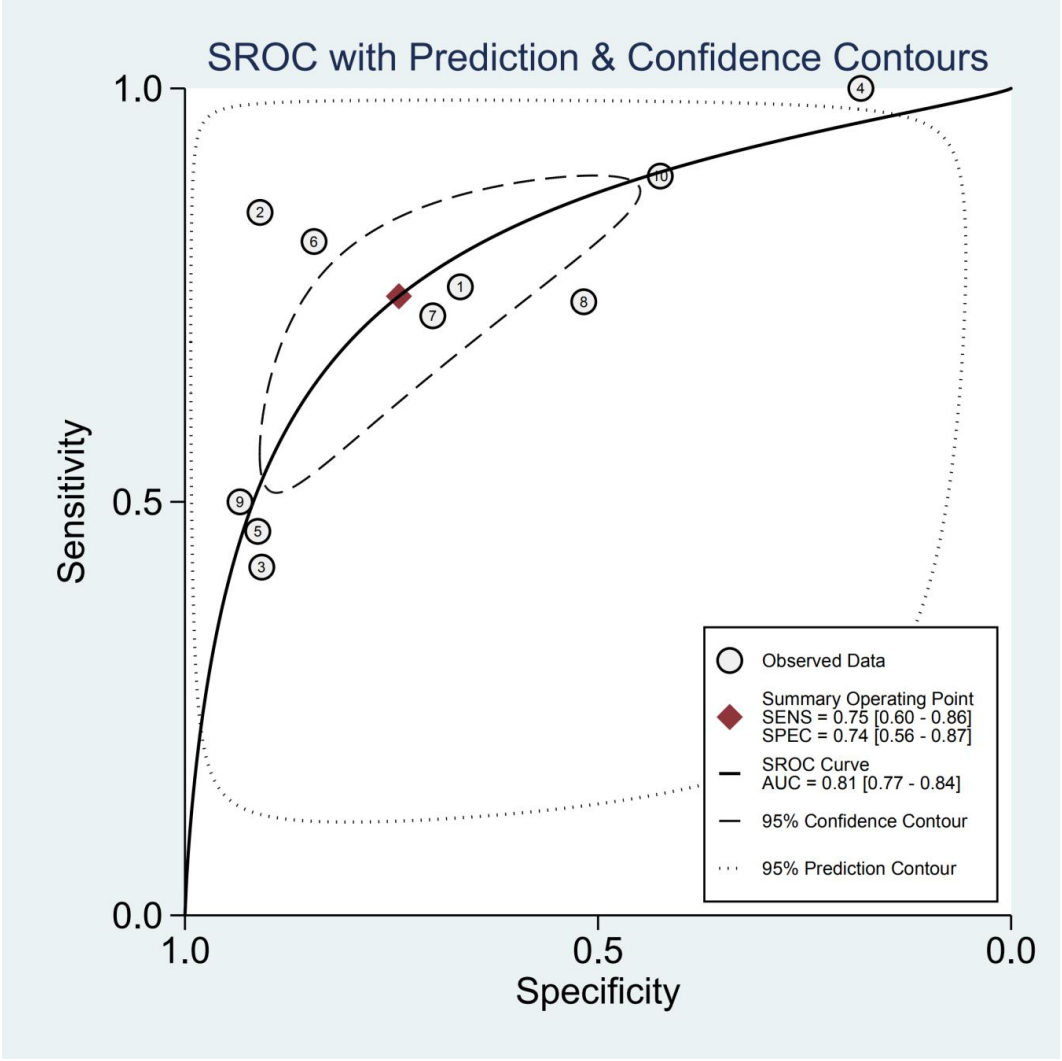

Figure S10. SROC of IP-10

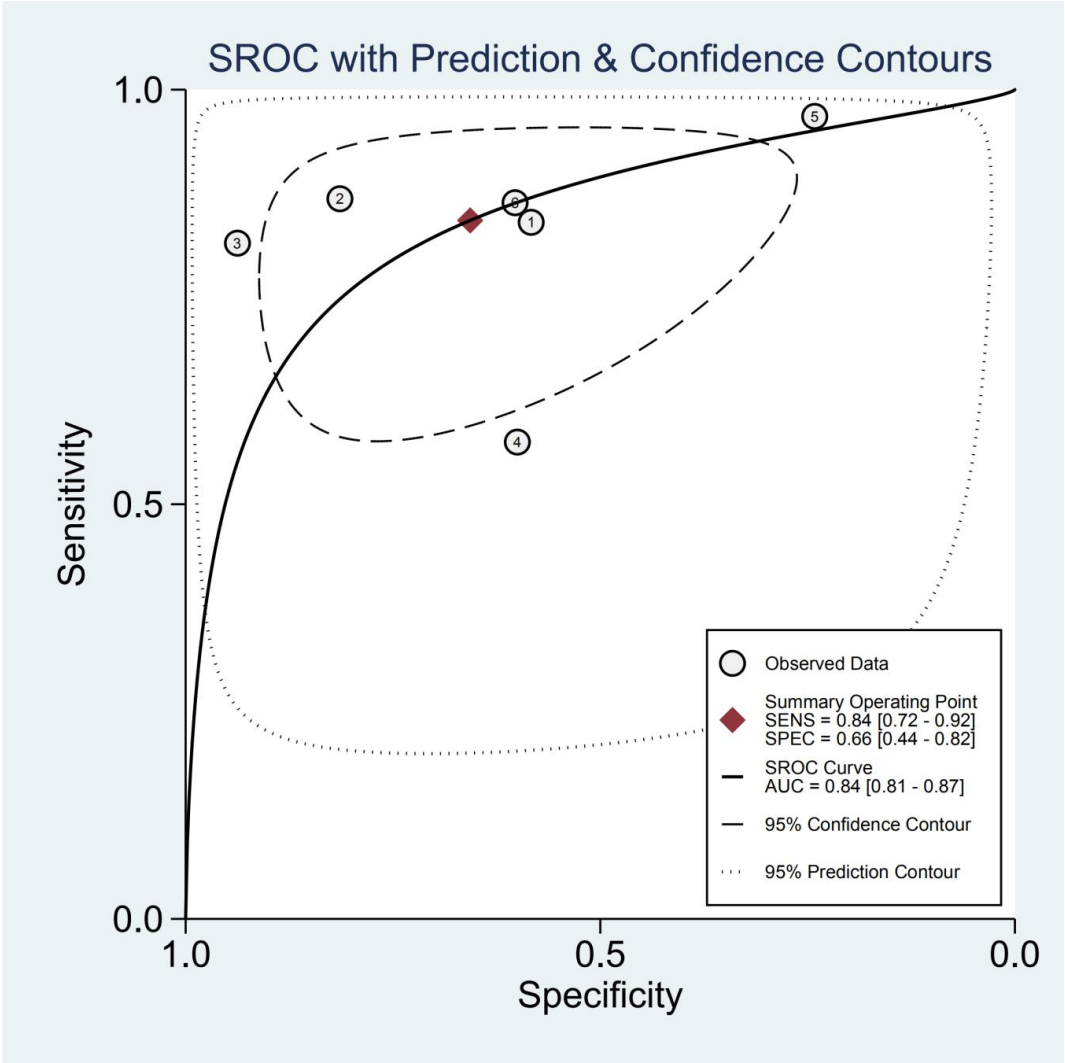

Figure S11. SROC of IL-2

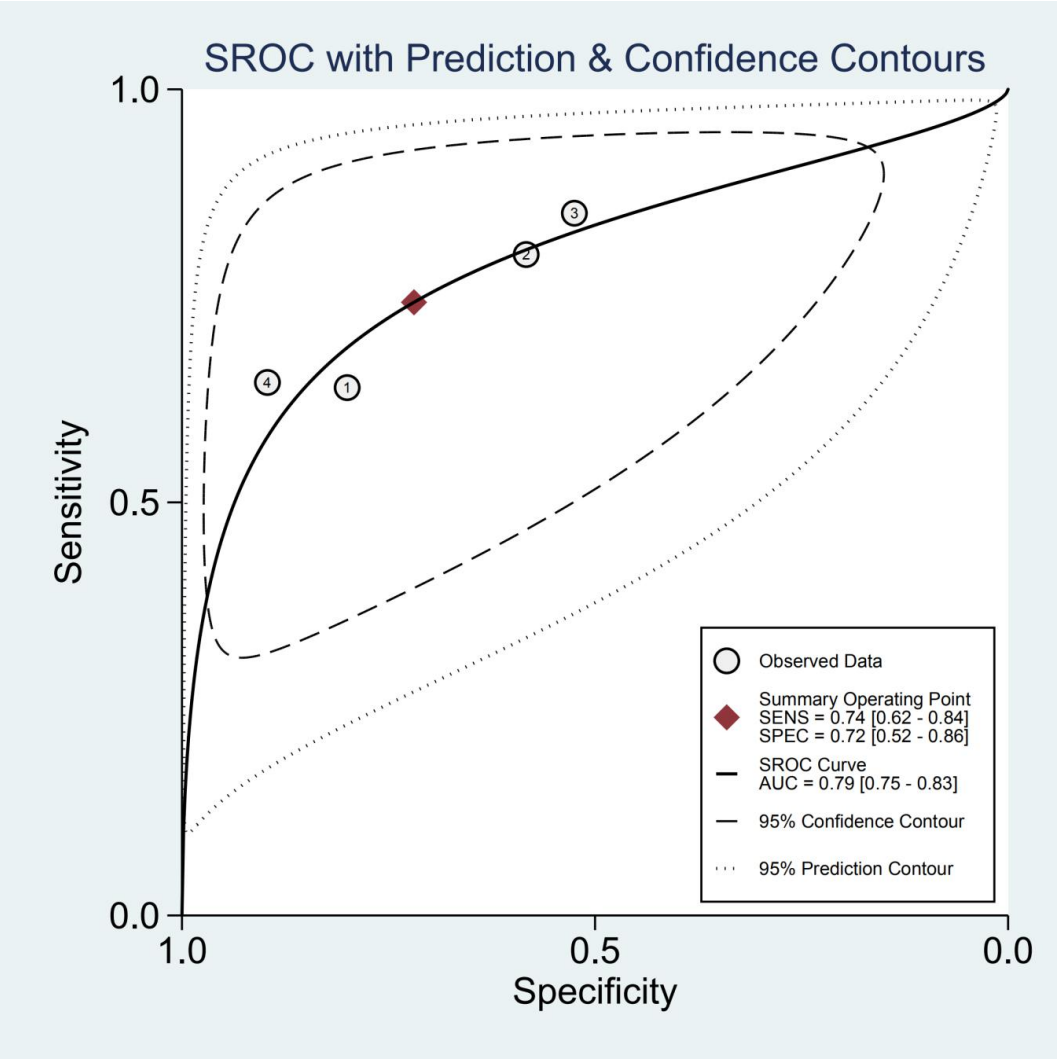

Figure S12. SROC of IL-10

