**Supplementary Table S1:** List of primers used in this study for real time PCR

| Genes   | Primer sequences (5’–3’)                                                                 | Accession no.         | TA (°C) | Product size |
|---------|---------------------------------------------------------------------------------------|-----------------------|---------|--------------|
| CBS     | Forward: 5`-AGTTGGAGTGCTGGAGTG-3`<br>Reverse: 5`-TTGAGAGCGGATGAAGGTT-3`                | NM_001102000.2        | 54      | 156          |
| MTR     | Forward: 5`-TCGCTCACTCTCATATTCC-3`<br>Reverse: 5`-GACCTACCTCTACCATTCC-3`              | XM_010820411.3        | 52      | 139          |
| BHMT    | Forward: 5`-CAGACCTCATCTATGC-3`<br>Reverse: 5`-CTCCTTCATCAACCTCTAGTC-3`              | NM_001011679.1        | 56      | 130          |
| TNFAIP6 | Forward: 5`-CTCACGATGGAGGATCTAATG-3`<br>Reverse: 5`-ACCGCCTCTCCCTCTGC-3`             | NM_001007813.2        | 61      | 127          |
| HAS2    | Forward: 5`-ATGGTTAGGAGTGCG-3`<br>Reverse: 5`-AGAGTGCTGCTGAA-3`                      | NM_174079.3           | 58      | 152          |
| DNMT1   | Forward: 5`-GAGACAGATAAAGATC-3`<br>Reverse: 5`-TTTGAGAGTGCTGCTGAA-3`                 | NM_182651.2           | 54      | 144          |
| DNMT3A  | Forward: 5`-TGCTCTGCCGCTAG-3`<br>Reverse: 5`-CCTGCTTTATGGGAC-3`                      | NM_001206502.2        | 57      | 252          |
| POU5F1  | Forward: 5`-GGAAAGGATTCAGCCA-3`<br>Reverse: 5`-ATTTCCTGTTGCTGAC-3`                   | NM_174580.3           | 57      | 123          |
| NANOG   | Forward: 5`-TTTGAGCGCATTGAGT-3`<br>Reverse: 5`-ACCTCTAATGGCATCTATT-3`                | NM_001025344.1        | 53      | 159          |
| TEAD4   | Forward: 5`-AAAGTTGAGACGACTGAT-3`<br>Reverse: 5`-GCTTGAGATGCTGAA-3`                 | XM_010805630.3        | 52      | 100          |
| B actin | Forward: 5`-TTCTGGAGTAGCTG-3`<br>Reverse: 5`-GGTATCTCCTCTGAC-3`                     | XM_015467124.1        | 58      | 130          |
**Supplementary Table S2:** List of antibodies used for immunofluorescence flowcytometry.

| Antibody                                                                 | Supplier   | Catalog number | Species | Type                  | Dilution | References |
|-------------------------------------------------------------------------|------------|----------------|---------|-----------------------|----------|------------|
| DNMT3A (64B1446) protein antibody (primary antibody)                   | Novus      | NB120-13888     | Mouse   | Monoclonal/IgG1 Kappa | 1/200    | 1-3        |
| Mouse 5-methylcytosine (5-mC) antibody (Primary antibody)              | Eurogentec | BI-MECY-0500    | Mouse   | Monoclonal/IgG        | 1/400    | 1-3        |
| Goat Anti-Mouse IgG antibody, FITC conjugated (Secondary antibody)     | Millipore  | AP124F          | Goat    | Polyclonal/IgG        | 1/200    | 1-3        |

References:

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2 Jafari, S. *et al.* Epigenetic modification does not determine the time of POU5F1 transcription activation in cloned bovine embryos. *Journal of assisted reproduction and genetics* **28**, 1119-1127 (2011).
3 Jozi, M. *et al.* Induced DNA hypomethylation by folic Acid Deprivation in Bovine fibroblast Donor cells improves Reprogramming of Somatic cell nuclear transfer embryos. *Scientific reports* **10**, 1-13 (2020).