### Figure S14

**a) Experiment 4 (hES/TH+) - Dendrogram 1**

<table>
<thead>
<tr>
<th>Branch</th>
<th>1 match</th>
<th>2 matches</th>
<th>3 matches</th>
<th>4 matches</th>
<th>Number of beads</th>
<th>Bead IDs</th>
<th>Probability</th>
<th>Bead Validation</th>
<th>2D-Culture Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch I</td>
<td>71 beads</td>
<td>10 beads</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>180</td>
<td>++</td>
</tr>
<tr>
<td>Branch II</td>
<td>9 beads</td>
<td>P = 0.02033147</td>
<td>1</td>
<td>184</td>
<td>++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch III</td>
<td>10 beads</td>
<td>P = 0.05759115</td>
<td>2</td>
<td>178, 217</td>
<td>+++</td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch IV</td>
<td>11 beads</td>
<td>P = 0.06750913</td>
<td>1</td>
<td>190</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch V</td>
<td>12 beads</td>
<td>P = 0.00313035</td>
<td>1</td>
<td>194</td>
<td>++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch VII</td>
<td>10 beads</td>
<td>P = 0.05759115</td>
<td>1</td>
<td>191</td>
<td>+++</td>
<td>++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch VIII</td>
<td>12 beads</td>
<td>P = 0.00313035</td>
<td>1</td>
<td>226</td>
<td>++</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch IX</td>
<td>8 beads</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>156</td>
<td>++</td>
<td>N/A</td>
</tr>
<tr>
<td>Branch X</td>
<td>8 beads</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>205</td>
<td>++</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch XI</td>
<td>7 beads</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>234</td>
<td>++</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Validation**
- Branch I: 71 beads (1 match, 10 beads, 6 beads, 10 beads, 6 beads, 4 beads, 1 bead)
  - Probability: P = 0.05759115
  - Bead Validation: ++, N/A
- Branch II: 9 beads (1 match, 184 beads, ++, +)
- Branch III: 10 beads (2 matches, 178, 217 beads, +++), +++
- Branch IV: 11 beads (1 match, 190 beads, +)
- Branch V: 12 beads (1 match, 194 beads, ++)
- Branch VII: 10 beads (1 match, 191 beads, +++)
- Branch VIII: 12 beads (1 match, 226 beads, ++, N/A)
- Branch IX: 8 beads (4 matches, 4 beads, 4 beads, 6 beads, 1 bead)
  - Probability: P = 0.00313035
  - Bead Validation: ++, N/A
- Branch X: 8 beads (3 matches, 5 beads, 1 bead)
- Branch XI: 7 beads (4 matches, 4 beads, 4 beads, 6 beads, 1 bead)
  - Probability: P = 0.02033147
  - Bead Validation: ++, +
### b) Experiment 4 (hES/TH+) - Dendrogram 2

<table>
<thead>
<tr>
<th>1 match</th>
<th>2 matches</th>
<th>3 matches</th>
<th>4 matches</th>
<th>number of beads</th>
<th>Bead IDs</th>
<th>Probability</th>
<th>Bead Validation</th>
<th>2D-Culture Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch I</td>
<td>44 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch II</td>
<td>67 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch III</td>
<td>78 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch IV</td>
<td>89 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch V</td>
<td>80 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch VI</td>
<td>78 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch VII</td>
<td>84 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch VIII</td>
<td>77 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### c) Experiment 4 (hES/TH+) - Dendrogram 3

<table>
<thead>
<tr>
<th>1 match</th>
<th>2 matches</th>
<th>3 matches</th>
<th>4 matches</th>
<th>number of beads</th>
<th>Bead IDs</th>
<th>Probability</th>
<th>Bead Validation</th>
<th>2D-Culture Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch I</td>
<td>46 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch II</td>
<td>79 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch III</td>
<td>79 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

N/A: Not Available
++: Positive
+++: Very Positive
+: Weakly Positive
-: Negative
N/A: Not Available
++: Positive
+++: Very Positive
+: Weakly Positive
-: Negative
<table>
<thead>
<tr>
<th>Branch</th>
<th>1 match</th>
<th>2 matches</th>
<th>3 matches</th>
<th>4 matches</th>
<th>number of beads</th>
<th>Bead IDs</th>
<th>Probability</th>
<th>Bead Validation</th>
<th>2D-Culture Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branch I</td>
<td>4 matches</td>
<td>1 match</td>
<td></td>
<td></td>
<td>6</td>
<td>91, 95</td>
<td>++</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Branch II</td>
<td>2 matches</td>
<td>6 beads</td>
<td>2 beeds</td>
<td></td>
<td>8</td>
<td>172</td>
<td>++</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Branch III</td>
<td>6 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch IV</td>
<td>7 beads</td>
<td>5 beads</td>
<td></td>
<td></td>
<td>8</td>
<td>134, 136</td>
<td>++</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Branch V</td>
<td>7 beads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch VI</td>
<td>5 beads</td>
<td>4 beads</td>
<td></td>
<td></td>
<td>2</td>
<td>99, 100</td>
<td>+</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Branch VII</td>
<td>8 beads</td>
<td>3 beads</td>
<td></td>
<td></td>
<td>9</td>
<td>124</td>
<td>+</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Branch VIII</td>
<td>7 beads</td>
<td>4 beads</td>
<td></td>
<td></td>
<td>5</td>
<td>135</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D) Experiment 4 (hES/TH+) - Dendrogram 4