A gel containing Soluble Beta-glucan (SBG), a natural polymer, is intended to be used on stalled dermal wounds where standard of care has failed. The aim of this presentation is to report on:
1. A Markov cost-effectiveness analysis of a 60 DFU patient RCT
2. A 12 week clinical evaluation of 26 patients’ wounds where a topical Soluble Beta-glucan (SBG) gel was applied to wounds that had stalled healing

Study 1:
Method
The data from an RCT of 60 DFU patients (Zykova 2016) was used to populate a Markov simulation cost-effectiveness model where two treatments were compared:
   i. Standard of care (SoC) plus SBG
   ii. SoC plus hydrogel (methylcellulose)
Control and experimental dressings were applied 3 x weekly, up to 12 weeks in 54 patients, 27 in each arm.

Results
- The proportion of ulcers healed at 12 weeks was 56% (SBG) and 37% (methylcellulose)
- Patients treated with SBG required 2.13 weeks less treatment (3.96 [SBG] v. 1.83 [SoC])
- Mean treatment cost per patient over 12 weeks was £1459.80 (SBG) and £1358.90 (SoC + hydrogel)
- Incremental cost of SBG £100.90 per patient
- Incremental cost per additional week healed £47.37

Data was extrapolated to an annual time horizon to provide a view on annual cost impact.

<table>
<thead>
<tr>
<th></th>
<th>Ulcers healed</th>
<th>Weeks healed</th>
<th>Weeks of treatment</th>
<th>Cost</th>
<th>Incremental weeks healed</th>
<th>Incremental cost</th>
<th>Incremental cost per additional week healed</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBG</td>
<td>94%</td>
<td>34.37</td>
<td>17.63</td>
<td>£3910.6</td>
<td>+9.73</td>
<td>-503.20</td>
<td>Dominates</td>
</tr>
<tr>
<td>Standard care</td>
<td>78%</td>
<td>24.65</td>
<td>27.35</td>
<td>£3693.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Over annual budget cycle, SBG is expected to heal 94% of wounds compared with 78% (SoC/hydrogel)
- SBG healed wounds more quickly. The mean ‘expected weeks healed’ was 34.37 (SBG) v. 24.65 (SoC/hydrogel)
- The mean ‘weeks of treatment’ with SBG was 17.63 v. 27.35 for SoC/ hydrogel with an incremental benefit of 9.73 weeks
- Over 12 months, SBG gel is expected to be cost saving, £503 per patient - dominant treatment option
Study 2:

26 patients who had received standard care and who had a variety of stalled wounds were recruited to a 12 week evaluation where treatment was changed to a gel containing Beta-glucan (King et al 2017).

Method
- The data from the 12 week clinical evaluation was used to calculate the wound response (change in surface area) and cost of care
- The analysis compares costs and outcomes for the treatment period with a gel containing Beta-glucan against a historic control where the wounds had not progressed under standard care

Results
- At baseline: all wounds had been treated with SoC for at least 4 weeks
- Prior treatment mean - 50 weeks
- Mean baseline wound area 8.1cm²
- At 4 week timepoint: average wound surface area reduction 41%, 1 wound healed, 19 decreased in size, 4 wounds remained static, 2 increased in size (Figure 1)

Figure 1

At the end of 4 weeks, 13 wounds reduced in size with 8 wounds showing a surface area reduction of >50%. 7 wounds healed within 12 weeks, with 3 more healing within 20 weeks.
HEALTH ECONOMICS OF A GEL WITH BETA-GLUCAN*

### Treatment in community clinics

<table>
<thead>
<tr>
<th>Healed wounds (n=10)</th>
<th>Total cost of prior treatment</th>
<th>Total treatment costs until healed (Gel with Beta-glucan + SoC)</th>
<th>Incremental costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£1541</td>
<td>£514</td>
<td>-£1027</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Full 26 patient cohort</th>
<th>Calculated 12 weeks prior costs</th>
<th>Cost during gel with Beta-glucan treatment period inclu SoC</th>
<th>Incremental costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£11443</td>
<td>£10430</td>
<td>-£1013</td>
</tr>
</tbody>
</table>

### Treatment in patient’s homes (26 wounds)

<table>
<thead>
<tr>
<th></th>
<th>Prior treatment duration (mean)</th>
<th>Total prior treatment costs</th>
<th>12-week treatment cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic control (pre-evaluation)</td>
<td>50.2 weeks</td>
<td>£4075 per patient</td>
<td>£974 per patient</td>
</tr>
<tr>
<td>Gel with Beta-glucan evaluation</td>
<td>-</td>
<td>-</td>
<td>£895 per patient</td>
</tr>
</tbody>
</table>

Average treatment costs for the gel containing Beta-glucan are £79 lower per patient when compared to 12 weeks SoC (£895 v. £974). More patients are healed earlier with the gel containing Beta-glucan and this reduces the need for continuing nurse visits.

### Conclusion

The two studies presented are complementary and provide a basis on which to assess the cost-effectiveness of a gel with Beta-glucan.

The RCT data shows that the use of SBG gives an expected annual saving of £503 per patient.

The case series data shows an average saving of £1,027 per patient if treated with a gel with Beta-glucan in community clinics, and an average saving of £2,540 per patient when treated at home.

A gel with Beta-glucan reactivates the healing process in stalled wounds resulting in faster healing and improved patient outcomes.

*the gel with Beta-glucan is marketed as Woulgan
This poster was supported by an educational grant from Biotec Beta-Glucans, Tromso, Norway

2. King, B. et al. 2016 - JWC, 2017 May