Supplementary Information

HslO ameliorates arrested *ΔrecA polA* cell growth and reduces DNA damage and oxidative stress responses

A. Kaidow*[1, 3], N. Ishii[1], S. Suzuki[2], T. Shiina[2], K. Endoh[1], Y. Murakami[1] and H. Kasahara[1]

[1]Department of Biology, School of Biological Sciences, Tokai University, Sapporo 005-8601, Japan.
[2]Department of Molecular Medicine, School of Medicine, Tokai University, Isehara 259-1193, Japan
[3] Hokkaido Regional Research Center, Tokai University, Sapporo 005-8601, Japan.

[*]**Corresponding author:**
Akihiro Kaidow
Department of Biology, School of Biological Sciences, Tokai University, Sapporo 005-8601, Japan
Phone: 81-11- 571-5111 (ex2912)
Fax: 81-11-571-7879
E-mail: akaidow@tsc.u-tokai.ac.jp

Supplementary Figures

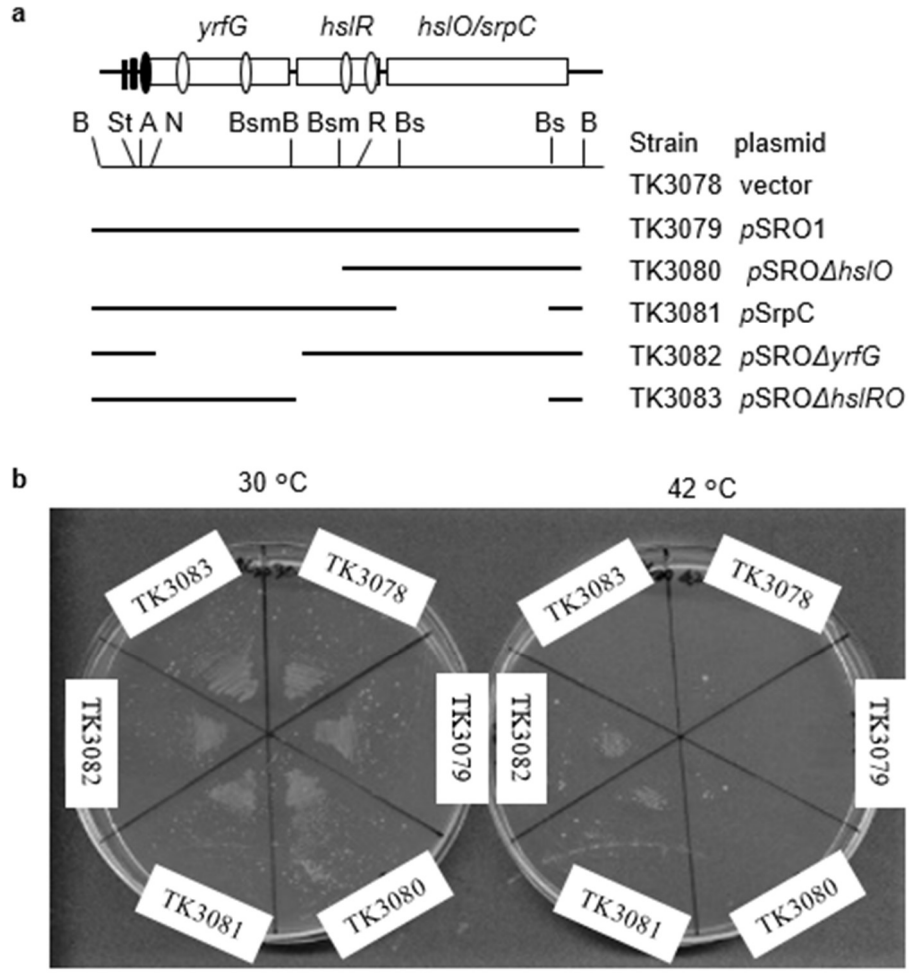

Fig. S1 Suppression of temperature sensitivity of *recAts polA* cells with *hslO* plasmids

(a) Schematic representation of the gene organiation of the *srp* operon

srp operon genes are indicated as open boxes. Black boxes upstream of *yrfG* indicate LexA-like sequences. Promoters in the *srp* region are shown as ovals. The restriction endonuclease cleavage sites were as follows: B; BamHI, P; PflMI, X; XmnI, St; StuI, A; AflIII, N; NsiI, E; EcoRV, Ag; AgeI, Sp; SphI, BsmB; BsmBI, Bsm; BsmI, R; RsrII, Bs; BstEII, and S; SalI. DNA fragments harboured in individual plasmids are represented by bars.

