<table>
<thead>
<tr>
<th>Fluorophore</th>
<th>Company</th>
<th>Code</th>
<th>Dilution</th>
<th>Working Concentration</th>
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<tr>
<td>Streptavidin Alexa Fluor® 647 conjugate</td>
<td>Invitrogen</td>
<td>S21374</td>
<td>1:333</td>
<td>3 µg/mL</td>
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<td>Streptavidin Alexa Fluor® 546 conjugate</td>
<td>Invitrogen</td>
<td>S11225</td>
<td>1:333</td>
<td>3 µg/mL</td>
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<td>Streptavidin cy3 conjugate</td>
<td>Jackson Immunoresearch</td>
<td>016-160-084</td>
<td>1:500</td>
<td>1 µg/mL</td>
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<tr>
<td>Marker</td>
<td>% (mean±S.D.)</td>
<td>Range (%)</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>---------------</td>
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<tr>
<td>PLZF</td>
<td>96.0±1.8</td>
<td>94.1-97.6</td>
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<tr>
<td>UTF1</td>
<td>37.1±15.1</td>
<td>24.8-54.0</td>
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<tr>
<td>KIT</td>
<td>13.3±4.1</td>
<td>8.6-16.3</td>
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<tr>
<td>Ki67</td>
<td>1.6±1.1</td>
<td>0.6-2.8</td>
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</tr>
</tbody>
</table>

Table S2. Proportion of ID4+ cells that co-stain for other markers.
Figure S1

(-) control for mouse primary antibodies

A

(-) control for rabbit primary antibodies

B

close normal rabbit IgG

close DNA

(-) control for goat primary antibodies with BT amplification

E

(-) control for rabbit primary antibodies

F

close normal rabbit IgG

close DNA

(-) control for mouse primary antibodies with BT amplification

I

(-) control for rabbit primary antibodies

J

close normal rabbit IgG

close DNA

(-) control for mouse primary antibodies

K

close normal mouse IgG

close DNA

(-) control for rabbit primary antibodies

L

close normal rabbit IgG

close DNA

Figure S1. Negative controls for standard and highly amplified IF assays.
Figure S2

Figure S2. Example of image-based cell quantitation procedure for ID4 IHC staining.
Figure S3

Figure S3. Representative UTF1 IHC in adult testis for young and older donors.
Figure S4

Figure S4. Co-localization of anti-ID4 and anti-UTF1 signals in the human seminiferous epithelium (additional field).
Figure S5. Representative GPR125 IHC in adult testis for young and older donors.
Figure S6. Partial overlap of anti-ID4 and anti-GPR125 signal in the human seminiferous epithelium.
Figure S7. Co-localization of anti-ID4 and either anti-KIT or anti-WT1 immunoreactive cells in the human seminiferous epithelium.