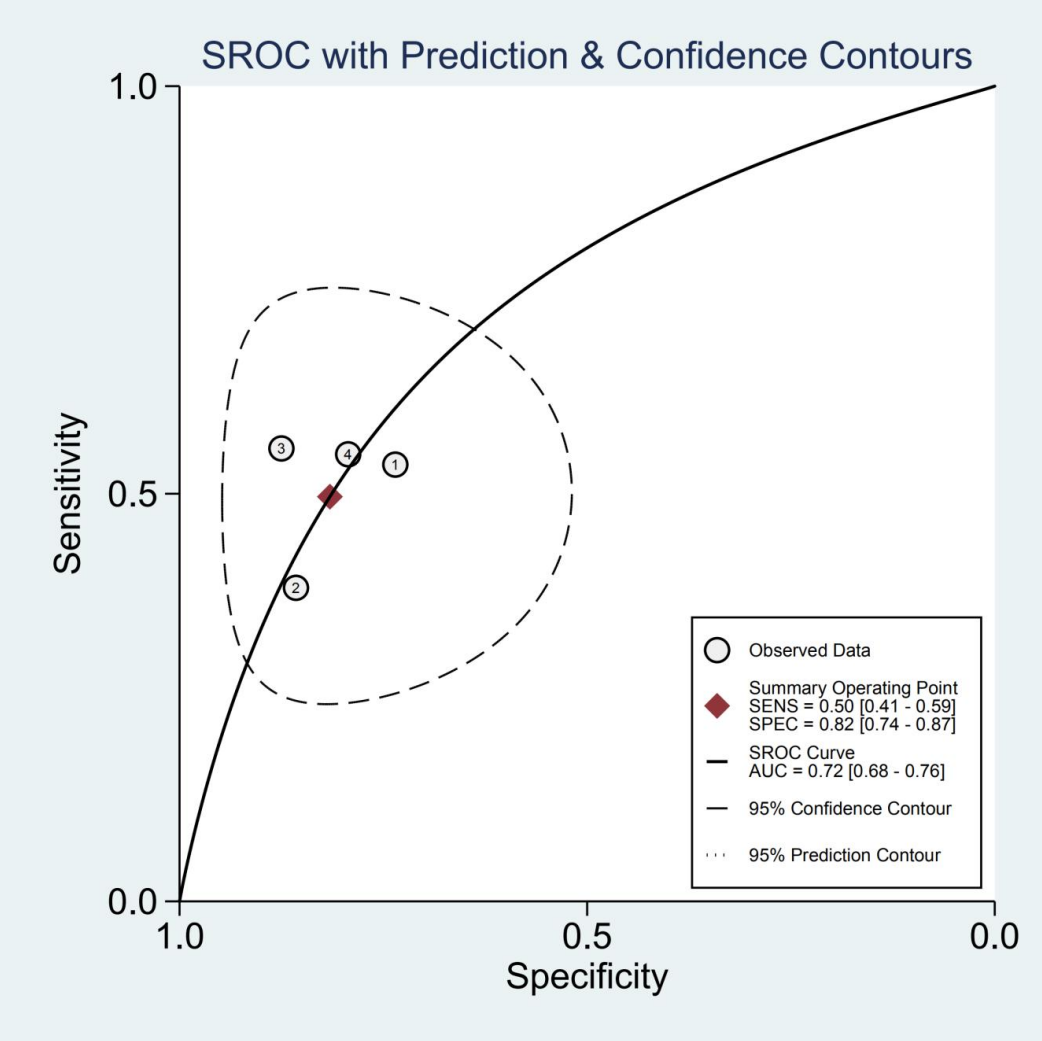

Figure S13. SROC of IL-12

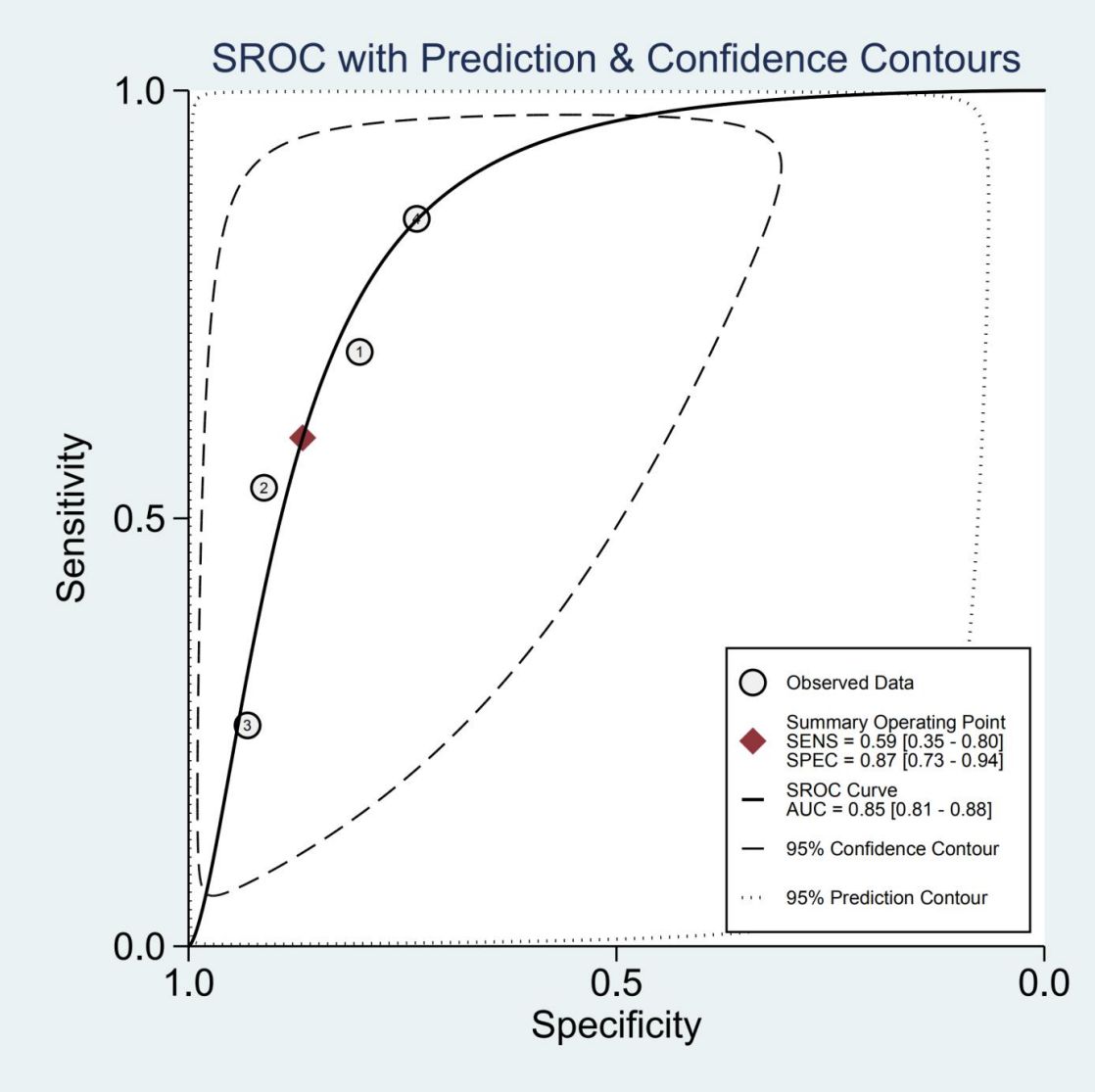

Figure S14. SROC of VEGF

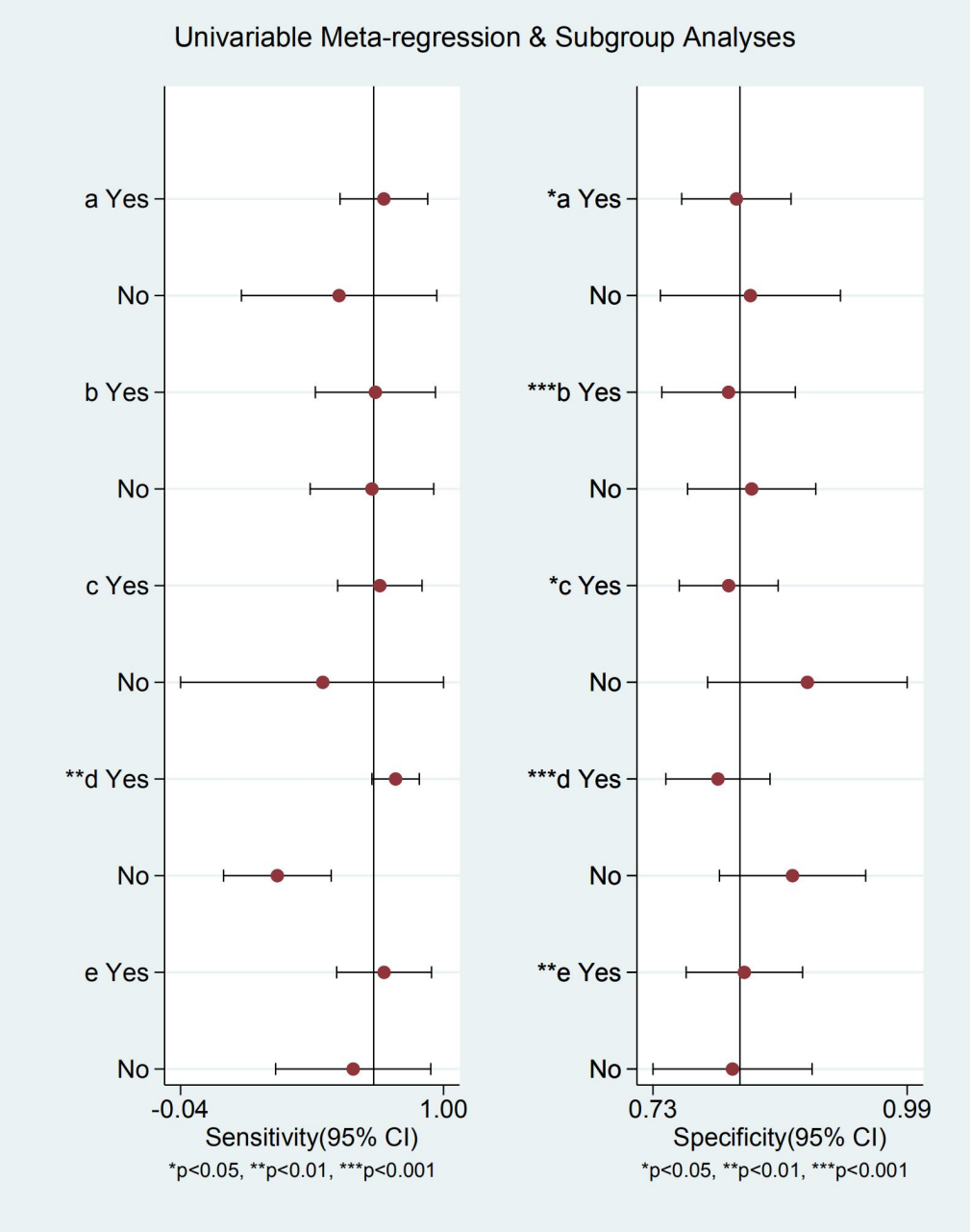

Figure S15. Meta-regression and subgroup analysis of IFN- γ

