**Supplementary File 3**

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| **Template 1** | | | |
| **DNA fragment** | **Primers** | **Template** | **PCR or hybridization** |
| Biotin-handle | GACCGAGATAGGGTTGAGTG | pBlueScriptIISK + | PCR (taq), bio-11-dUTP |
| TTTTTTTTTTGGTCTCTCCAGCTGGCGTTACCCAACTTAATCGCC |
| 11.2 kb fragment | TTTTTTGGTCTCACTGGCAGGAACAGGGAATGC | Unmethylated Lambda DNA | PCR (phusion) |
| TTTTTTGGTCTCTACGCGCGTGCCCATGTTCTCTTTCAG |
| 8.4 kb fragment | TTTTTTGGTCTCTGCGTATAAGAAAGCAGACGACATCTGG | Unmethylated Lambda DNA | PCR (phusion) |
| TTTTTTGGTCTCCATACACGGTGATGGTCCCGG |
| Biotin-Cy5 handle | GACCGAGATAGGGTTGAGTG | pBlueScriptIISK + | PCR(Gotaq), Bio-11-dUTP+ Aminoallyl-dUTP-Cy5 |
| TTTTTTTTTTGGTCTCTGTATCTGGCGTTACCCAACTTAATCGCC |