

**Table SI. The background and clinical data of psoriasis patients treated with apremilast.**

| Charateristics           | Apremilast<br>(n = 20) |
|--------------------------|------------------------|
| Age (years)              | 63 (14)                |
| Gender (Male/Female)     | 13/7                   |
| BMI                      | 24.2 (2.6)             |
| Disease duration (years) | 16 (18) [1-56]         |
| PASI                     | 11.6 (1.7)             |
| Scalp involvement        | 14 (70.0%)             |
| Nail involvement         | 10 (50.0%)             |
| Buttock involvement      | 9 (45.0%)              |

BMI, body mass index; PASI, psoriasis area and severity index.

**Table SII. The percentage change from baseline in each serum cytokine**

|                | Week 4    | Week 16       | Week 24    |
|----------------|-----------|---------------|------------|
| IL-1 $\beta$   | -23 (14)* | -36 (18)*     | -36 (20)*  |
| IL-6           | -38 (18)* | -61 $\pm$ 11* | -65 (10)*  |
| IL-10          | -5 (28)   | -3 $\pm$ 38   | 66 (70)*   |
| IL-12          | -6 (22)   | -11 (23)      | 4 (29)     |
| IL-17A         | -38 (20)* | -64 $\pm$ 14* | -66 (14) * |
| IL-17F         | -37 (19)* | -64 $\pm$ 12* | -68 (11)*  |
| IL-17C         | -37 (19)* | -63 $\pm$ 12* | -69 (11)*  |
| IL-18          | -5 (9)    | -11 (19)      | -4 (24)    |
| IL-21          | -18 (15)* | -17 (14)*     | -17 (17)*  |
| IL-22          | -35 (20)* | -60 (10)*     | -65 (10)*  |
| IL-23          | -37 (17)* | -59 $\pm$ 13* | -64 (12)*  |
| IL-35          | -2 (16)   | 0 (16)        | 23 (16)*   |
| IL-36 $\gamma$ | -33 (21)* | -59 (11)*     | -64 (10)*  |
| IFN- $\alpha$  | -9 (14)   | -13 $\pm$ 16* | -4 (16)    |
| TGF- $\beta$ 1 | -16 (15)* | -16 $\pm$ 14* | -14 (17)*  |
| TNF- $\alpha$  | -39 (18)* | -61 $\pm$ 12* | -65 (12)*  |

Only TGF- $\beta$ 1 is in ng/mL. Other cytokines are in pg/mL. The values are given in mean (SD). Asterisks show statistically significant after Bonferroni correction ( $p < 0.05$ ).

**Table SIII. Correlation between serum cytokine levels and PASI score.**

| vs. PASI       | Week 0  | Week 4  | Week 16 | Week 24 |
|----------------|---------|---------|---------|---------|
| IL-1 $\beta$   | 0.1247  | 0.6586* | 0.3651  | 0.5529  |
| IL-6           | 0.1372  | 0.8979  | 0.7533* | 0.7331  |
| IL-10          | -0.1492 | -0.1901 | -0.2913 | -0.4024 |
| IL-12          | -0.0120 | 0.3943  | 0.7329* | 0.6696* |
| IL-17A         | 0.1478  | 0.9250* | 0.8092* | 0.6647* |
| IL-17F         | 0.1770  | 0.8965* | 0.6459* | 0.5936  |
| IL-17C         | 0.1708  | 0.9154* | 0.7548* | 0.5888  |
| IL-18          | 0.0065  | 0.7101* | 0.6747* | 0.6878* |
| IL-21          | -0.0600 | 0.5691  | 0.6918* | 0.6842* |
| IL-22          | 0.1460  | 0.8916* | 0.7228* | 0.5451  |
| IL-23          | 0.1845  | 0.8926* | 0.7564* | 0.6937  |
| IL-35          | -0.2257 | -0.1561 | -0.2022 | -0.4257 |
| IL-36 $\gamma$ | 0.1056  | 0.9021* | 0.7809* | 0.6583* |
| IFN- $\alpha$  | -0.0194 | 0.4193  | 0.6555* | 0.6570* |
| TGF- $\beta$ 1 | -0.0408 | 0.5120  | 0.6772* | 0.6913* |
| TNF- $\alpha$  | 0.1509  | 0.8855* | 0.7088* | 0.6141  |

Asterisks show statistically significant after Bonferroni correction ( $p < 0.05$ ).

**Table SIV. Correlation between serum cytokine levels and pruritus VAS score.**

| vs. Pruritus<br>VAS | Week 0  | Week 4  | Week 16 | Week 24  |
|---------------------|---------|---------|---------|----------|
| IL-1 $\beta$        | 0.6111  | 0.7520* | 0.4307  | 0.4615   |
| IL-6                | 0.5856  | 0.6058  | 0.5751  | 0.6867*  |
| IL-10               | 0.0193  | -0.3343 | -0.3693 | -0.5792  |
| IL-12               | 0.5851  | 0.6605* | 0.5505  | 0.4824   |
| IL-17A              | 0.5551  | 0.6464* | 0.6199  | 0.6419*  |
| IL-17F              | 0.5840  | 0.5573  | 0.7441* | 0.7059*  |
| IL-17C              | 0.5795  | 0.6187  | 0.7416* | 0.6978*  |
| IL-18               | 0.5492  | 0.7446* | 0.5895  | 0.6154   |
| IL-21               | 0.5092  | 0.8514* | 0.5636  | 0.6107   |
| IL-22               | 0.5598  | 0.5931  | 0.6308* | 0.6268*  |
| IL-23               | 0.5929  | 0.6238  | 0.5592  | 0.7606*  |
| IL-35               | -0.1247 | -0.4953 | -0.5533 | -0.7413* |
| IL-36 $\gamma$      | 0.5020  | 0.6223  | 0.6661* | 0.5569   |
| IFN- $\alpha$       | 0.5441  | 0.6970* | 0.4889  | 0.2647   |
| TGF- $\beta$ 1      | 0.5159  | 0.8374* | 0.5362  | 0.6022   |
| TNF- $\alpha$       | 0.5898  | 0.5846  | 0.6111  | 0.6996*  |

Asterisks show statistically significant after Bonferroni correction ( $p < 0.05$ ).