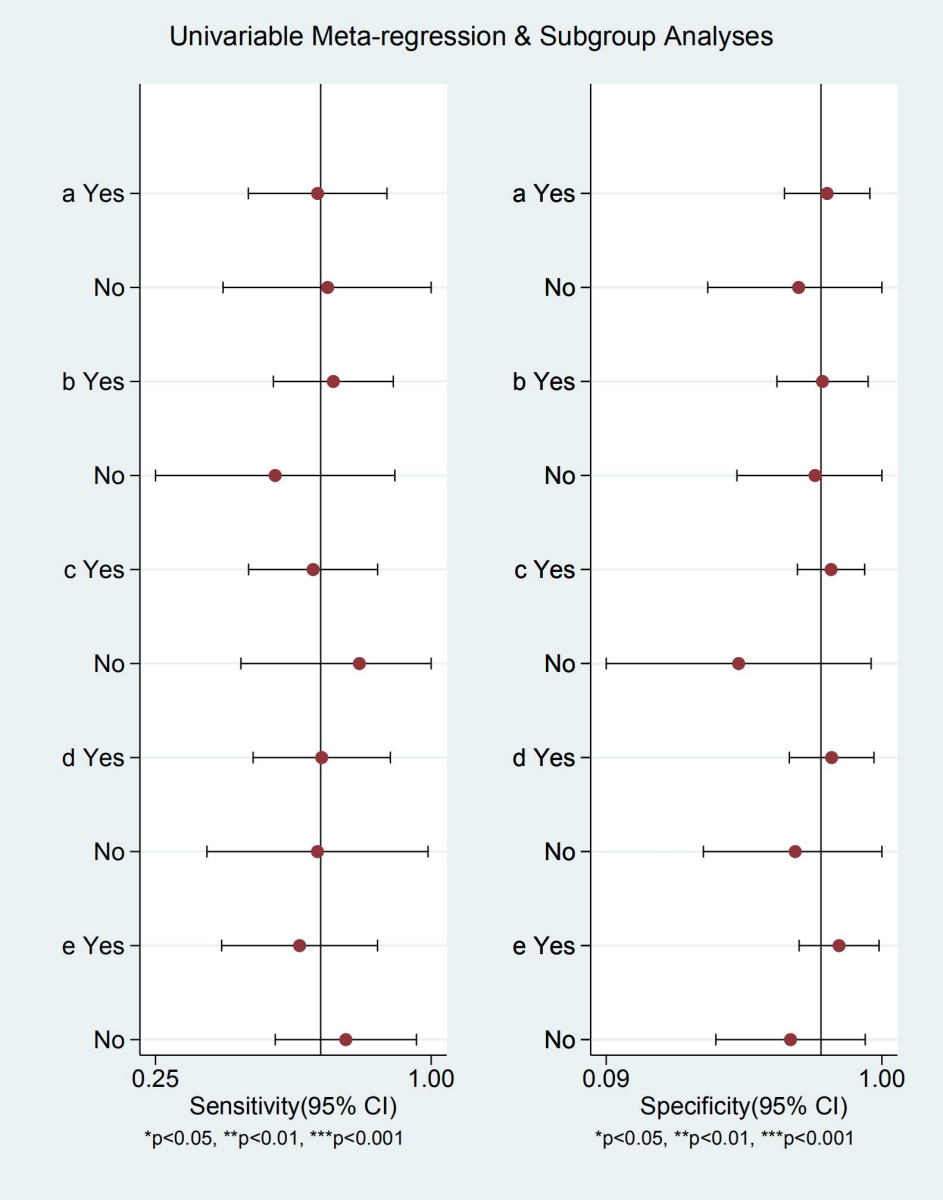

Figure S16. Meta-regression and subgroup analysis of TNF- α

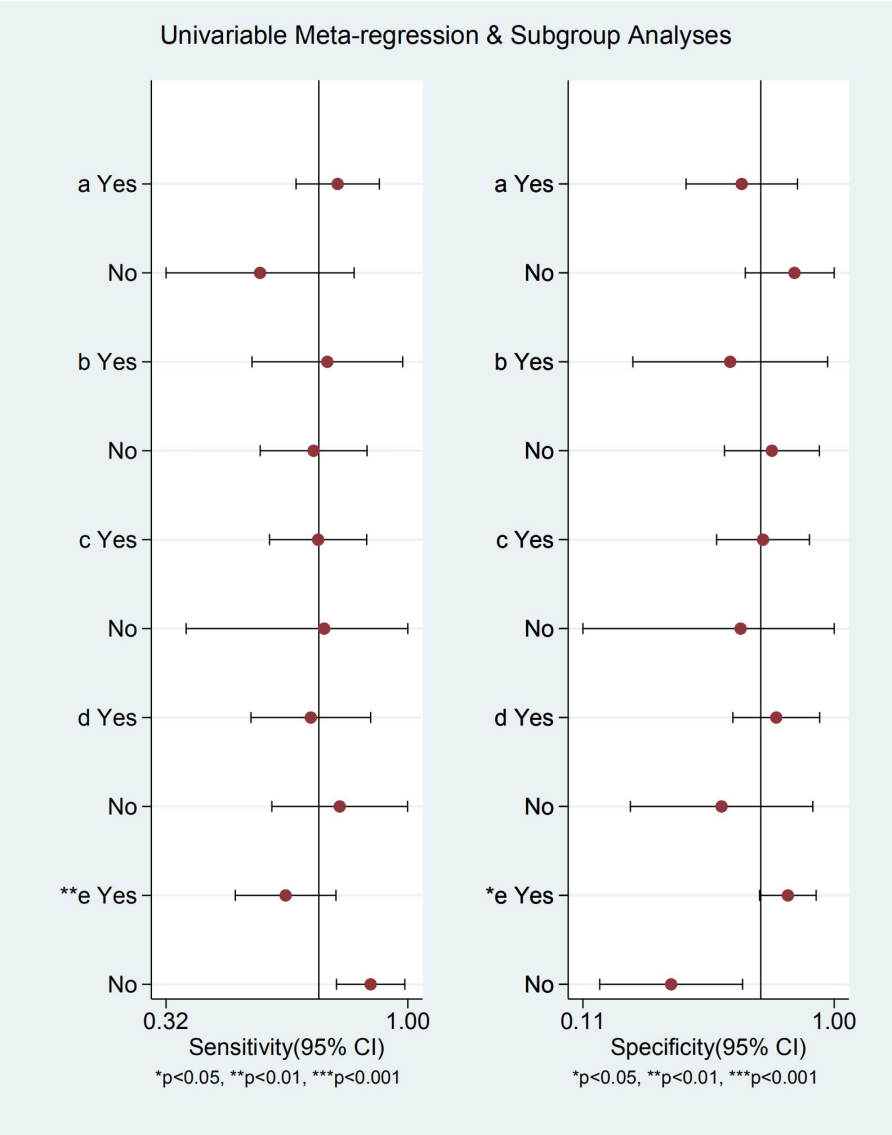

Figure S17. Meta-regression and subgroup analysis of IP-10

