

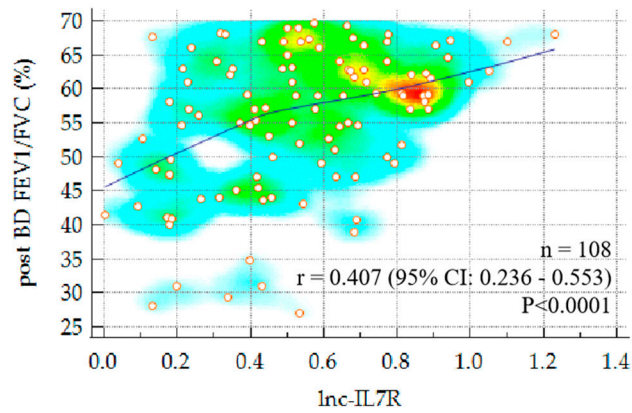
Supplementary Table S1. Association of Inc-IL7R, with GOLD COPD severity, and pulmonary function in our cohort (n = 125)

Univariate			Multivariate, correlation coefficient (95% CI)									
Variable	N	Mean (95% CI )	FEV1(%)	FEV1(L)	FVC(%)	FVC(L)	post-BD_FEV1/FVC	Total LAA(%)	%LAA- 950insp	Inc-IL7R	COPD severity (GOLD)	
Sex	125	0.89 ± 0.32 (0.00 – 1.00)	0.19 (0.01 – 0.35)	0.30 (0.13 – 0.45)	0.23 (0.05 – 0.39)	0.36 (0.20 – 0.51)	0.05 (–0.13 –0.22)	–0.05 (–0.22 – 0.13)	–0.08 (– 0.25 – 0.10)	–0.003 (–0.19 – 0.19)	–0.22 (– 0.43 –0.02)	
Age	125	69.09 ± 7.76 (41.00–87.00)	–0.02 (– 0.19 –0.16)	–0.31 (–0.46– –0.14)	–0.05 (– 0.22 – 0.13)	–0.39 (– 0.53 – –0.23)	–0.06 (–0.23 –0.12)	0.04 (–0.14 – 0.21)	0.11 (– 0.07 – 0.28)	–0.09 (–0.27 – 0.10)	–0.02 (– 0.26 –0.22)	
BMI	122	23.54 ± 4.07 (15.80 –36.20)	0.21 (0.04 – 0.38)	0.27 (0.10 – 0.43)	0.10 (– 0.07 – 0.28)	0.18 (0.00 – 0.35)	0.30 (0.13 –0.45)	–0.46 (–0.59 – 0.30)	–0.47 (– 0.60 – –0.32)	–0.08 (–0.11 – 0.27)	–0.41 (– 0.59 – –0.19)	
Smoking_Hx	125	1.384 ± 0.63 (0.00–2.00)	–0.11 (–0.28 – 0.07)	–0.15 (–0.31– 0.03)	–0.01 (– 0.18 – 0.17)	–0.10 (– 0.28 – 0.07)	–0.23 (–0.39 – – 0.05)	0.26 (0.09 –0.42)	0.26 (0.09 – 0.42)	–0.11 (–0.29 – 0.08)	0.11 (0.13 –0.34)	
pack-year	125	48.98 ± 35.97 (0.00–180.00)	–0.03 (–0.20 – 0.15)	0.02 (–0.15– 0.20)	–0.01 (– 0.18 – 0.17)	0.08 (– 0.09 – 0.26)	–0.05 (–0.22 –0.13)	0.17 (–0.01–0.33)	0.17 (–0.01 –0.34)	–0.04 (–0.23 – 0.15)	–0.02 (– 0.26 –0.22)	
FEV1 (%)	125	56.26 ± 19.16 (17.50–97.70)		0.86 (0.80 – 0.90)	0.86 (0.80 – 0.90)	0.68 (0.58 – 0.77)	0.77 (0.69 –0.83)	–0.39 (–0.53 – – 0.23)	–0.26 (– 0.42 – –0.09)	0.52 (0.37 –0.65)	–0.92 (– 0.95 – –0.88)	
FEV1 (L)	125	1.41 ± 0.55 (0.43 – 3.07)			0.70 (0.59 – 0.78)	0.89 (0.85 – 0.92)	0.74 (0.65 –0.81)	–0.41 (–0.55 – – 0.25)	–0.29 (– 0.45 – –0.13)	0.37 (0.20 –0.53)	–0.78 (– 0.86 – –0.67)	
FVC(%)	124	79.80 ± 18.47 (38.50–117.70)				0.71 (0.61 – 0.79)	0.37 (0.21 –0.51)	–0.15 (–0.32 – 0.03)	–0.09 (– 0.27 – 0.08)	0.45 (0.28 –0.59)	–0.83 (– 0.90 – –0.74)	
FVC(L)	124	2.51 ± 0.71 (1.20–4.61)					0.41 (0.25 –0.55)	–0.23 (–0.39 – – 0.05)	–0.15 (– 0.32 – 0.03)	0.31 (0.13 –0.47)	–0.69 (– 0.80 – –0.54)	
post-BD_FEV1/FVC	125	54.66 ± 10.45 (27.00 –69.72)						–0.57 (–0.68 – – 0.44)	–0.41 (– 0.55 –	0.41 (0.24 –0.55)	–0.66 (– 0.77 – –0.49)	

