Supplementary Table S1. LSM (SE) values at each visit for all parameters in patients with and without anaemia at baseline.

Parameters	Placebo + MTX		Sarilumab 150 mg + MTX		Sarilumab 200 mg + MTX	
	Patients with anaemia at baseline (n=40)	Patients without anaemia at baseline (n=41)	Patients with anaemia at baseline (n=36)	Patients without anaemia at baseline (n=45)	Patients with anaemia at baseline (n=43)	Patients without anaemia at baseline (n=37)
Haemoglobin[a] (g/dL)						
Baseline	11.25 (0.16)	13.14 (0.12)	11.06 (0.16)	13.00 (0.11)	11.11 (0.15)	13.32 (0.13)
p-value *vs.* placebo[b]			0.3992	0.4051	0.5160	0.2924
Week 2	11.35 (0.18)	12.88 (0.16)	11.63 (0.19)	13.18 (0.13)	11.58 (0.17)	13.47 (0.14)
p-value *vs.* placebo[b]			0.2905	0.0998	0.3652	0.0024
Week 8	11.14 (0.18)	12.93 (0.15)	11.89 (0.19)	13.32 (0.14)	11.98 (0.17)	13.35 (0.16)
p-value *vs.* placebo[b]			0.0041	0.0618	0.0010	0.0066
Week 10	11.32 (0.19)	12.78 (0.15)	12.06 (0.20)	13.38 (0.14)	12.00 (0.18)	13.59 (0.16)
p-value *vs.* placebo[b]			0.0084	0.0041	0.0116	0.0003
Week 16	11.36 (0.18)	12.85 (0.16)	12.09 (0.19)	13.49 (0.15)	12.05 (0.18)	13.51 (0.17)
p-value *vs.* placebo[b]			0.0063	0.0029	0.0070	0.0040
Week 20	11.43 (0.22)	12.78 (0.20)	11.88 (0.21)	13.37 (0.17)	11.97 (0.19)	13.49 (0.19)
p-value *vs.* placebo[b]			0.1307	0.0087	0.0601	0.0099
Week 24	11.46 (0.23)	12.98 (0.20)	12.31 (0.20)	13.50 (0.16)	12.29 (0.19)	13.72 (0.18)
p-value *vs.* placebo[b]			0.0057	0.0407	0.0053	0.0059
DAS28-CRP[c]						
Baseline	5.45 (0.15)	5.26 (0.15)	5.81 (0.16)	5.47 (0.14)	5.62 (0.14)	5.07 (0.15)
p-value *vs.* placebo[b]			0.0960	0.2951	0.4113	0.3601
Week 2	5.31 (0.18)	5.01 (0.17)	4.69 (0.19)	4.54 (0.16)	4.32 (0.17)	3.98 (0.17)
p-value *vs.* placebo[b]			0.0167	0.0402	<0.0001	<0.0001
Week 8	5.02 (0.20)	4.43 (0.19)	3.55 (0.21)	3.53 (0.18)	3.49 (0.19)	3.30 (0.20)
p-value *vs.* placebo[b]			<0.0001	0.0008	<0.0001	<0.0001
Week 16	4.80 (0.22)	4.33 (0.20)	3.27 (0.23)	3.23 (0.19)	2.86 (0.21)	3.01 (0.21)
p-value *vs.* placebo[b]			<0.0001	<0.0001	<0.0001	<0.0001
Week 20	4.76 (0.26)	4.14 (0.20)	2.97 (0.23)	3.06 (0.17)	2.85 (0.21)	2.83 (0.20)
p-value *vs.* placebo[b]			<0.0001		<0.0001	<0.0001
Week 24	4.74 (0.24)	4.32 (0.23)	2.91 (0.22)	2.92 (0.18)	2.72 (0.20)	2.82 (0.21)
p-value *vs.* placebo[b]			<0.0001	<0.0001	<0.0001	<0.0001
CDAI[c]						
Baseline	32.28 (1.87)	32.45 (1.88)	37.70 (1.97)	33.84 (1.74)	34.32 (1.80)	30.72 (1.96)
p-value *vs.* placebo[b]			0.0451	0.5774	0.4275	0.5116
Week 2	31.19 (2.12)	29.27 (2.11)	30.99 (2.23)	29.03 (1.97)	27.80 (2.03)	25.56 (2.20)
p-value *vs.* placebo[b]			0.9472	0.9324	0.2472	0.2135
Week 8	27.93 (2.21)	23.46 (1.98)	20.11 (2.34)	19.48 (1.84)	20.79 (2.13)	17.76 (2.08)
p-value *vs.* placebo[b]			0.0157	0.1350	0.0212	0.0442
Week 16	25.92 (2.11)	22.00 (2.04)	16.78 (2.22)	16.30 (1.88)	14.21 (2.03)	14.72 (2.15)
p-value *vs.* placebo[b]			0.0032	0.0384	0.0001	0.0135
Week 20	26.33 (2.25)	20.86 (1.93)	14.59 (2.09)	14.01 (1.68)	12.84 (1.91)	12.52 (1.92)
p-value *vs.* placebo[b]			0.0002	0.0072	<0.0001	0.0021
Week 24	24.96 (2.15)	22.50 (2.16)	14.46 (2.00)	13.60 (1.77)	11.83 (1.83)	12.72 (2.04)
p-value *vs.* placebo[b]			0.0004	0.0016	<0.0001	0.001
CRP[c] (mg/dL)						
Baseline	2.78 (0.35)	1.49 (0.29)	2.39 (0.37)	2.13 (0.27)	3.03 (0.34)	1.42 (0.30)
p-value *vs.* placebo[b]			0.4474	0.1005	0.6075	0.8605
Week 2	2.54 (0.21)	1.32 (0.26)	0.47 (0.23)	0.95 (0.24)	0.34 (0.21)	0.15 (0.27)
p-value *vs.* placebo[b]			<0.0001	0.2810	<0.0001	0.0015
Week 8	2.88 (0.29)	1.18 (0.14)	0.14 (0.31)	0.25 (0.13)	0.14 (0.28)	0.08 (0.15)
p-value *vs.* placebo[b]			<0.0001	<0.0001	<0.0001	<0.0001
Week 16	2.26 (0.21)	1.31 (0.17)	0.39 (0.22)	0.11 (0.15)	0.11 (0.20)	0.13 (0.18)
p-value *vs.* placebo[b]			<0.0001	<0.0001	<0.0001	<0.0001
Week 20	2.90 (0.50)	1.24 (0.175)	0.54 (0.44)	0.15 (0.15)	0.39 (0.41)	0.30 (0.18)
p-value *vs.* placebo[b]			0.0005	<0.0001	0.0002	0.0002
Week 24	3.05 (0.32)	1.39 (0.17)	0.25 (0.32)	0.11 (0.15)	0.25 (0.29)	0.15 (0.17)
p-value *vs.* placebo[b]			<0.0001	<0.0001	<0.0001	<0.0001
Pain-VAS (mm)[c]						
Baseline	63.27 (3.52)	58.15 (3.62)	64.30 (3.71)	61.76 (3.34)	61.00 (3.38)	51.47 (3.76)
p-value *vs.* placebo[b]			0.8391	0.4514	0.6406	0.1878