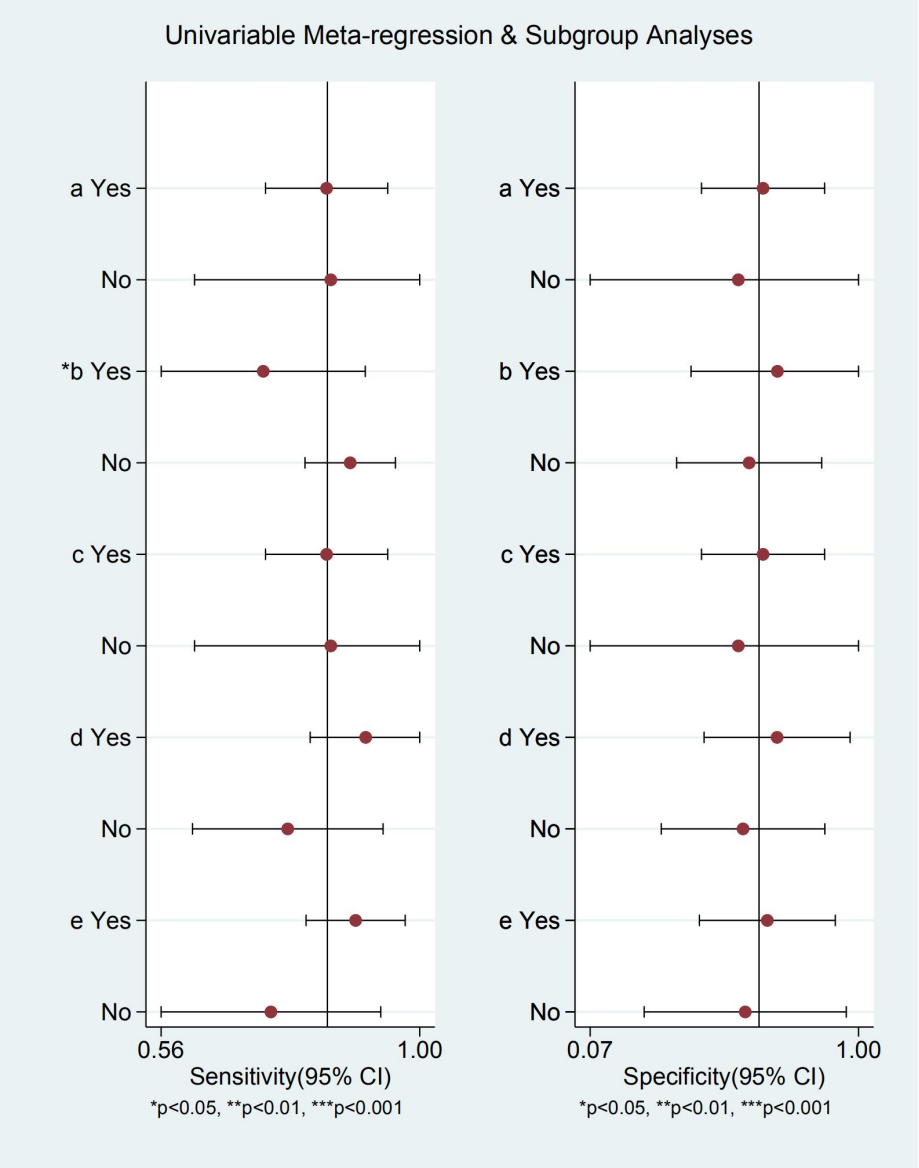

Figure S18. Meta-regression and subgroup analysis of IL-2

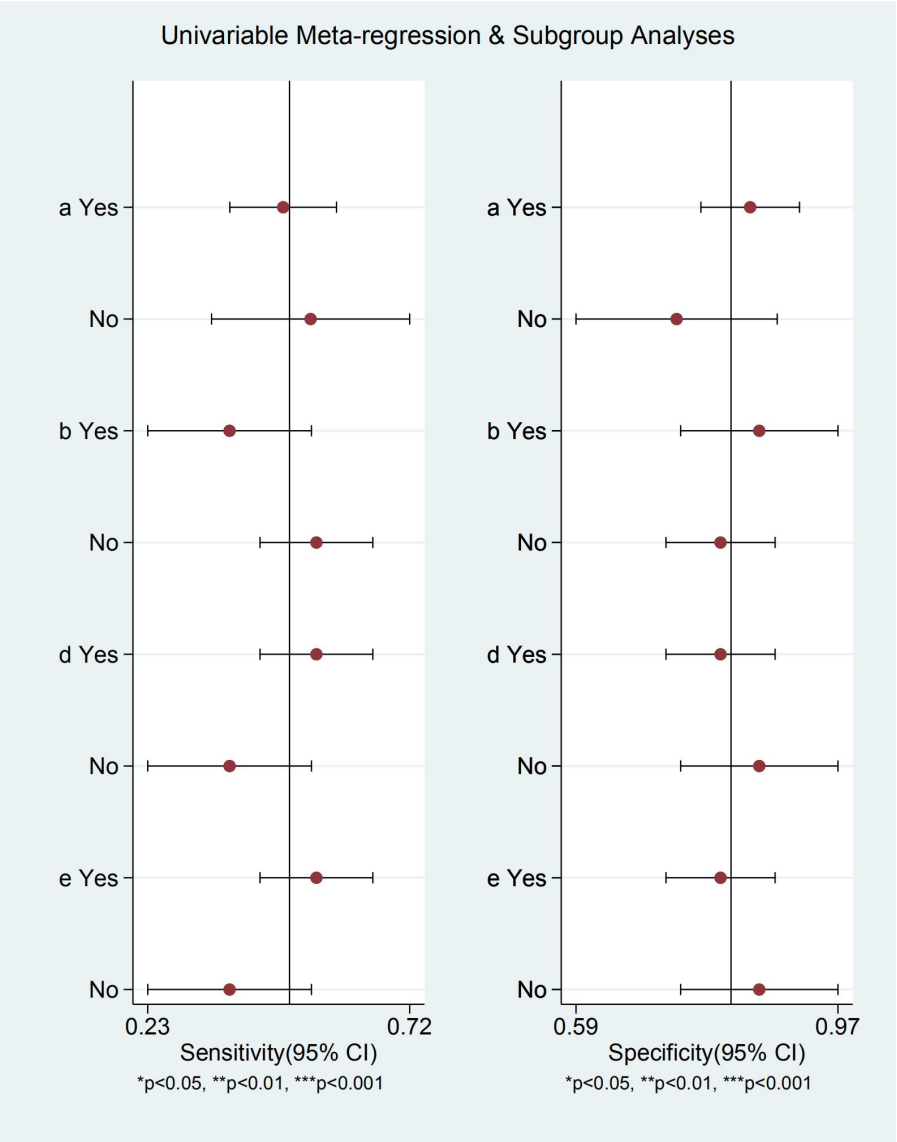

Figure S19. Meta-regression and subgroup analysis of IL-10

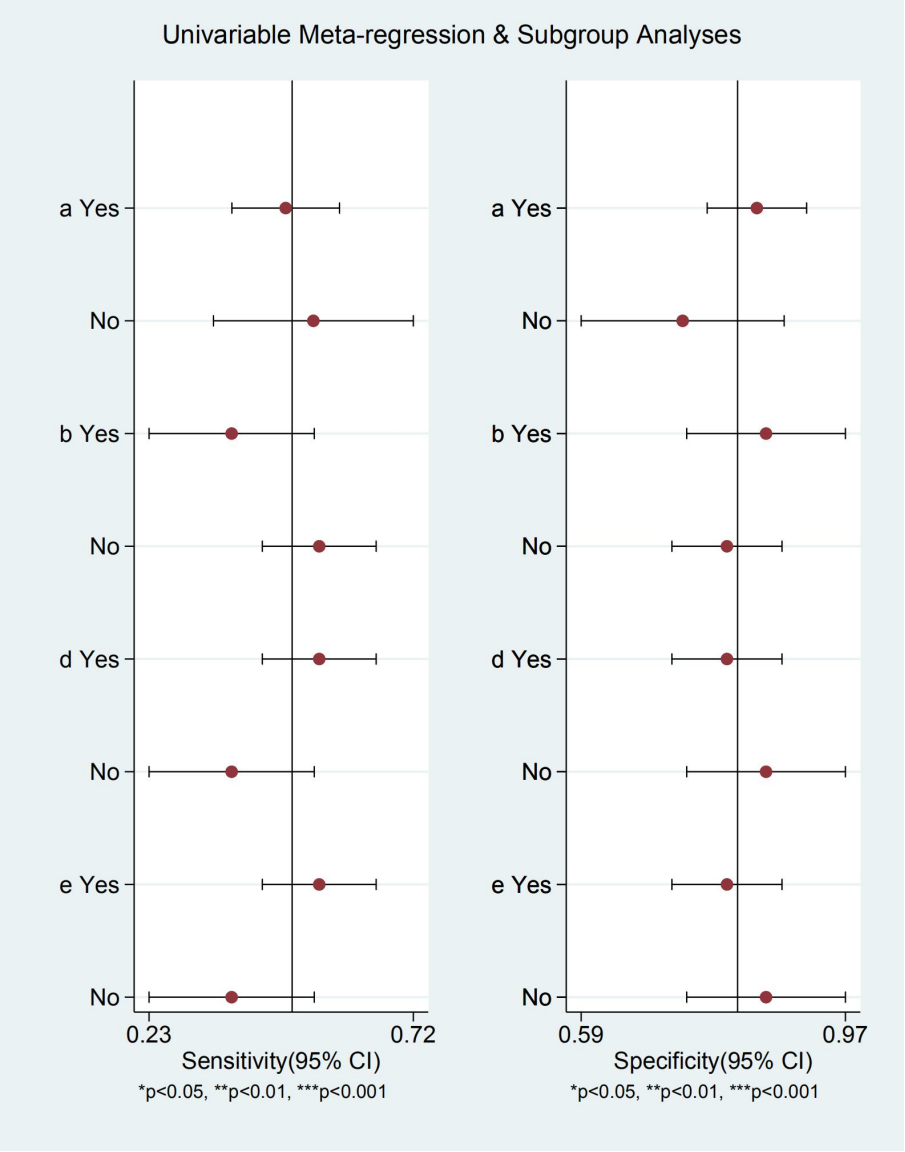

