**Supplementary Tables/Figures**

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| **Table S1. Radiographic Endpoints** |
| **Endpoints** | **Week 52** | **Week 104** |
| **Placebo to sirukumab 50 mg q4w (n=203)** | **Placebo to sirukumab 100 mg q2w (n=203)** | **Sirukumab 50 mg q4w (n=419)** | **Sirukumab 100 mg q2w (n=444)** | **Placebo to sirukumab 50 mg q4w (n=194)** | **Placebo to sirukumab 100 mg q2w (n=186)** | **Sirukumab 50 mg q4w (n=384)** | **Sirukumab 100 mg q2w (n=412)** |
| SHS, mean (SD) change from baseline | 3.20 (6.78) | 3.51 (9.80) | 0.56 (2.79) | 0.31 (3.22) | 3.79 (8.15) | 3.37 (12.28) | 1.23 (4.45) | 0.76 (3.88) |
| SHS, mean (SD) change from Week 52 to 104a | – | – | – | – | 0.48 (3.65) | 0.28 (4.79) | 0.70 (2.72) | 0.43 (2.32) |
| Erosion score, mean (SD) change from baseline | 1.68 (3.81) | 1.86 (5.83) | 0.14 (1.91) | −0.17 (2.19) | 1.85 (4.71) | 1.49 (6.39) | 0.37 (2.85) | −0.05 (2.46) |
| JSN score, mean (SD) change from baseline | 1.52 (3.70) | 1.65 (4.40) | 0.42 (1.55) | 0.48 (1.77) | 1.94 (4.34) | 1.88 (6.27) | 0.86 (2.47) | 0.82 (2.50) |
| Proportions of patients, n (%), with radiographic progressionb | 63 (31.0) | 59 (29.1) | 55 (13.1) | 44 (9.9) | 51 (26.3) | 37 (19.9) | 55 (14.3) | 43 (10.4) |
| Proportions of patients, n (%), with change of ≤0 from baseline in SHS | 79 (38.9) | 77 (37.9) | 244 (58.2) | 278 (62.6) | 79 (40.7) | 68 (36.6) | 196 (51.0) | 234 (56.8) |
| q4w, every 4 weeks; q2w, every 2 weeks; SHS, modified Sharp/van der Heijde score; SD, standard deviation; JSN, joint space narrowing; SDC, smallest detectable change.aScore was based on observed data from Read Campaign 2.bSDC for change from baseline in SHS at Week 52=2.82 and Week 104=3.61. |

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| **Table S2. Mean (SD) Changes in SHS, Erosion, and JSN Scores** |
|  | **Met EE criteria** | **Crossed over at Week 52** | **Sirukumab 50 mg q4w** | **Sirukumab 100 mg q2w** |
| **Mean (SD) changes** | **Placebo to sirukumab 50 mg q4w** | **Placebo to sirukumab100 mg q2w** | **Placebo to sirukumab50 mg q4w** | **Placebo tosirukumab 100 mg q2w** |
| Change from baseline to Week 52 | (n=73) | (n=73) | (n=120) | (n=118) | (n=419) | (n=444) |
| SHS | 2.29 (4.39) | 2.56 (6.43) | 3.73 (7.99) | 4.14 (11.61) | 0.56 (2.79) | 0.31 (3.22) |
| Erosion score | 1.17 (2.41) | 1.19 (3.83) | 1.94 (4.49) | 2.29 (6.90) | 0.14 (1.91) | −0.17 (2.19) |
| JSN score | 1.12 (2.62) | 1.37 (3.24) | 1.79 (4.32) | 1.85 (5.10) | 0.42 (1.55) | 0.48 (1.77) |
| Change from baseline to Week 104 | (n=72) | (n=69) | (n=112) | (n=107) | (n=384) | (n=412) |
| SHS | 2.78 (5.51) | 2.85 (7.55) | 4.42 (9.48) | 3.68 (14.77) | 1.23 (4.45) | 0.76 (3.88) |
| Erosion score | 1.27 (3.20) | 1.22 (4.02) | 2.17 (5.51) | 1.63 (7.69) | 0.37 (2.85) | −0.05 (2.46) |
| JSN score | 1.51 (3.29) | 1.63 (4.11) | 2.26 (4.91) | 2.04 (7.43) | 0.86 (2.47) | 0.82 (2.50) |
| Change from Week 52 to Week 104 | (n=72) | (n=69) | (n=112) | (n=107) | (n=384) | (n=412) |
| SHS | 0.47 (2.07) | 0.78 (4.50) | 0.49 (4.19) | −0.06 (5.12) | 0.70 (2.72) | 0.43 (2.32) |
| Erosion score | 0.09 (1.41) | 0.39 (2.60) | 0.10 (3.12) | −0.38 (2.50) | 0.24 (1.65) | 0.10 (1.32) |
| JSN score | 0.38 (1.58) | 0.39 (2.35) | 0.39 (1.40) | 0.32 (3.11) | 0.46 (1.54) | 0.34 (1.51) |
| SD, standard deviation; SHS, modified Sharp/van der Heijde score; JSN, joint space narrowing; EE, early escape; q4w, every 4 weeks; q2w, every 2 weeks. |