Parameters	Placebo + MTX		Sarilumab 150 mg + MTX		Sarilumab 200 mg + MTX	
	Patients with anaemia at baseline (n=40)	Patients without anaemia at baseline (n=41)	Patients with anaemia at baseline (n=36)	Patients without anaemia at baseline (n=45)	Patients with anaemia at baseline (n=43)	Patients without anaemia at baseline (n=37)
Week 2	58.80 (3.81)	56.45 (3.58)	53.26 (4.02)	53.78 (3.34)	52.25 (3.67)	44.25 (3.73)
p-value vs. placebo[b]			0.3141	0.5766	0.2155	0.0165
Week 8	55.99 (3.88)	48.00 (3.58)	35.69 (4.11)	39.05 (3.32)	39.12 (3.74)	30.27 (3.78)
p-value vs. placebo[b]			0.0004	0.0640	0.0021	0.0007
Week 16	49.21 (3.87)	48.35 (3.51)	32.97 (4.08)	32.15 (3.23)	29.05 (3.72)	26.91 (3.71)
p-value vs. placebo[b]			0.0043	0.0007	0.0003	<0.0001
Week 20	55.53 (4.71)	49.87 (3.91)	28.58 (4.26)	30.65 (3.36)	29.88 (3.90)	27.67 (3.86)
p-value vs. placebo[b]			<0.0001	0.0002	<0.0001	<0.0001
Week 24	50.94 (4.05)	44.68 (4.04)	27.34 (3.58)	27.43 (3.21)	26.06 (3.28)	25.80 (3.71)
p-value vs. placebo[b]			<0.0001	0.0009	<0.0001	0.0006

Nominal p-values for results at 24 weeks vs. placebo were obtained using Type III sum of squares mixed-effects model for repeated measures assuming an unstructured covariance structure.