Figure S20. Meta-regression and subgroup analysis of IL-12

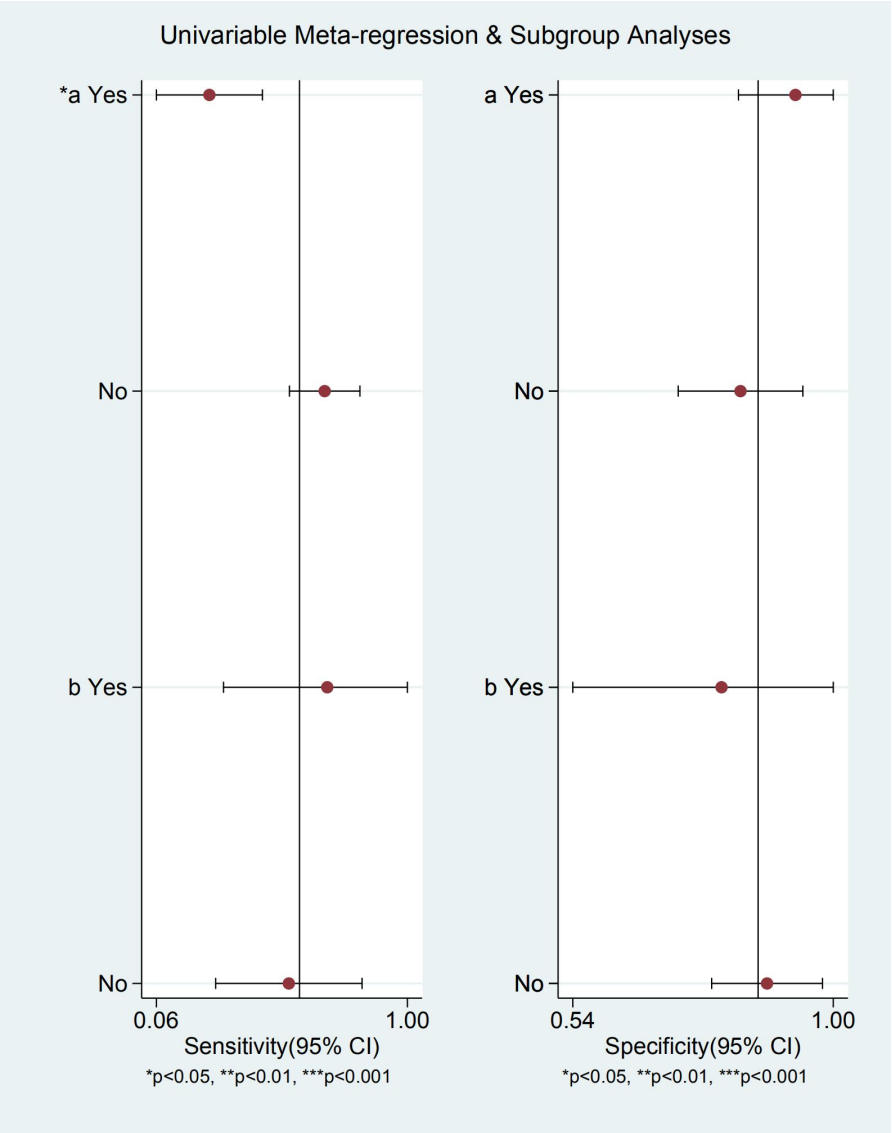

Figure S21. Meta-regression and subgroup analysis of VEGF

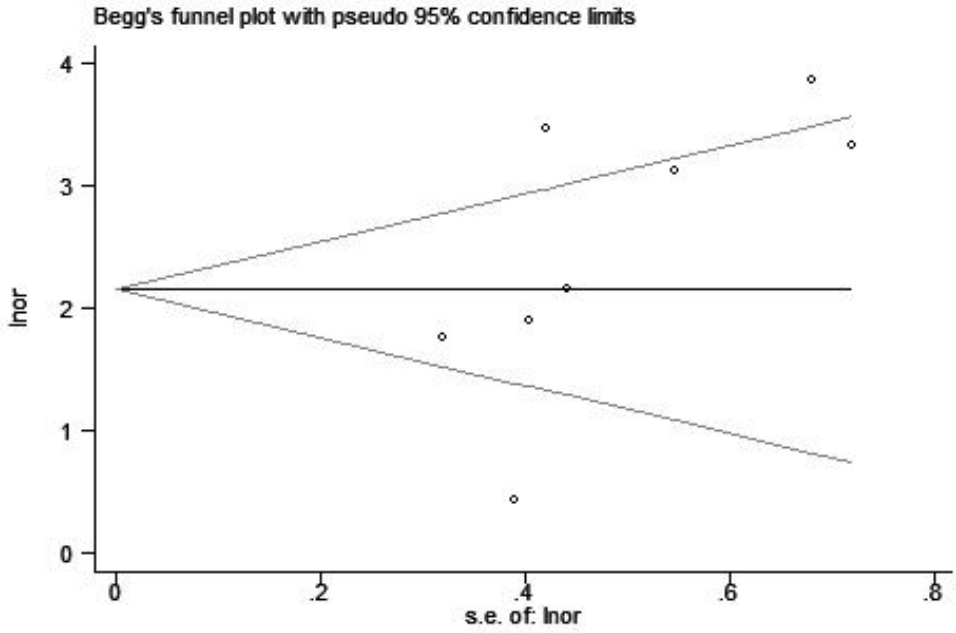

