

**Table S1** Multivariable logistic regression analysis of clinical risk factors for RA-ILD with UIP pattern

	UIP pattern (n=63)	noILD (n=578)	Adjusted odds ratio (95% CI)	Adjusted <i>P</i> -value
Age at RA diagnosis	53.3 ± 11.2	45.0 ± 13.0	1.05 (1.02, 1.07)	4.8×10 <sup>-5</sup>
Sex, female	46 (73.0)	491 (84.9)	1.32 (0.49, 3.60)	.585
Smoking (n=638)				
Never	45 (71.4)	463 (80.5)	1	
Ever	13 (20.6)	56 (9.7)	1.55 (0.54, 4.46)	.412
Current	5 (7.9)	56 (9.7)	0.72 (0.22, 2.36)	.587
RF positivity (n=638)	58 (92.1)	520 (90.4)	1.10 (0.41, 2.98)	.848
Anti-CCP antibody positivity	61 (96.8)	509 (88.1)	3.07 (0.71, 13.15)	.130

Values are presented as estimated means ± SD or N (%).

Abbreviations: *RA-ILD* rheumatoid arthritis associated interstitial lung disease, *UIP* usual interstitial pneumonia, *noILD* without interstitial lung disease, *CI* confidence interval, *RA* rheumatoid arthritis, *RF* rheumatoid factor, *CCP* citrullinated cyclic peptides

**Table S2** Multivariable logistic regression analysis of risk factors for RA-ILD with UIP pattern

	Allelic association		Genotypic association	
	Odds ratio (95% CI)	Adjusted <i>P</i> -value	Odds ratio (95% CI)	Adjusted <i>P</i> -value
Age at RA diagnosis	1.05 (1.03, 1.07)	6.3×10 <sup>-9</sup>	1.05 (1.03, 1.07)	3.3×10 <sup>-5</sup>
Sex, female	0.76 (0.37, 1.55)	.449	0.76 (0.28, 2.10)	.600
Smoking (n=638)				
Never	1		1	
Ever	1.59 (0.75, 3.37)	.224	1.63 (0.56, 4.73)	.368
Current	0.72 (0.31, 1.67)	.441	0.71 (0.21, 2.39)	.585
RF positivity (n=638)	1.08 (0.53, 2.18)	.834	1.05 (0.39, 2.86)	.918
Anti-CCP antibody positivity	3.05 (1.09, 8.53)	.034	3.03 (0.71, 12.98)	.136
<i>MUC5B</i> rs35705950 (T)	4.94 (1.25, 19.53)	.023	-	-
<i>MUC5B</i> rs35705950 (GT)	-	-	5.12 (1.26, 20.75)	.022

Abbreviations: *RA-ILD* rheumatoid arthritis associated interstitial lung disease, *UIP* usual interstitial pneumonia, *CI* confidence interval, *RA* rheumatoid arthritis, *RF* rheumatoid factor, *CCP* citrullinated cyclic peptides, *MUC5B* mucin 5B

**Table S3** Meta-analysis association result from previously reported Japanese and present studies.

	Japan	Korea	Combined analysis
Number of patients, n			
RA-noILD	300	578	878
RA-ILD	182	105	287
UIP	60	63	123
Other than UIP	122	42	164
MAF of <i>MUC5B</i> rs35705950, %			
RA-noILD	0.5	0.69	0.6
RA-ILD	1.1	1.43	1.22
UIP	1.7	2.38	2.0
Other than UIP	0.8	0	0.61
Genotypic association			
RA-ILD vs. RA-noILD			
Crude odds ratio (95% CI)	2.22 (0.49, 10.05)	2.10 (0.55, 8.03)	2.15 (0.79, 5.87)
<i>P</i> value			.134
UIP vs. RA-noILD			
Crude odds ratio (95% CI)	3.41 (0.56, 20.88)	3.56 (0.92, 13.79)	3.51 (1.19, 10.37)
<i>P</i> value			.023
Other than UIP vs. RA-noILD			
Crude odds ratio (95% CI)	1.65 (0.27, 10.00)	0.79 (0.04, 13.91)	1.34 (0.29, 6.165)
<i>P</i> value			.707

Abbreviations: RA-noILD rheumatoid arthritis without interstitial lung disease RA-ILD rheumatoid arthritis associated interstitial lung disease, UIP usual interstitial pneumonia, MAF minor allele frequency, *MUC5B* mucin 5B, CI confidence interval