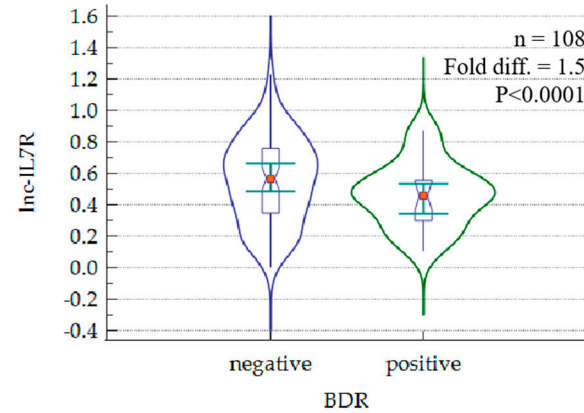
									−0.25)		
Total LAA (%)	125	14.71 ± 8.64 (0.41 − 45.65)							0.82 (0.75 − 0.87)	−0.35 (−0.50 − −0.17)	0.38 (0.15 − 0.56)
%LAA-950insp	125	1.34 ± 0.73 (0.00 − 2.00)								−0.30 (−0.46 − −0.12)	0.30 (0.06 − 0.50)
lnC-IL7R	108	0.54 ± 0.26 (0.005 − 1.23)									−0.59 (−0.74 − −0.38)
COPD severity_GOLD	67	1.51 ± 101.0 (0.00 − 3.00)									

COPD, chronic obstructive pulmonary disease; GOLD, Global Initiative for Chronic Obstructive Lung Disease; M, male; F, female; FEV1, forced expiratory volume in 1 s; FVC, forced vital capacity; BMI, body mass index; Hx, history; Post-BD, post-bronchodilator; LAA, low attenuation area; %LAA-950insp, percentages of low attenuation area below − 950 Hounsfield units; GOLD, Global Initiative for Chronic Obstructive Lung Disease. The values of FEV1/FVC % and FEV1 % were analyzed by Kruskal-Wallis tests and Dunn's multiple comparisons

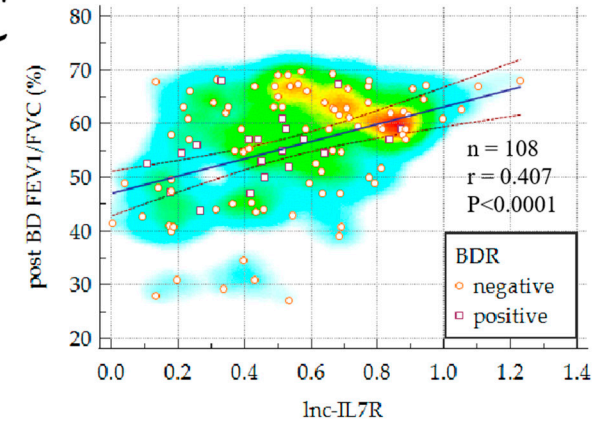
A



B



C



D

## Regression

Dependent Y	post_BD_FEV1_FVC_%_ post BD FEV1/FVC (%)
Independent X	Inc_IL7R Inc-IL7R

### Least squares regression

#### All cases

Sample size	108
Coefficient of determination R <sup>2</sup>	0.1654
Residual standard deviation	9.4755

#### Regression Equation

y = 47.0116 + 16.1211 x						
Parameter	Coefficient	Std. Error	95% CI	t	P	
Intercept	47.0116	2.0909	42.8662 to 51.1570	22.4840	<0.0001	
Slope	16.1211	3.5167	9.1488 to 23.0933	4.5841	<0.0001	

#### Analysis of Variance

Source	DF	Sum of Squares	Mean Square
Regression	1	1886.7906	1886.7906
Residual	106	9517.3152	89.7860

F-ratio	21.0143
Significance level	P < 0.0001

#### Residuals

Chi-squared test for Normal distribution	accept Normality (P=0.8029) (Chi-squared=8.594 DF=13)
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#### Subgroup: BDR = negative

Sample size	88
Coefficient of determination R <sup>2</sup>	0.1700
Residual standard deviation	10.1639

#### Regression Equation

y = 46.3389 + 16.9432 x						
Parameter	Coefficient	Std. Error	95% CI	t	P	
Intercept	46.3389	2.4767	41.4154 to 51.2624	18.7101	<0.0001	
Slope	16.9432	4.0366	8.9188 to 24.9677	4.1974	0.0001	

#### Analysis of Variance

Source	DF	Sum of Squares	Mean Square
Regression	1	1820.0659	1820.0659
Residual	86	8884.1782	103.3044

F-ratio	17.6185
Significance level	P = 0.0001

#### Subgroup: BDR = positive

Sample size	20
Coefficient of determination R <sup>2</sup>	0.1546
Residual standard deviation	5.7286

#### Regression Equation

y = 50.0128 + 11.7084 x						
Parameter	Coefficient	Std. Error	95% CI	t	P	
Intercept	50.0128	3.2435	43.1986 to 56.8270	15.4196	<0.0001	
Slope	11.7084	6.4546	-1.8522 to 25.2691	1.8140	0.0864	

#### Analysis of Variance

Source	DF	Sum of Squares	Mean Square
Regression	1	107.9815	107.9815
Residual	18	590.7006	32.8167

F-ratio	3.2904
Significance level	P = 0.0864

**Supplementary Figure S1.** Correlation between Inc-IL7R and bronchodilator response. (A) Scatter diagram showing the correlation between post-BD FEV1/FVC (%) and Inc-IL7R expression in our COPD cohort. (B) Combined notched box-and-whisker and violin plots comparing Inc-IL7R expression profile in patients with negative and positive BDR. (C) Scatter diagram with regression line showing the correlation between BDR-delineated post-BD FEV1/FVC (%) and Inc-IL7R levels in our COPD cohort. (D) Statistical chart showing the regression-based estimation of relationships between post-BD FEV1/FVC (%), BDR status, and Inc-IL7R expression levels in our cohort.