Figure S22. Begg's funnel plot of IFN- γ

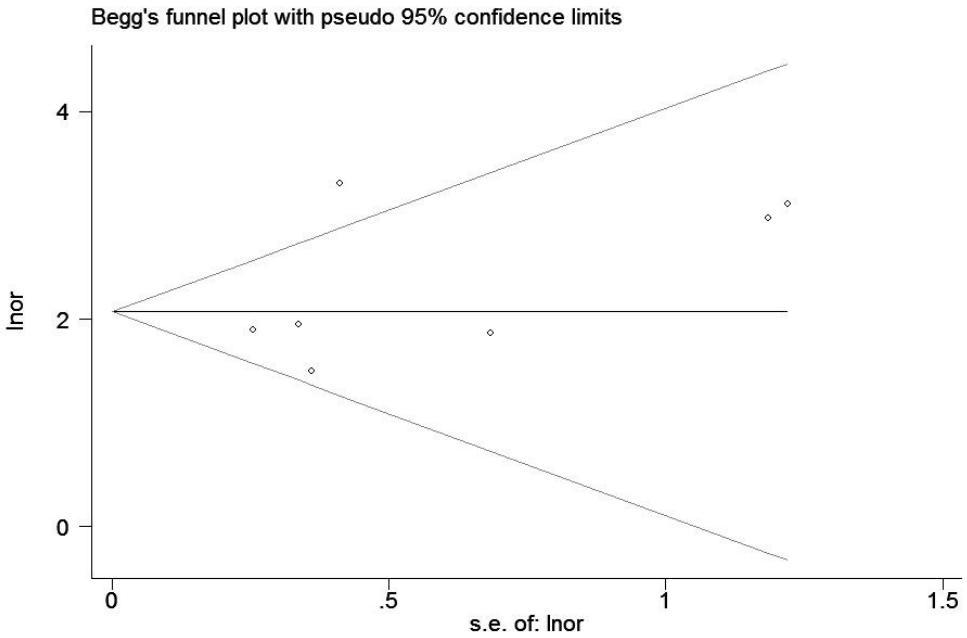

Figure S23. Begg's funnel plot of TNF- α

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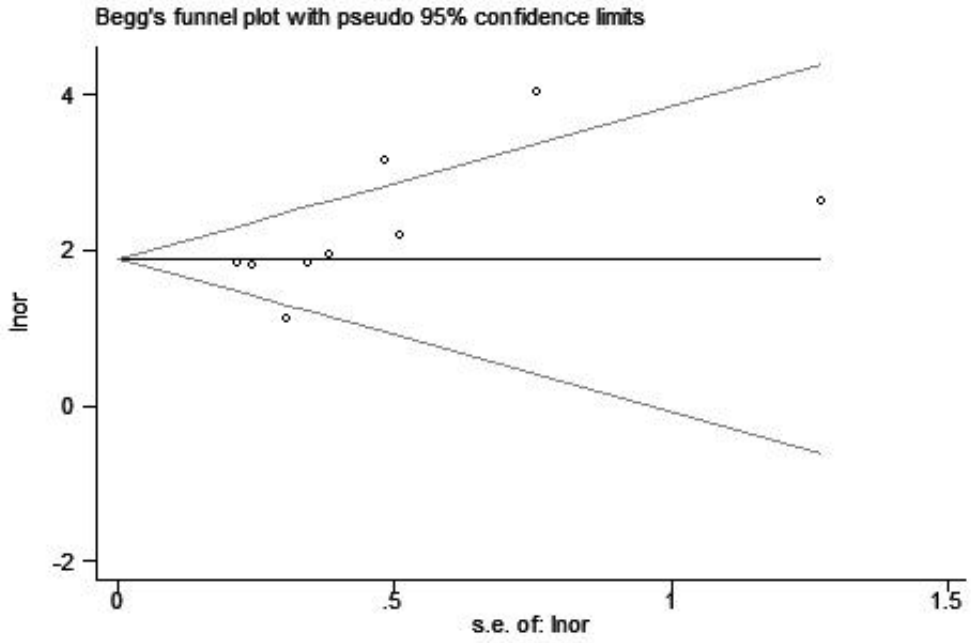

