systemic lupus erythematosus (SLE). We report data from a Phase I double-blind, multiple dose study (NCT01764594) of dapirolizumab pegol (DZP), a PEGylated anti-CD40L Fab' fragment, in SLE patients.

**Methods** Twenty-four SLE patients were randomised (2:1, stratified by the presence of anti-phospholipid antibodies) to receive DZP (loading dose 30 mg/kg, then 15 mg/kg every 2 weeks for 10 weeks) or placebo. Patients were followed for 18 weeks. Objectives: safety and tolerability of DZP (primary); disease activity measures (BICLA and SRI-4; exploratory). Genes expressed by plasma cells, B cells, other immune cells and transcripts associated with SLE disease activity were analysed by qPCR.

**Results** No serious adverse events (AEs), thromboembolic events or deaths occurred. Most treatment-emergent AEs (TEAEs) were mild or moderate, transient, and resolved without intervention. Nasopharyngitis was the most common TEAE (6 patients in the DZP group; none with placebo). One patient withdrew due to upper respiratory tract infection (DZP group). Of DZP-treated patients evaluable for BICLA and SRI-4, 46% and 42% respectively, responded by Week 12 (vs 14% placebo; Table 1). Rapid and maintained mechanism-related gene expression changes were observed, particularly in plasma cell genes (IgA, IgG, IgJ) from the DZP group.

**Conclusions** DZP was well tolerated and demonstrated improvement in clinical measures of disease activity. A Phase II study is evaluating efficacy and safety of DZP in SLE patients (NCT02804763).

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**Abstract 90 Table 1**

<table>
<thead>
<tr>
<th>Week 12</th>
<th>Week 28</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBO</td>
<td>DZP</td>
</tr>
<tr>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Responders, n (%)</td>
<td>Responders, n (%)</td>
</tr>
<tr>
<td>1 (14.3)</td>
<td>7 (54.5)</td>
</tr>
<tr>
<td>Non-responders, n (%)</td>
<td>Non-responders, n (%)</td>
</tr>
<tr>
<td>6 (85.7)</td>
<td>6 (54.5)</td>
</tr>
</tbody>
</table>

**Abstract 90**

[**Table 1**](#)

**Potential Novel Natural B Cell Depleting and Immunosuppression Agent in Lupus Treatment Using Bryophyllum Pinnatum In Silico and In Pristane Induced Lupus Mice**

**Background and aims** The purpose of this study is to use *in silico* molecular docking and *in vivo* study to identify the potential of *Bryophyllum pinnatum* as B cell depleting and immune suppression agent in SLE.

**Methods** *In silico* was done by docking 32 phytochemical compounds well known immunosuppressive herbs into three B cell activating receptors: B cell activating factor receptors (BAFF-R), trans- membrane activator and calcium modulator and cyclophilin ligand interactor (TACI), and B-cell maturation antigen (BCMA). *In vivo* study was done in pristane induced mice model treated with different doses of *Bryophyllum pinnatum* extract (B1:10.5 mg/kgBW/day, B2:21 mg/kgBW/day, and B3:42 mg/kgBW/day). Extracts were given everyday per orally from 3rd to 4th months after pristane injection. spleen mature B cell (CD19+CD22+) and Th1, Th2 and Th17 percentages were assessed using flow cytometry assay and serum anti-dsDNA level using ELISA.

**Results** It was revealed that one compound from *Bryophyl- lum pinnatum* had the strongest binding affinity to BAFF-R (−6.3 kcal/mol), to TACI (four compounds, −6.4 kcal/mol) and to BCMA (−7 kcal/mol). *In vivo* study revealed that *Bryophyllum pinnatum* treatment significantly lower the percentages of CD19+ CD22+ cell and anti-dsDNA levels in dose dependent manner which significantly lower compared to control (p=0.002 and p=0.036 respectively). *Bryophyllum pinnatum* treatment lowered also Th1, Th2, and Th17 percentages dose dependently compared to control.

**Conclusions** *Bryophyllum pinnatum* is a potential natural product which may be used for B cell depleting agent in SLE treatment by suppressing Th1, Th2 and Th17 percentages.

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**Abstract 91**

**Effect of Curcumin and Vitamin D on Disease Activity, Fatigue, and Cytokine Profile in Systemic Lupus Erythematosus Patients With Deficiency Vitamin D**

CS Wahono*, H Kalim, I Saveria, Z Wahyuni, RA Dimpu, HS Kuboro. Medical Faculty Brawijaya University, Rheumatology-Immunology, Malang, Indonesia

**Background and aims** The purpose of this study is to use *in silico* molecular docking and *in vivo* study to identify the potential of *Bryophyllum pinnatum* as B cell depleting and immune suppression agent in SLE.

**Methods** *In silico* was done by docking 32 phytochemical compounds well known immunosuppressive herbs into three B cell activating receptors: B cell activating factor receptors (BAFF-R), trans- membrane activator and calcium modulator and cyclophilin ligand interactor (TACI), and B-cell maturation antigen (BCMA). *In vivo* study was done in pristane induced mice model treated with different doses of *Bryophyllum pinnatum* extract (B1:10.5 mg/kgBW/day, B2:21 mg/kgBW/day, and B3:42 mg/kgBW/day). Extracts were given everyday per orally from 3rd to 4th months after pristane injection. spleen mature B cell (CD19+CD22+) and Th1, Th2 and Th17 percentages were assessed using flow cytometry assay and serum anti-dsDNA level using ELISA.

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**Conclusions** *Bryophyllum pinnatum* is a potential natural product which may be used for B cell depleting agent in SLE treatment by suppressing Th1, Th2 and Th17 percentages.

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[**Table 1**](#)