Supplementary material

Serum IL-7 as diagnostic biomarker for rheumatoid arthritis, validation with EULAR-2010 classification criteria

Using the ACR 1987 criteria, out of n=197 with available clinical information, 62 patients were diagnosed with RA and 137 with non-RA conditions. Follow up diagnosis was missing in n=58 cases. The 58 missing patients were due to change in clinical practice and the absence of records for ACR1987 criteria. Clinical and laboratory characteristics are shown in Table S1.

We confirmed significant differences between RA and non-RA for ACPA, RF, SE, TJC, SJT, CRP, DAS28. In the regression model (Table S2), data were also reproduced suggesting a role for IL-7 as biomarker for RA, notably in ACPA-negative patients.

Table S1. Descriptive characteristics of patients based on the ACR 1987' criteria (n=197). *4 patients with EULAR 2010 RA never satisfied the ACR 1987 criteria and changed groups.

Variable	non-RA n=137*	RA n=62	p-value*
Age (years)	50.0 (41.0–63.0)	62.0 (51.0–70.8)	<0.0001
ACPA (pos/neg)	7/125	43/19	<0.0001
RF (pos/neg)	14/117	39/23	<0.0001
SE (pos/neg)	54/77	45/17	<0.0001
DAS28 CRP	3.2 (2.3-3.95)	4.1 (3-4.8)	<0.0001
Smoking (current/never/previous)	21/45/39	13/23/26	0.001
SJC	1 (0-3)	3 (0-8)	0.002
TJC	3 (1-7)	6 (2-12)	0.023
CRP (mg/L)	5.3 (5.0-18.4)	11.6 (5.0-24.0)	0.072
IL-7 pg/ul	17.9 (13.5- 26.9)	16.65 (13.6-21.4)	0.056
BMI	27.6 (17-49)	26.7 (16-47)	0.116
HAQ**	6 (2-10)	7 (3-11)	0.353
Disease duration (months)	4 (3-6)	4 (3-6)	0.604
Gender (F/M)	91/46	43/19	0.958

Data are median and interquartile range (IQR).
**Data missing in 53 cases.

Table S2. Regression models for RA patients diagnosed according to the ACR 1987 criteria.

Covariate	Unadjusted OR	Adjusted OR	Adjusted p-value
Model 1			
ACPA	40.41 (15.89, 102.77)	43.84 (14.67, 131.01)	<0.001
CRP	1.01 (1.00, 1.03)	1.03 (1.01, 1.05)	0.009
IL7	0.96 (0.92, 1.00)	0.94 (0.88, 1.00)	0.042
TJC	1.05 (1.00, 1.09)	1.08 (1.00, 1.17)	0.061
SJC	1.12 (1.04, 1.19)	1.00 (0.89, 1.13)	0.988
Pseudo R^2 = 0.584, AUROC = 0.889			
Model 2			
CRP	1.02 (1.00, 1.03)	1.03 (1.01, 1.05)	0.014
TJC	1.05 (0.99, 1.12)	1.09 (1.00, 1.18)	0.049
IL7	0.98 (0.92, 1.05)	0.93 (0.86, 1.01)	0.100
SJC	1.04 (0.93, 1.16)	0.95 (0.82, 1.09)	0.453
Pseudo R^2 = 0.136, AUROC = 0.705			

Model S1 uses all patients (n=169); variables included ACPA, IL7, SJC, TJC, CRP.
Model S2 uses only ACPA negative patients (n=121), variables included IL7, SJC, TJC, CRP.