Supporting Information

Hierarchical bioglass scaffolds: introducing the “milky way” for templated biomaterials

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Figure S1. TGA trace (air atmosphere) of bare Ludox® (L), Milk (M) and sample ML05 prepared with 19 (A), 37 (B) and 56 (C) mL of milk.
**Figure S2.** DTA trace (air atmosphere) of bare Ludox (full line) and sample ML05 annealed for 5 h at 773 K (dashed line).

**Figure S3.** FESEM images of cross-sectioned (perpendicular to the direction of freezing) sample ML10 before (upper row) and after (lower row) 5 h annealing at 973 K under air atmosphere.
Figure S4. FESEM images of cross-sectioned (perpendicular to the direction of freezing) sample ML10 (upper row) and ML14 (lower row) freezed at 2 mm min\(^{-1}\) (left column) or 4 mm min\(^{-1}\) (right column).
Figure S5. Pore distribution (BJH) from N$_2$ adsorption-desorption isotherm (77 K) (adsorption, left; desorption, right) of sample ML10 annealed 5 h at 773 K.

Figure S6. Pore distribution (BJH) from N$_2$ adsorption-desorption isotherm (77 K) (adsorption, left; desorption, right) of sample ML10 annealed 5 h at 873 K.

Figure S7. Pore distribution (BJH) from N$_2$ adsorption-desorption isotherm (77 K) (adsorption, left; desorption, right) of sample ML10 annealed 5 h at 973 K.

Table S1. Atomic percentage estimated from EDS probe for sample ML10 immersed in SBF at 37 ºC for increasing times.

<table>
<thead>
<tr>
<th>Exposure time/h</th>
<th>Si</th>
<th>P</th>
<th>Ca</th>
<th>Na</th>
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<tbody>
<tr>
<td>0</td>
<td>94,8</td>
<td>1,5</td>
<td>2,6</td>
<td>1,1</td>
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<tr>
<td>4</td>
<td>96,6</td>
<td>1,1</td>
<td>0,9</td>
<td>1,4</td>
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<td>24</td>
<td>75,9</td>
<td>9,4</td>
<td>12,7</td>
<td>1,9</td>
</tr>
</tbody>
</table>
Figure S8. EDS spectra of sample ML exposed at 37 °C to SBF for increasing periods.