**Additional file 1: Supplementary Methods**

**Southern blotting**

*Dictyostelium* genomic DNA (gDNA) was purified as described elsewhere (Dictybase; [http://dictybase.org/techniques/molec_biol/genomicDNA_1.html](http://dictybase.org/techniques/molec_biol/genomicDNA_1.html)) and was digested with Xbal for 18 hours. 20 μg of digested gDNA (1.5 × 10⁶ cell/Lane) was separated by 0.7 % agarose gel electrophoresis and was transferred onto nylon membrane (Roche). Preparation, hybridization and detection of DIG-labelled DNA probes was performed by using DIG-High Prime DNA Labeling and Detection Kit II (Sigma-Aldrich) according to the manufacturer’s instructions. Briefly, the blots were hybridized with DIG-labelled DNA probes (Fig. S2A) at 42 °C for 18 hours, then washed twice with 0.1 % SDS and 0.5 × SSC at 65 °C for 15 minutes, incubated with Alkaline Phosphatase-conjugated anti DIG antibody (kit supplied, sheep, 15,000 × diluted) at 23 °C for 15 minutes. Chemi-luminescent signals of CSPD reaction were detected with X-ray film (Fuji) for 45 minutes.