Supplementary Online Content


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**eMethods.** Detailed Methods

This supplementary material has been provided by the authors to give readers additional information about their work.
eTable 1. Other Secondary End Points in Intention-to-Treat Analysis Set at 24 and 52 Weeks

<table>
<thead>
<tr>
<th></th>
<th>Placebo→Guselkumab 100 mg n=25</th>
<th>Placebo→Guselkumab 200 mg n=26</th>
<th>Guselkumab 100 mg n=54</th>
<th>Guselkumab 200 mg n=52</th>
<th>All groups combined n=157</th>
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<tr>
<td></td>
<td>p values</td>
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<td><strong>Placebo→Guselkumab</strong></td>
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<tr>
<td><strong>Placebo→</strong></td>
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<tr>
<td><strong>PPPASI-50/75/90/100 responders, n (%)</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>PPPASI-50</td>
<td>14 (56.0)</td>
<td>11 (42.3)</td>
<td>43</td>
<td>31</td>
<td>99 (63.1)</td>
</tr>
<tr>
<td>PPPASI-75</td>
<td>2 (8.0)</td>
<td>1 (3.8)</td>
<td>(27.8)</td>
<td>(26.9)</td>
<td>32 (20.4)</td>
</tr>
<tr>
<td>PPPASI-90</td>
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<td>0</td>
<td>5 (9.3)</td>
<td>5 (9.6)</td>
<td>10 (6.4)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>PPSI-50/75/90/100 responders, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPSI-50</td>
<td>7 (28.0)</td>
<td>7 (26.9)</td>
<td>26</td>
<td>22</td>
<td>62 (39.5)</td>
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<tr>
<td>PPSI-75</td>
<td>0</td>
<td>0</td>
<td>(16.7)</td>
<td>(11.5)</td>
<td>15 (9.6)</td>
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<tr>
<td>PPSI-90</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2 (3.8)</td>
<td>2 (1.3)</td>
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<tr>
<td>PPSI-100</td>
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<td><strong>Placebo→Guselkumab</strong></td>
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<td><strong>Placebo→</strong></td>
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<tr>
<td><strong>PPPASI-50/75/90/100 responders, n (%)</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PPPASI-50</td>
<td>19 (76.0)</td>
<td>19 (73.1)</td>
<td>45</td>
<td>44</td>
<td>127 (80.9)</td>
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<tr>
<td>PPPASI-75</td>
<td>11 (44.0)</td>
<td>12 (46.2)</td>
<td>(83.3)</td>
<td>(84.6)</td>
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<td>PPPASI-90</td>
<td>8 (32.0)</td>
<td>6 (23.1)</td>
<td>(55.6)</td>
<td>(59.6)</td>
<td></td>
</tr>
<tr>
<td>PPPASI-100</td>
<td>1 (4.0)</td>
<td>1 (3.8)</td>
<td>(29.6)</td>
<td>(36.5)</td>
<td></td>
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<tr>
<td><strong>PPSI-50/75/90/100 responders, n (%)</strong></td>
<td></td>
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<td></td>
<td>PPSI-50</td>
<td>PPSI-75</td>
<td>PPSI-90</td>
<td>PPSI-100</td>
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<tr>
<td></td>
<td>13 (52.0)</td>
<td>9 (36.0)</td>
<td>5 (20.0)</td>
<td>2 (8.0)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 (57.7)</td>
<td>6 (23.1)</td>
<td>3 (11.5)</td>
<td>1 (3.8)</td>
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<tr>
<td>PGA</td>
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<td></td>
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<tr>
<td>responders</td>
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<td></td>
<td></td>
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<tr>
<td>n (%)</td>
<td></td>
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<tr>
<td>Clear (0) or Almost clear (1)</td>
<td>8 (32.0)</td>
<td>7 (26.9)</td>
<td>17 (31.5)</td>
<td>-</td>
<td></td>
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<tr>
<td>Clear (0), Almost clear (1), or mild (2)</td>
<td>13 (52.0)</td>
<td>20 (76.9)</td>
<td>39 (72.2)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>33 (61.1)</td>
<td>- (69.2)</td>
<td>9 (16.7)</td>
<td>- (11.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>36 (69.2)</td>
<td>- (97)</td>
<td>- (55)</td>
<td>- (12)</td>
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</table>
**eTable 2. Overview of treatment-emergent adverse events through week 52 (All treated patients)**