[a]Haemoglobin parameter was assessed in the safety population.

[b] Type III sum of squares MMRM with PROC MIXED assuming an unstructured covariance structure: model = treatment, prior biologic use (Yes, No), weight at screening (<55 kg, ≥55 kg), visit, and treatment-by-visit interaction.

[c]DAS28-CRP, CDAI, CRP and pain-VAS parameters were assessed in the mITT population.

CDAI: Clinical Disease Activity Index; CRP: C-reactive protein; DAS28-CRP: Disease Activity Score 28-joint count-CRP; LSM: least squares mean; MMRM: mixed model repeated measure; MTX: methotrexate; SE: standard error; VAS: visual analogue scale.

Supplementary Table S2. LSM (SE) values at each visit for parameters in patients with and without anaemia at baseline.

Parameters	Sarilumab					
	Patients with anemia			Patients without anemia		
	150 mg + MTX	200 mg + MTX	p-value	150 mg + MTX	200 mg + MTX	p-value
Change from baseline haemoglobin (g/dL)						
Week 2	0.55 (0.11)	0.48 (0.10)	0.6306	0.12 (0.08)	0.19 (0.85)	0.5411
Week 8	0.81 (0.14)	0.88 (0.13)	0.6819	0.26 (0.10)	0.25 (0.12)	0.9477
Week 16	0.98 (0.16)	0.95 (0.15)	0.8938	0.43 (0.11)	0.22 (0.13)	0.2048
Week 20	0.77 (0.18)	0.88 (0.16)	0.6579	0.41 (0.13)	0.20 (0.15)	0.2909
Week 24	1.19 (0.18)	1.20 (0.16)	0.9697	0.44 (0.13)	0.44 (0.15)	0.9841
Change from baseline DAS28-CRP						
Week 2	-1.11 (0.13)	-1.32 (0.12)	0.1966	-0.88 (0.11)	-1.07 (0.127)	0.2705
Week 8	-2.24 (0.16)	-2.16 (0.15)	0.7061	-1.89 (0.15)	-1.78 (0.17)	0.6253
Week 16	-2.50 (0.19)	-2.78 (0.17)	0.2859	-2.20 (0.17)	-2.08 (0.20)	0.6590
Week 20	-2.80 (0.20)	-2.78 (0.18)	0.9525	2.35 (0.16)	-2.27 (0.19)	0.7235
Week 24	-2.84 (0.19)	-2.91 (0.18)	0.7860	-2.50 (0.16)	-2.28 (0.19)	0.3793
Change from baseline CDAI						
Week 2	-6.55 (1.53)	-6.97 (1.41)	0.8377	-4.39 (1.32)	-5.39 (1.49)	0.6094
Week 8	-17.40 (1.81)	-13.98 (1.65)	0.1622	-13.89 (1.39)	-13.46 (1.60)	0.8346
Week 16	-20.58 (1.71)	-20.70 (1.57)	0.9601	-17.08 (1.67)	-16.61 (1.93)	0.8536
Week 20	-22.70 (1.77)	-21.83 (1.63)	0.7178	-19.33 (1.46)	-18.92 (1.70)	0.8533
Week 24	-22.57 (1.91)	-22.92 (1.75)	0.8938	-19.70 (1.53)	-18.44 (1.77)	0.5875
Change from baseline CRP (mg/dL)						
Week 2	-2.25 (0.11)	-2.49 (0.10)	0.1079	-0.84 (0.28)	-1.52 (0.32)	0.1053
Week 8	-2.61 (0.04)	-2.66 (0.03)	0.3127	-1.56 (0.08)	-1.73 (0.09)	0.1825
Week 16	-2.32 (0.11)	-2.67 (0.10)	0.0260	-1.69 (0.06)	-1.68 (0.07)	0.9366
Week 20	-2.17 (0.32)	-2.40 (0.30)	0.6083	-1.66 (0.09)	-1.52 (0.11)	0.3007
Week 24	-2.45 (0.12)	-2.50 (0.11)	0.7658	-1.70 (0.04)	-1.70 (0.05)	0.9336
Change from baseline pain-VAS (mm)						
Week 2	-10.69 (2.91)	-9.06 (2.65)	0.6735	-6.01 (2.43)	-7.86 (2.75)	0.6105
Week 8	-27.76 (3.43)	-21.95 (3.12)	0.2097	-20.21 (3.16)	-21.29 (3.63)	0.8221
Week 16	-30.01 (3.59)	-31.95 (3.27)	0.6878	-27.03 (3.05)	-24.99 (3.53)	0.6614
Week 20	-34.36 (3.78)	-30.86 (3.46)	0.4937	-28.76 (3.09)	-24.61 (3.59)	0.3815
Week 24	-35.04 (3.29)	-34.43 (3.03)	0.8899	-31.81 (3.04)	-26.67 (3.54)	0.2718

