Supplemental Figure S1

The SMC5/6 complex is expressed in the human testis. SMC5, SMC6 GP and SMC6 Ab were detected at their expected sizes (120 and 145 kDa, resp.) on a western blot containing human testis extract.
Supplemental Table S1. Primary antibodies used.

| Name         | Host species | Supplier / cat #                                      | Dilution used |
|--------------|--------------|-------------------------------------------------------|---------------|
| a-SMC6 Ab    | Rabbit       | Abcam / ab18039                                       | 1/500         |
| a-SMC6 GP    | Guinea Pig   | This study                                            | 1/100         |
| a-SMC5 H190  | Rabbit       | Santa Cruz / sc-134544                                 | 1/100         |
| a-STAG3      | Guinea Pig   | Anna Kouznetsova and Christer Höög, Karolinska Institute, Stockholm, Sweden | 1/100         |
| a-CREST      | Human        | Fitzgerald / 90C-CS1058                                | 1/500         |
| a-SCP3       | Rabbit       | Abcam / ab15093                                       | 1/500         |
| a-yH2AX      | Mouse        | Millipore / 05-636                                    | 1/20000       |
| a-H3K9me3    | Mouse        | Millipore / 05-1250                                   | 1/500         |
| a-DMC1       | Mouse        | Abcam / ab11054                                       | 1/200         |
| a-Rad51      | Rabbit       | Jan Stap, Academic Medical Center, Amsterdam, The Netherlands | 1/100         |
Supplemental Table S2. Secondary antibodies used.

| Name                | Host species | Supplier / cat #               | Dilution used |
|---------------------|--------------|--------------------------------|---------------|
| a-Rabbit Alexa 488  | Donkey       | Life Technologies / A-21206    | 1/1000        |
| a-Mouse Alexa 488   | Goat         | Life Technologies / A-11029    | 1/1000        |
| a-Guinea Pig Alexa 488 | Goat       | Life Technologies / A-11073    | 1/1000        |
| a-Rabbit Alexa 555  | Donkey       | Life Technologies / A-31572    | 1/1000        |
| a-Mouse Alexa 555   | Goat         | Life Technologies / A-21424    | 1/1000        |
| a-Rabbit Alexa 647  | Goat         | Life Technologies / A-21246    | 1/1000        |
| a-Mouse Alexa 647   | Donkey       | Life Technologies / A-31571    | 1/1000        |
| a-Human Alexa 647   | Goat         | Life Technologies / A-21445    | 1/1000        |
Supplemental Table S3. Quantification of SMC6-positive and -negative $A_{\text{dark}}$ and $A_{\text{pale}}$ spermatogonia.

| Patient  | $A_{\text{dark}}$ |         |         | $A_{\text{pale}}$ |         |         |
|----------|-------------------|---------|---------|-------------------|---------|---------|
|          | Negative (%)      | Positive (%) | Total   | Negative (%)      | Positive (%) | Total   |
| URO0038  | 40 (90.9)         | 4 (9.1) | 44      | 147 (75.8)        | 47 (24.2) | 194     |
| URO0077  | 9 (56.3)          | 7 (43.8)| 16      | 130 (73.4)        | 47 (26.6) | 177     |
| URO0126  | 51 (77.3)         | 15 (22.7)| 66      | 232 (76.1)        | 73 (23.9) | 305     |
| Total    |                   |         |         |                   |         | 126     | 676     |