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| **Table S3. Proportion of Patients With a Change of ≤0 in SHS** |
| **Proportion of patients with a change of ≤0, n (%)** | **Met EE criteria** | **Crossed over at Week 52** | **Sirukumab 50 mg q4w** | **Sirukumab100 mg q2w** |
| **Placebo to sirukumab50 mg q4w** | **Placebo to sirukumab 100 mg q2w** | **Placebo to sirukumab50 mg q4w** | **Placebo to sirukumab100 mg q2w** |
| Baseline to Week 52a | 30 (41.1) | 32 (43.8) | 46 (38.3) | 40 (33.9) | 244 (58.2) | 278 (62.6) |
| Baseline to Week 104b | 30 (41.7) | 27 (39.1) | 45 (40.2) | 37 (34.6) | 196 (51.0) | 234 (56.8) |
| Change from Week 52 to 104b | 49 (68.1) | 43 (62.3) | 74 (66.1) | 71 (66.4) | 219 (57.0) | 256 (62.1) |
| SHS, modified Sharp/van der Heijde score; EE, early escape; q4w, every 4 weeks; q2w, every 2 weeks.aMet EE criteria: placebo to sirukumab 50 mg q4w, n=73; placebo to sirukumab 100 mg q2w, n=73. Crossed over at Week 52: placebo to sirukumab 50 mg q4w, n=120; placebo to sirukumab 100 mg q2w, n=118. Sirukumab 50 mg q4w, n=419; sirukumab 100 mg q2w, n=444.bMet EE criteria: placebo to sirukumab 50 mg q4w, n=72; placebo to sirukumab 100 mg q2w, n=69. Crossed over at Week 52: placebo to sirukumab 50 mg q4w, n=112; placebo to sirukumab 100 mg q2w, n=107. Sirukumab 50 mg q4w, n=384; sirukumab 100 mg q2w, n=412. |

**Table S4.**  **Number of Patients With NCI-CTCAE toxicity Grades 3 and 4 Postbaseline Laboratory Abnormalities Through Week 120**

|  | **Placebo** **(n=556)** | **Sirukumab** |
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| **NCI-CTCAE Toxicity Grades 3 and 4 Abnormalities, n (%)** | **50 mg q4w combined****(n=798)** | **100 mg q2w combined****(n=799)** | **Overall****(n=1,597)** |
| ALT (increased) N Grade 3 (>5-20 × ULN) Grade 4 (>20 × ULN) | 5514 (0.7)2 (0.4) | 79322 (2.8)0 | 79833 (4.1)0 | 1,59155 (3.5)0 |
| AST (increased) N Grade 3 (>5-20 × ULN) Grade 4 (>20 × ULN) | 551 5 (0.9)0 | 7935 (0.6)0 | 79812 (1.5)0 | 1,59117 (1.1)0 |
| Cholesterol (increased) N Grade 3 (>10.36-12.95 mmol/L) Grade 4 (>12.95 mmol/L) | 54400 | 7849 (1.1)2 (0.3) | 79114 (1.8)0 | 1,57523 (1.5)2 (0.1) |
| Triglycerides (increased) N Grade 3 (>5.65-11.30 mmol/L) Grade 4 (>11.30 mmol/L) | 5448 (1.5)0 | 78429 (3.7)1 (0.1) | 79135 (4.4)3 (0.4) | 1,57564 (4.1)4 (0.3) |
| Neutrophils (segmented decreased) N Grade 3 (<1-0.5 × 109/L) Grade 4 (<0.5 × 109/L) | 551 3 (0.5)1 (0.2) | 79341 (5.2)6 (0.8) | 79834 (4.3)1 (0.1) | 1,59175 (4.7)7 (0.4) |
| Platelets (decreased) N Grade 3 (<50-25 × 109/L) Grade 4 (<25 × 109/L) | 55000 | 7931 (0.1)0 | 7981 (0.1)0 | 1,5912 (0.1)0 |
| Hemoglobin (decreased) N Grade 3 (<80 g/L) Grade 4 (N/A)a  | 5512 (0.4)0 | 7934 (0.5)0 | 7981 (0.1)0 | 1,5915 (0.3)0 |

NCI-CTCAE, National Cancer Institute Common Terminology Criteria for Adverse Events; q4w, every 4 weeks; q2w, every 2 weeks; ALT, alanine aminotransferase; ULN, upper limit of normal; AST, aspartate aminotransferase; N/A, not applicable.

aLife-threatening consequence; urgent intervention indicated.

**Figure S1. Study Design**

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RA, rheumatoid arthritis; DMARD, disease-modifying antirheumatic drug; PBO, placebo; EE, early escape; LE, late escape; CO, crossover; SIR, sirukumab; SC, subcutaneous; q4w, every 4 weeks; q2w, every 2 weeks;.

A total of 1,402 patients remained on study treatment at Week 52 and were included in the active-controlled efficacy population (Week 52 to 104). 1 patient in the placebo group crossed over to sirukumab 50 mg q4w at Week 52 but never received active drug and was not included in the efficacy full analysis set. 5 patients in the sirukumab 50 mg q4w who remained on study treatment at Week 52 were not included in the efficacy full analysis set. 2 patients in the sirukumab 100 mg q2w group who remained on study treatment at Week 52 were not included in the efficacy full analysis set.

**Figure S2. Patient Disposition**

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LTE, long-term extension.