Type III sum of squares MMRM with PROC MIXED assuming an unstructured covariance structure: model = treatment, prior biologic use (Yes, No), weight at screening (<55 kg, ≥55 kg), visit, and treatment-by-visit interaction.

CDAI: Clinical Disease Activity Index; CRP: C-reactive protein; DAS28-CRP: Disease Activity Score 28-joint count-CRP; LSM: least squares mean; MMRM: mixed model repeated measure; MTX: methotrexate; SE: standard error; VAS: visual analogue scale.

Supplementary Table S3. Correlations among haemoglobin levels (LSM change from baseline) and clinical and laboratory markers of disease activity (LSM change from baseline) at Week 24.

Parameters	Placebo + MTX		Sarilumab 150 mg + MTX		Sarilumab 200 mg + MTX	
	Patients with anaemia at baseline (n=40)	Patients without anaemia at baseline (n=41)	Patients with anaemia at baseline (n=36)	Patients without anaemia at baseline (n=45)	Patients with anaemia at baseline (n=43)	Patients without anaemia at baseline (n=37)
CDAI						
Correlation coefficient	-0.17	0.08	0.11	0.01	-0.28	0.07
p-value	0.5844	0.7642	0.5908	0.9726	0.1204	0.7063
HAQ-DI						
Correlation coefficient	-0.25	0.08	-0.40	0.06	-0.13	-0.03
p-value	0.4260	0.7720	0.0349	0.7018	0.4793	0.8609
DAS28-CRP						
Correlation coefficient	0.13	0.07	-0.03	-0.11	-0.21	-0.03
p-value	0.6732	0.7927	0.8889	0.5039	0.2454	0.8868
CRP						
Correlation coefficient	-0.11	0.03	-0.24	-0.12	-0.35	-0.03
p-value	0.7257	0.9084	0.2162	0.4766	0.0483	0.8804
Albumin						
Correlation coefficient	0.19	0.47	0.72	0.29	0.45	0.59
p-value	0.5454	0.0542	<0.0001	0.0752	0.0092	0.0004
Pain VAS						
Correlation coefficient	-0.23	0.02	-0.25	0.11	-0.18	-0.06
p-value	0.4660	0.9411	0.2046	0.5193	0.3331	0.7472
Patient Global VAS						
Correlation coefficient	-0.28	-0.11	-0.28	0.08	-0.06	-0.01
p-value	0.3598	0.6841	0.1510	0.6188	0.7290	0.9469
TJC28						
Correlation coefficient	0.22	0.07	0.19	-0.12	-0.12	0.06
p-value	0.4818	0.7854	0.3247	0.4623	0.5084	0.7381
SJC28						
Correlation coefficient	-0.15	0.02	0.17	0.04	-0.17	0.15
p-value	0.6368	0.9540	0.3797	0.8247	0.3448	0.4428

CDAI: Clinical Disease Activity Index; CRP: C-reactive protein; DAS28-CRP: Disease Activity Score 28-joint count-CRP; HAQ-DI: Health Assessment Questionnaire-Disability Index; LSM: least squares mean; MTX: methotrexate; SJC: swollen joint count; TJC: tender joint count; VAS: visual analogue scale.