SynBiosys® is a safe, versatile, biodegradable polymer platform applicable for sustained release formulations of API’s from days to months

The SynBiosys polymers are multi-block copolymers composed of building blocks lactide, glycolide, ε-caprolactone and polyethylene glycol.

<table>
<thead>
<tr>
<th>Original compound</th>
<th>Degradation products</th>
<th>Excreted as</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactide</td>
<td>Lactic acid</td>
<td>CO2 and H2O</td>
<td></td>
</tr>
<tr>
<td>Glycolide</td>
<td>Glycolic acid</td>
<td>CO2 and H2O</td>
<td></td>
</tr>
<tr>
<td>Caprolactone</td>
<td>Hydroxy hexanoic acid PEG</td>
<td>CO2 and H2O</td>
<td></td>
</tr>
<tr>
<td>Polyethylene glycol (PEG)</td>
<td>Butanediamine (putrescine), CO2 and H2O</td>
<td>Butanediamine, CO2 and H2O</td>
<td></td>
</tr>
<tr>
<td>Butanediisocyanate (BDI)</td>
<td>Butanediol</td>
<td>Butanediol</td>
<td></td>
</tr>
<tr>
<td>Butanediol (BDO)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

“SynBiosys® has endless versatility”

- Ample choice of building blocks in the multi-block copolymer
- Endless possibilities to fine tune water-swellability, polymer degradation and API release
- SynBiosys is designed to fit the purpose

Example SynBiosys structure:
SynBiosys based sustained release formulations

“SynBiosys® shows excellent release performance”

SynBiosys’ versatility and water-swelling enable sustained release.

- From days to months
- Supporting small molecules, peptides and specially proteins
- By diffusion, thus without lag phase
- Limited or no burst of API

References

Stankovic et al., European journal of pharmaceutics and biopharmaceutics, 2014, Volume: 87, Issue: 2, Pages: 329-337
Stankovic et al., European journal of pharmaceutical sciences, 2013, Volume: 49, Issue: 4, Pages: 578-587
Ramazani et al., European journal of pharmaceutics and biopharmaceutics, 2015, Volume: 95, Pages: 368-377, Part: B
Steendam et al., Journal of controlled release, 2006, Volume: 116, Issue: 2, Pages: E94-E95
WO2004-007588, Biodegradable phase separated MBCPs
WO2005-068533, Amorphous MBCP
WO2012-005594, Biodegradable, phase separated, segmented multi-block copolymers and release of biologically active polypeptides
WO2013-015685, Biodegradable, semi-crystalline, phase-separated, thermoplastic multi-block copolymers for controlled release of biologically active compounds