<table>
<thead>
<tr>
<th></th>
<th>Placebo→Guselkumab</th>
<th>Guselkumab</th>
<th>Guselkumab</th>
<th>Guselkumab</th>
<th>All groups combined</th>
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<tr>
<td></td>
<td>100 mg n=25</td>
<td>200 mg n=26</td>
<td>100 mg n=54</td>
<td>200 mg n=52</td>
<td>n=157</td>
</tr>
<tr>
<td>Patients with ≥1 TEAEs</td>
<td>22 (88.0)</td>
<td>21 (80.8)</td>
<td>46 (85.2)</td>
<td>49 (94.2)</td>
<td>138 (87.9)</td>
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<tr>
<td>Patients ≥1 serious adverse events</td>
<td>1 (4.0)</td>
<td>0</td>
<td>3 (5.6)</td>
<td>2 (3.8)</td>
<td>6 (3.8)</td>
</tr>
<tr>
<td>TEAEs reasonably related to study agent</td>
<td>6 (24.0)</td>
<td>8 (30.8)</td>
<td>19 (35.2)</td>
<td>19 (36.5)</td>
<td>52 (33.1)</td>
</tr>
<tr>
<td>TEAEs leading to discontinuation of study agenta</td>
<td>1 (4.0)</td>
<td>1 (3.8)</td>
<td>7 (13.0)</td>
<td>6 (11.5)</td>
<td>15 (9.6)</td>
</tr>
<tr>
<td>TEAEs &gt;5% in any of the treatment arm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nasopharyngitis</td>
<td>15 (60.0)</td>
<td>12 (46.2)</td>
<td>18 (33.3)</td>
<td>23 (44.2)</td>
<td>68 (43.3)</td>
</tr>
<tr>
<td>Cystitis</td>
<td>2 (8.0)</td>
<td>2 (7.7)</td>
<td>3 (5.6)</td>
<td>0</td>
<td>7 (4.5)</td>
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<tr>
<td>Oral herpes</td>
<td>0</td>
<td>3 (11.5)</td>
<td>0</td>
<td>3 (5.8)</td>
<td>6 (3.8)</td>
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<tr>
<td>Tinea pedis</td>
<td>0</td>
<td>0</td>
<td>5 (9.3)</td>
<td>0</td>
<td>5 (3.2)</td>
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<td>Eczema</td>
<td>1 (4.0)</td>
<td>0</td>
<td>6 (11.1)</td>
<td>8 (15.4)</td>
<td>15 (9.6)</td>
</tr>
<tr>
<td>Urticaria</td>
<td>1 (4.0)</td>
<td>1 (3.8)</td>
<td>2 (3.7)</td>
<td>5 (9.6)</td>
<td>9 (5.7)</td>
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<tr>
<td>Dermatitis contact</td>
<td>2 (8.0)</td>
<td>1 (3.8)</td>
<td>2 (3.7)</td>
<td>1 (1.9)</td>
<td>6 (3.8)</td>
</tr>
<tr>
<td>Pustular psoriasis*</td>
<td>2 (8.0)</td>
<td>0</td>
<td>4 (7.4)</td>
<td>0</td>
<td>6 (3.8)</td>
</tr>
<tr>
<td>Erythema</td>
<td>1 (4.0)</td>
<td>0</td>
<td>0</td>
<td>3 (5.8)</td>
<td>4 (2.5)</td>
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<tr>
<td>Ingrowing nail</td>
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<td>0</td>
<td>0</td>
<td>3 (5.8)</td>
<td>3 (1.9)</td>
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<tr>
<td>Pruritus</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3 (5.8)</td>
<td>3 (1.9)</td>
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<td>Rash</td>
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<td>0</td>
<td>0</td>
<td>3 (5.8)</td>
<td>3 (1.9)</td>
</tr>
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<td>Dental caries</td>