Figure S24. Begg's funnel plot of IP-10

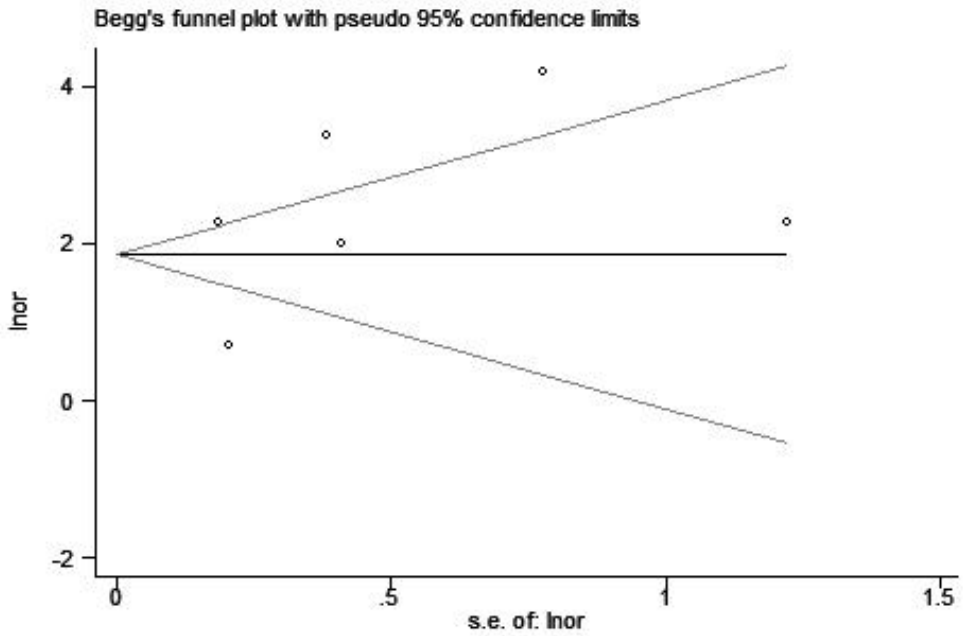

Figure S25. Begg's funnel plot of IL-2

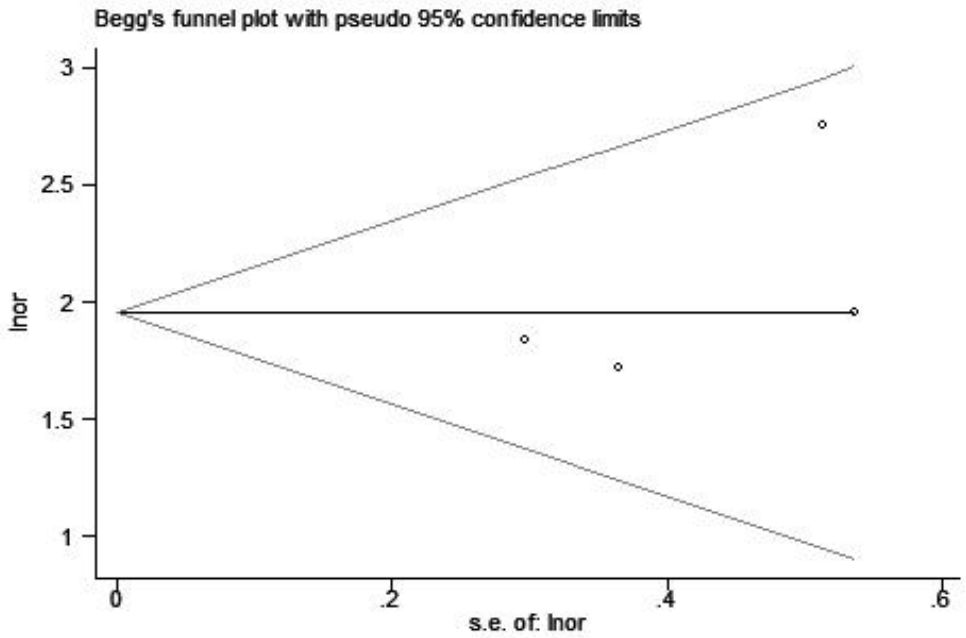

Figure S26. Begg's funnel plot of IL-10

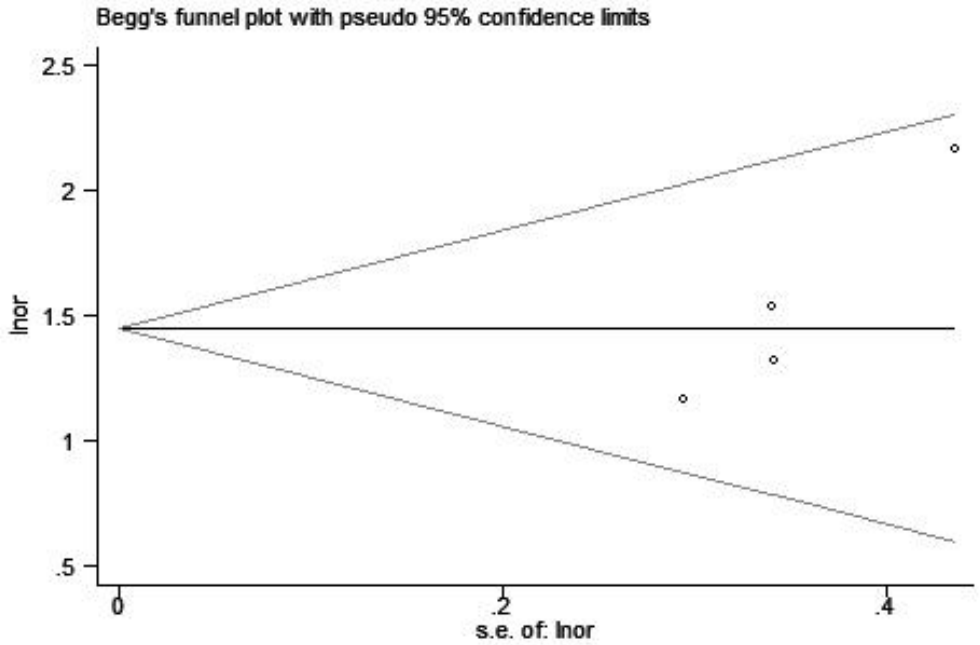

Figure S27. Begg's funnel plot of IL-12

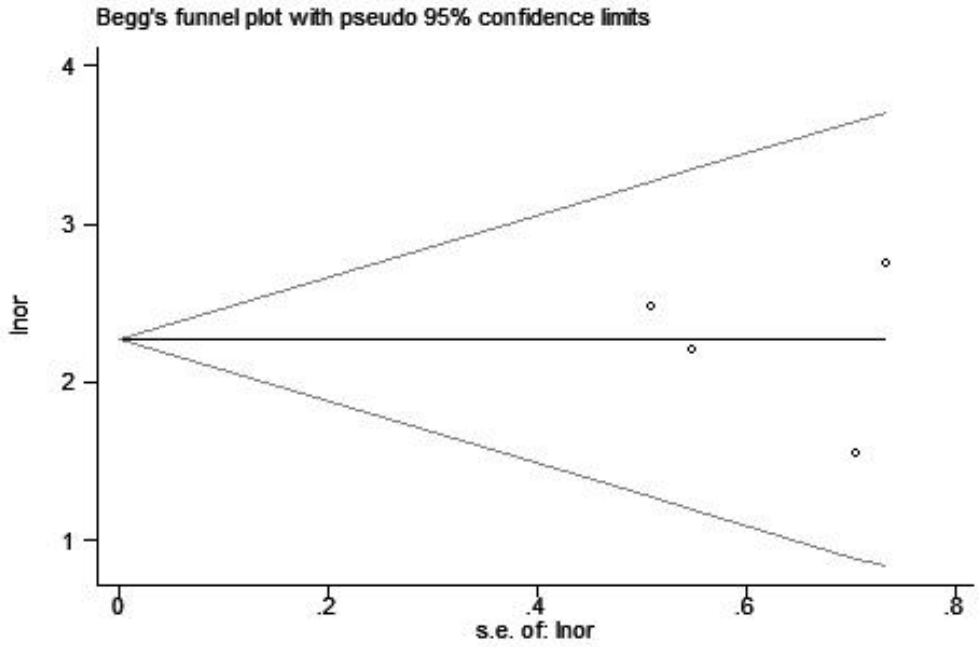

Figure S28. Begg's funnel plot of VEGF

Tables S1. Search strategy

	Search Strategy
#1	(((tuberculosis[Title/Abstract]) OR TB[Title/Abstract]) OR ATB[Title/Abstract]) OR LTBI[Title/Abstract])
#2	(((((cytokines[Title/Abstract]) OR IL[Title/Abstract]) OR IFN-γ[Title/Abstract]) OR TNF-α[Title/Abstract]) OR IP-10[Title/Abstract] OR VEGF[Title/Abstract]
#3	HIV[Title/Abstract]
#4(#1 AND #2)	(((tuberculosis[Title/Abstract]) OR TB[Title/Abstract]) OR ATB[Title/Abstract]) OR LTBI[Title/Abstract]) AND (((((cytokines[Title/Abstract]) OR IL[Title/Abstract]) OR IFN-γ[Title/Abstract]) OR TNF-α[Title/Abstract]) OR IP-10[Title/Abstract] OR VEGF[Title/Abstract]
#5(#4 NOT #3)	(((tuberculosis[Title/Abstract]) OR TB[Title/Abstract]) OR ATB[Title/Abstract]) OR LTBI[Title/Abstract]) AND (((((cytokines[Title/Abstract]) OR IL[Title/Abstract]) OR IFN-γ[Title/Abstract]) OR TNF-α[Title/Abstract]) OR IP-10[Title/Abstract] OR VEGF[Title/Abstract] NOT HIV[Title/Abstract]
#6	Filters: Case-Control Study; Cohort Study; Randomized Controlled Trial

Table S2. Meta-regression results of IFN-γ

Parameter	Category	No of studies	Sensitivity	*P1*	Specificity	*P2*	x^2	*P*	I^2
a	Yes	6	0.76(0.59-0.94)	0.42	0.81(0.76-0.87)	0.01	0.73	0.69	0(0-100)
	No	2	0.59(0.20-0.97)		0.83(0.73-0.92)				
b	Yes	4	0.73(0.49-0.97)	0.95	0.81(0.73-0.88)	0.00	0.25	0.88	0(0-100)
	No	4	0.72(0.47-0.96)		0.83(0.76-0.90)				
c	Yes	7	0.75(0.58-0.91)	0.31	0.81(0.75-0.86)	0.03	1.63	0.44	0(0-100)
	No	1	0.52(-0.04-1.00)		0.89(0.78-0.99)				
d	Yes	6	0.81(0.72-0.90)	0.01	0.79(0.74-0.85)	0.00	0.75	0.01	77(50-100)
	No	2	0.34(0.13-0.55)		0.87(0.80-0.95)				
e	Yes	5	0.76(0.58-0.95)	0.61	0.82(0.76-0.88)	0.01	0.72	0.70	0(0-100)
	No	3	0.64(0.33-0.95)		0.81(0.73-0.89)				

a: whether the study type is an RCT; b: whether the inclusion and exclusion criteria of study subjects are clear; c: reference standard; d: whether the index test and the reference standard are independent; e: whether the index test is Luminex. Yes: affirmative answer; No: negative answer; P1:P value of the sensitivity of five factors that may cause publication bias; P2: P-value of the specificity of five factors that may cause publication bias; P: heterogeneity test; I^2: the magnitude of heterogeneity

Table S3. Meta-regression results of TNF-α

Parameter	Category	No of studies	Sensitivity	*P1*	Specificity	*P2*	x^2	*P*	I^2
a	Yes	5	0.69(0.50-0.88)	0.77	0.82(0.68-0.96)	0.66	0.57	0.75	0(0-100)
	No	2	0.72(0.43-1.00)		0.73(0.43-1.00)				
b	Yes	5	0.73(0.57-0.90)	0.52	0.80(0.65-0.95)	0.98	2.71	0.26	26(0-100)
	No	2	0.57(0.25-0.90)		0.78(0.52-1.00)				
c	Yes	6	0.68(0.50-0.85)	0.61	0.83(0.72-0.94)	0.14	2.84	0.24	30(0-100)
	No	1	0.80(0.48-1.00)		0.53(0.09-0.96)				
d	Yes	5	0.70(0.51-0.89)	0.93	0.83(0.70-0.97)	0.54	2.12	0.35	6(0-100)
	No	2	0.69(0.39-0.99)		0.71(0.41-1.00)				
e	Yes	4	0.64(0.43-0.85)	0.29	0.86(0.73-0.99)	0.44	1.40	0.50	0(0-100)
	No	3	0.77(0.57-0.96)		0.70(0.45-0.95)				

a: whether the study type is an RCT; b: whether the inclusion and exclusion criteria of study subjects are clear; c: reference standard; d: whether the index test and the reference standard are independent; e: whether the index test is Luminex. Yes: affirmative answer; No: negative answer; P1:P value of the sensitivity of five factors that may cause publication bias; P2: P-value of the specificity of five factors that may cause publication bias; P: heterogeneity test; I^2: the magnitude of heterogeneity

