Dual neutralization of IL-17A and IL-17F with bimekizumab improves quality of life in patients with moderate-to-severe plaque psoriasis: results from a Phase 2b study and correlation with clinical response

Kim A. Papp¹, Joseph F. Merola², Alice B. Gottlieb³, Christopher E.M. Griffiths⁴, Kristina K. Harris⁵, Nancy Cross⁶, Luke Peterson⁶, Christopher Cioffi⁷, Andrew Blauvelt⁸

1Probity Medical Research and K. Page Clinical Research, Waterlo, ON, Canada; Harvard Medical School, Brigham and Women’s Hospital, Boston, MA, USA; 2New York Medical College, Metropolitan Hospital, New York, NY, USA; 3Dermatology Centre, University of Manchester, Manchester, UK; 4UCB Pharma, Hong Kong, China; 5UCB Biosciences Inc., Raleigh, NC, USA; 6UCB Pharma, Brussels, Belgium; 7Oregon Medical Research Center, Portland, OR, USA

Synopsis
- IL-17A and IL-17F are pro-inflammatory cytokines that share ~50% structural homology and overlapping biological function. Both IL-17A and IL-17F are expressed at sites of inflammation and independently co-operate with other cytokines to mediate inflammation
- Dual neutralization of IL-17A and IL-17F in disease-relevant human cellular systems resulted in lower expression of inflammation-linked genes and pro-inflammatory cytokines as well as greater suppression of immune cell migration when compared with IL-17A blockade alone
- Bimekizumab, a monoclonal IgG1 antibody, potently and selectively neutralizes the biological function of both IL-17A and IL-17F

Results
At the individual patient level, rapid improvements were observed in absolute PASI over time for those receiving bimekizumab. By Week 12, in the three highest bimekizumab dose groups almost all patients had an absolute PASI <2 with the majority of patients at or near zero (Figure 3); PASI improvements were correlated with reductions in DLQI, with the majority of patients achieving a DLQI of 0 or 1 (no impact of psoriasis on disease-specific HRQoL) at Week 12 (Figure 3)

In the pooled bimekizumab group, patients with lower absolute PASI (≥2) more frequently achieved DLQI of 0 or 1 versus those with higher absolute PASI at Week 12 (Figure 5A); similar results were observed at Week 12 in patients with lower BSA versus higher BSA involvement (Figure 5B)

Objective
To evaluate disease-specific health-related quality of life (HRQoL) data from the Phase 2b study and its correlation with the absolute PASI and Body Surface Area (BSA) affected

Methods
- Patients completed the Dermatology Life Quality Index (DLQI) questionnaire at baseline, Week 0, Week 1, Week 2, Week 4, Week 8 and Week 12
- DLQI of 0 or 1 was used to indicate no impact of psoriasis on disease-specific HRQoL; minimal clinically important difference (MCID) was defined as 4-point reduction in DLQI from baseline
- Patients were grouped by absolute PASI (≤1, >1–2, >2–5, >5) and BSA affected by psoriasis (≤5, >5) and BSA affected by psoriasis
- Patient demographics and baseline disease characteristics were balanced across treatment groups (mean [SD] DLQI total: 10.7 [6.9]; PASI: 19.1 [8.5]; percentage BSA involvement: 25.1 [13.3])

Conclusion
- Dual neutralization of IL-17A and IL-17F with bimekizumab in patients with moderate-to-severe plaque psoriasis was associated with rapid onset of clinically meaningful efficacy, with no unexpected safety findings
- Bimekizumab treatment also resulted in rapid improvements in disease-specific quality of life measures in the majority of patients, which correlated with clinical response
- These data support achievement of high levels of skin clearance (absolute PASI 52) being associated with superior improvements in disease-specific HRQoL

References

Figures:
1. Dual neutralization of IL-17A and IL-17F in immune-mediated inflammatory diseases
2A. PASI90 response over time; 2B. PASI100 response over time; 3. Absolute PASI and DLQI over time (patient-level data); 4A. MCID in DLQI at Week 12 combined bimekizumab dose group, full analysis set (observed values); 4B. MCID in DLQI achieved rapidly and differentiated from placebo after first dose across all bimekizumab groups (Figure 4B)

Figures 5A & 5B: DLQI of 0 or 1 by absolute PASI at Week 12; Figure 5B: DLQI of 0 or 1 by BSA affected by psoriasis at Week 12; combined bimekizumab dose group, full analysis set (observed values). *percentages calculated based on total numbers of evaluable patients at Week 12

Figures 6A & 6B: absolute PASI in bimekizumab-treated patients

Figures 7A & 7B: BSA affected by psoriasis in bimekizumab-treated patients