<td>2 (8.0)</td>
<td>1 (3.8)</td>
<td>4 (7.4)</td>
<td>4 (7.7)</td>
<td>11 (7.0)</td>
</tr>
<tr>
<td>Abdominal pain upper</td>
<td>1 (4.0)</td>
<td>0</td>
<td>4 (7.4)</td>
<td>1 (1.9)</td>
<td>6 (3.8)</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>1 (4.0)</td>
<td>1 (3.8)</td>
<td>3 (5.6)</td>
<td>1 (1.9)</td>
<td>6 (3.8)</td>
</tr>
<tr>
<td>Gastrooesophageal reflux disease</td>
<td>0</td>
<td>2 (7.7)</td>
<td>1 (1.9)</td>
<td>1 (1.9)</td>
<td>4 (2.5)</td>
</tr>
<tr>
<td>Injection site erythema</td>
<td>2 (8.0)</td>
<td>5 (19.2)</td>
<td>4 (7.4)</td>
<td>10 (19.2)</td>
<td>21 (13.4)</td>
</tr>
<tr>
<td>Injection site pruritus</td>
<td>1 (4.0)</td>
<td>3 (11.5)</td>
<td>1 (1.9)</td>
<td>5 (9.6)</td>
<td>10 (6.4)</td>
</tr>
<tr>
<td>Injection site swelling</td>
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<td>2 (7.7)</td>
<td>2 (3.7)</td>
<td>3 (5.8)</td>
<td>7 (4.5)</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>0</td>
<td>0</td>
<td>4 (7.4)</td>
<td>5 (9.6)</td>
<td>9 (5.7)</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>0</td>
<td>0</td>
<td>1 (1.9)</td>
<td>3 (5.8)</td>
<td>4 (2.5)</td>
</tr>
<tr>
<td>Periarthritis</td>
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<td>2 (7.7)</td>
<td>0</td>
<td>0</td>
<td>2 (1.3)</td>
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<tr>
<td>Arthropod bite</td>
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<td>0</td>
<td>3 (5.6)</td>
<td>1 (1.9)</td>
<td>5 (3.2)</td>
</tr>
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<td>Headache</td>
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<td>0</td>
<td>2 (3.7)</td>
<td>4 (7.7)</td>
<td>6 (3.8)</td>
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<tr>
<td>Hyperlipidaemia</td>
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<td>2 (3.7)</td>
<td>1 (1.9)</td>
<td>6 (3.8)</td>
</tr>
<tr>
<td><strong>TEAEs of special interest</strong></td>
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<tr>
<td>TEAEs of severe intensity</td>
<td>1 (4.0)</td>
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<td>1 (1.9)</td>
<td>0</td>
<td>2 (1.3)</td>
</tr>
<tr>
<td>Injection site reaction</td>
<td>3 (12.0)</td>
<td>6 (23.1)</td>
<td>5 (9.3)</td>
<td>13 (25.0)</td>
<td>27 (17.2)</td>
</tr>
<tr>
<td>Infections</td>
<td>17 (68.0)</td>
<td>14 (53.8)</td>
<td>32 (59.3)</td>
<td>32 (61.5)</td>
<td>95 (60.5)</td>
</tr>
<tr>
<td>Infections require oral or parenteral antibiotics treatment</td>
<td>6 (24.0)</td>
<td>7 (26.9)</td>
<td>17 (31.5)</td>
<td>15 (28.8)</td>
<td>45 (28.7)</td>
</tr>
</tbody>
</table>
All the values are expressed in n (%). TEAE, treatment-emergent adverse events. Incidence is based on the number of patients experiencing at least one adverse event, not the number of events.