Table S4. Meta-regression results of IP-10

Parameter	Category	No of studies	Sensitivity	*P1*	Specificity	*P2*	χ^2	*P*	I^2
a	Yes	7	0.80(0.68-0.92)	0.37	0.67(0.48-0.87)	0.17	2.30	0.32	13(0-100)
	No	3	0.58(0.32-0.85)		0.86(0.69-1.00)				
b	Yes	3	0.77(0.56-0.99)	0.87	0.63(0.29-0.98)	0.39	1.08	0.58	0(0-100)
	No	7	0.73(0.58-0.88)		0.78(0.61-0.95)				
c	Yes	9	0.75(0.61-0.88)	0.94	0.75(0.59-0.91)	0.57	0.17	0.92	0(0-100)
	No	1	0.76(0.37-1.00)		0.67(0.11-1.00)				
d	Yes	7	0.73(0.56-0.89)	0.37	0.80(0.64-0.95)	0.39	1.55	0.46	0(0-100)
	No	3	0.81(0.62-1.00)		0.60(0.28-0.92)				
e	Yes	7	0.65(0.51-0.80)	0.00	0.84(0.74-0.94)	0.04	6.82	0.03	71(35-100)
	No	3	0.89(0.80-0.99)		0.43(0.17-0.68)				

a: whether the study type is an RCT; b: whether the inclusion and exclusion criteria of study subjects are clear; c: reference standard; d: whether the index test and the reference standard are independent; e: whether the index test is Luminex. Yes: affirmative answer; No: negative answer; P1:P value of the sensitivity of five factors that may cause publication bias; P2: P-value of the specificity of five factors that may cause publication bias; P: heterogeneity test; I^2: the magnitude of heterogeneity

Table S5. Meta-regression results of IL-2

Parameter	Category	No of studies	Sensitivity	*P1*	Specificity	*P2*	x^2	*P*	I^2
a	Yes	5	0.84(0.74-0.95)	0.96	0.67(0.46-0.88)	0.67	0.10	0.95	0(0-100)
	No	1	0.85(0.62-1.00)	.	0.59(0.07-1.00)	.	.	.	.
b	Yes	2	0.77(0.56-0.91)	0.02	0.72(0.42-1.00)	0.68	2.30	0.32	13(0-100)
	No	4	0.88(0.80-0.96)	.	0.62(0.37-0.87)	.	.	.	.
c	Yes	5	0.84(0.74-0.95)	0.96	0.67(0.46-0.88)	0.67	0.10	0.95	0(0-100)
	No	1	0.85(0.62-1.00)	.	0.59(0.07-1.00)	.	.	.	.
d	Yes	3	0.91(0.81-1.00)	0.52	0.72(0.47-0.97)	0.64	4.18	0.12	52(0-100)
	No	3	0.77(0.61-0.94)	.	0.60(0.32-0.88)	.	.	.	.
e	Yes	4	0.89(0.81-0.98)	0.62	0.69(0.45-0.92)	0.76	3.54	0.17	43(0-100)
	No	2	0.75(0.56-0.93)	.	0.61(0.26-0.96)	.	.	.	.

a: whether the study type is an RCT; b: whether the inclusion and exclusion criteria of study subjects are clear; c: reference standard; d: whether the index test and the reference standard are independent; e: whether the index test is Luminex. Yes: affirmative answer; No: negative answer; P1:P value of the sensitivity of five factors that may cause publication bias; P2: P-value of the specificity of five factors that may cause publication bias; P: heterogeneity test; I^2: the magnitude of heterogeneity

Table S6. Meta-regression results of IL-10

Parameter	Category	No of studies	Sensitivity	*P1*	Specificity	*P2*	x^2	*P*	I^2
a	Yes	2	0.76(0.61-0.91)	0.67	0.74(0.51-0.97)	0.95	0.46	0.79	0(0-100)
	No	2	0.72(0.55-0.89)	.	0.70(0.44-0.95)	.	.	.	.
b	Yes	2	0.75(0.61-0.90)	0.58	0.67(0.42-0.92)	0.50	0.28	0.87	0(0-100)
	No	2	0.73(0.56-0.90)	.	0.76(0.55-0.96)	.	.	.	.
c	Yes	3	0.72(0.60-0.85)	0.32	0.76(0.59-0.93)	0.45	0.83	0.66	0(0-100)
	No	1	0.80(0.60-1.00)	.	0.58(0.24-0.93)	.	.	.	.
d	Yes	2	0.64(0.64-0.64)	.	0.86(0.86-0.86)	.	-9.82	1.00	100(0-100)
	No	2	0.83(0.83-0.83)	.	0.55(0.55-0.55)	.	.	.	.
e	Yes	3	0.69(0.58-0.80)	0.02	0.77(0.62-0.91)	0.29	2.67	0.26	25(0-100)
	No	1	0.85(0.73-0.97)	.	0.53(0.23-0.82)	.	.	.	.

a: whether the study type is an RCT; b: whether the inclusion and exclusion criteria of study subjects are clear; c: reference standard; d: whether the index test and the reference standard are independent; e: whether the index test is Luminex. Yes: affirmative answer; No: negative answer; P1:P value of the sensitivity of five factors that may cause publication bias; P2: P-value of the specificity of five factors that may cause publication bias; P: heterogeneity test; I^2: the magnitude of heterogeneity

Table S7. Meta-regression results of IL-12

Parameter	Category	No of studies	Sensitivity	*P1*	Specificity	*P2*	χ^2	*P*	I^2
a	Yes	3	0.48(0.39-0.58)	0.69	0.84(0.77-0.92)	0.66	2.07	0.35	4(0-100)
	No	1	0.54(0.35-0.72)	.	0.74(0.59-0.88)	.	.	.	.
b	Yes	1	0.38(0.23-0.54)	0.35	0.86(0.74-0.97)	0.46	3.41	0.18	41(0-100)
	No	3	0.55(0.44-0.65)	.	0.80(0.72-0.88)	.	.	.	.
d	Yes	3	0.55(0.44-0.65)	0.17	0.80(0.72-0.88)	0.06	3.41	0.18	41(0-100)
	No	1	0.38(0.23-0.54)	.	0.86(0.74-0.97)	.	.	.	.
e	Yes	3	0.55(0.44-0.65)	0.17	0.80(0.72-0.88)	0.06	3.41	0.18	41(0-100)
	No	1	0.38(0.23-0.54)	.	0.86(0.74-0.97)	.	.	.	.

a: whether the study type is an RCT; b: whether the inclusion and exclusion criteria of study subjects are clear; c: reference standard; d: whether the index test and the reference standard are independent; e: whether the index test is Luminex. Yes: affirmative answer; No: negative answer; P1:P value of the sensitivity of five factors that may cause publication bias; P2: P-value of the specificity of five factors that may cause publication bias; P: heterogeneity test; I^2: the magnitude of heterogeneity

Table S8. Meta-regression results of VEGF

Parameter	Category	No of studies	Sensitivity	*P1*	Specificity	*P2*	x^2	*P*	I^2
a	Yes	1	0.26(0.06-0.45)	0.02	0.93(0.83-1.00)	0.39	4.91	0.09	59(0-100)
	No	3	0.69(0.56-0.82)	.	0.84(0.72-0.95)	.	.	.	.
b	Yes	1	0.70(0.31-1.00)	0.52	0.80(0.54-1.00)	0.50	0.43	0.81	0(0-100)
	No	3	0.55(0.28-0.83)	.	0.88(0.78-0.98)	.	.	.	.

a: whether the study type is an RCT; b: whether the inclusion and exclusion criteria of study subjects are clear; c: reference standard; d: whether the index test and the reference standard are independent; e: whether the index test is Luminex. Yes: affirmative answer; No: negative answer; P1:P value of the sensitivity of five factors that may cause publication bias; P2: P-value of the specificity of five factors that may cause publication bias; P: heterogeneity test; I^2: the magnitude of heterogeneity

Table S9. The results of Egger's test and Begg's test

	INF- γ	TNF- α	IP-10	IL-2	IL-10	IL-12	VEGF
Egger' test (*P* value)	0.104	0.394	0.078	0.384	0.348	0.033	0.756
Begg' test (*P* value)	0.108	0.133	0.016	1.000	0.734	0.308	1.000