*Pustular psoriasis indicate palmoplantar pustulosis specifically, †Includes pregnancy.
eFigure1 Mean percent improvement from baseline in PPPASI sub-scores: a) erythema b) pustules/vesicle c) desquamation/scale

a)

- Placebo (n=53)
- Placebo to Guselkumab 200 mg (n=26)
- Guselkumab 200 mg (n=52)
- Placebo to Guselkumab 100 mg (n=25)
- Guselkumab 100 mg (n=54)

b)
c)
eFigure 2. Change from baseline in a) PPPASI total score over time; b) PSSI total score over time; c) proportion of patients achieving a PPPASI-50 response; d) proportion of patients achieving a PPPASI-75 response
c) 

![Graph showing percent of patients achieving PPASI-50 over weeks for different treatment groups.](#)

- Placebo (n=53)
- Placebo to Guselkumab 200 mg (n=26)
- Placebo to Guselkumab 100 mg (n=25)
- Guselkumab 200 mg (n=52)
- Guselkumab 100 mg (n=54)


d) 

![Graph showing proportion of PPASI-75 responders (%) over weeks for different treatment groups.](#)

- Placebo (n=53)
- Placebo to Guselkumab 200 mg (n=26)
- Placebo to Guselkumab 100 mg (n=25)
- Guselkumab 200 mg (n=52)
- Guselkumab 100 mg (n=54)
eFigure 3: Percentage of PPSI sub score 0/1 responders: a) erythema b) pustules/vesicles c) desquamation/scale

a)

b)
eMethods. Detailed Methods

Exclusion criteria

Patients who were diagnosed with plaque-type psoriasis or had obvious improvement during screening (≥5 PPPASI total score improvement) or had evidence of current or a history of recurrent infectious disease were excluded. Patients were excluded if they had drug-induced PPP, or received treatment for a focal infection (e.g., tonsillectomy and dental therapy) within 24 weeks, or had a malignancy within 5 years before screening. Patients were also excluded if they received anti-TNFα biologic therapy within 12 weeks, or 5 half-lives of the first administration of study agent or any therapeutic agent directly targeted to IL-12, IL-17, or IL-23 within 24 weeks, or any other PPP therapy (including phototherapy or any medications with systemic effects) within 4 weeks, and/or topical medications within 2 weeks prior to first administration of study agent. Patients with a history or symptoms of active tuberculosis were also excluded.

EuroQOL-5 Dimensions Questionnaire (EQ-5D) definition

EQ-5D visual analog scale [VAS] “0=worst imaginable health state”, “100=best imaginable health state”; and a descriptive index score comprising of 5 dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Each of these dimensions have 5 levels: no problems, slight problems, moderate problems, severe problems and unable. The EQ-5D descriptive system can be converted into a single summary called EQ-5D index.

Statistical methods

To account for a larger common standard deviation of up to 10, this study was conducted using an adaptive statistical design, permitting 1 interim analysis to re-estimate the sample size and the potential to stop the study for futility. The maximum sample size for the study was capped at 75 patients in each group (225 patients in total). An interim analysis was planned when approximately 40% of planned sample size of 150 patients had completed the
week 16 visit or ended study participation before the week 16 visit. An external Independent Data Monitoring Committee (IDMC) was organised to monitor the data to ensure the safety of patients enrolled in this study and to meet interim analysis objectives. An independent Statistical Support Group calculated conditional power and sample size required for satisfying 90% conditional power. The IDMC compared calculated results with pre-specified sample size adaptation rules to determine final sample size for the study. The week 24 database lock was pre-planned and one additional database lock was planned at week 52 prior to study completion.

A fixed-sequence testing procedure was used to control overall Type I error rate at 0.05 level (2-sided) for comparisons of both guselkumab treatment groups versus the placebo group for the primary endpoint. The low dose group (ie, guselkumab 100 mg) was to be compared with placebo for the primary endpoint only if the comparison between the guselkumab 200 mg group versus the placebo group was positive. All p values reported for endpoints other than the primary endpoint are considered nominal.

For other secondary endpoints (including exploratory endpoints), continuous variables were summarized by treatment group and week using descriptive statistics. Categorical variables were summarized by treatment group and week using frequencies and percentages. Binary variables through week 16 were compared using stratified CMH chi-square testing or Fisher’s exact testing.

The intent-to-treat analysis set included the population of all patients randomised at week 0 and was the primary analysis population for efficacy analyses. The per-protocol analysis set included randomised patients excluding patients with any major protocol deviation which could interfere with efficacy evaluations. The safety analysis set included all patients who received at least 1 dose of study agent.
The robustness of results of the primary analysis was assessed by three sensitivity analyses and per-protocol analysis. The three sensitivity analyses included 1) the MMRM analysis for the primary analysis was repeated using data without applying treatment failure rules, 2) the analysis for the primary endpoint (change from baseline in PPPASI total score at week 16) based on data after applying treatment failure rules and LOCF using an analysis of covariance (ANCOVA) model with treatment (guselkumab high dose, guselkumab low dose, or placebo) and smoking status (smoking or non-smoking) as factors and baseline PPPASI score as a covariate and 3) ANCOVA analysis performed on sensitivity analysis 2 was repeated using data after applying treatment failure rules only.