(b) Suppression of temperature sensitivity in AQ10549 cells harbouring different fragments of the *srp* operon

Overnight cultures (2 x 10^7 cells) of the indicated cells were spotted in each sector and

streaked as single colony isolation (S. C. I.) with a toothpick. Then, plates were overlaid with 3 mL soft LA medium. Plates were incubated at either 30°C or 42°C for 2 days. Cells harbouring plasmids are as described in (a).

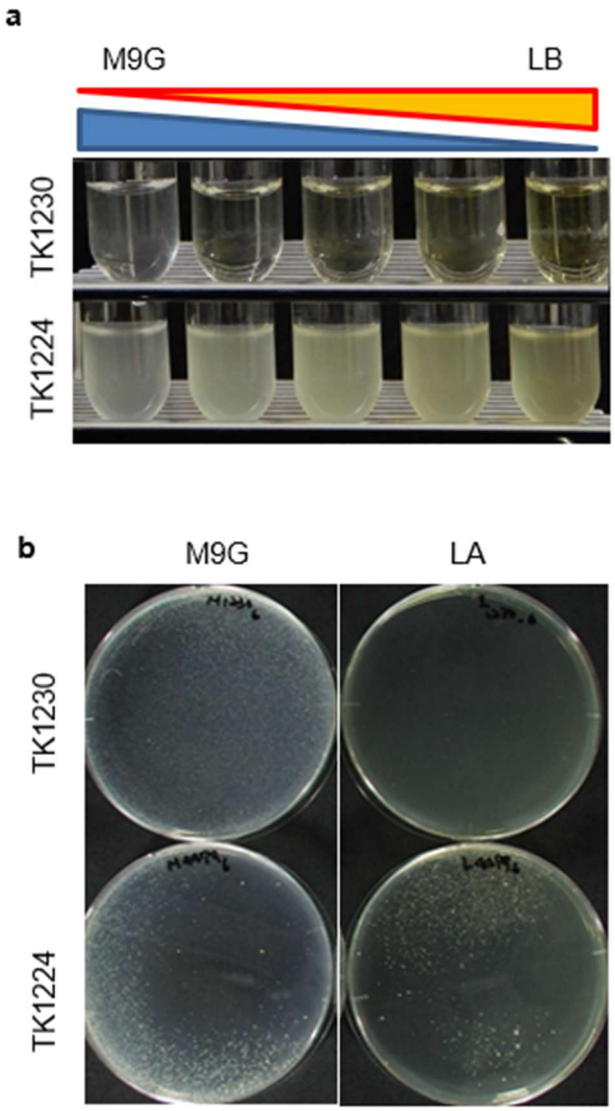

Fig. S2 Rich plate medium sensitivity of *ΔrecA306 polA25* cells

a) L broth medium sensitivity of *ΔrecA306 polA25* cells

Fully grown TK1230 or TK1224 cells were inoculated in various medium at 2 x 10^7 particles/mL (approximately 0.01 OD_{600}), and were cultured for 2 days at 30°C. From left to right: M9GCCA, 25% L medium with M9GCCA, 50% L medium with M9GCCA, 75% L medium with M9GCCA, and 100% L medium.

b) L plate medium sensitivity of *ΔrecA306 polA25* cells

Fully grown TK1230 or TK1224 cells were diluted with M9B. 10^6 particles of TK1230 or TK1224 cells were mixed with either soft MPGCCA medium or soft LA medium and were poured on M9GCCA or LA plates. Plates were cultured for 3 days at 30°C.

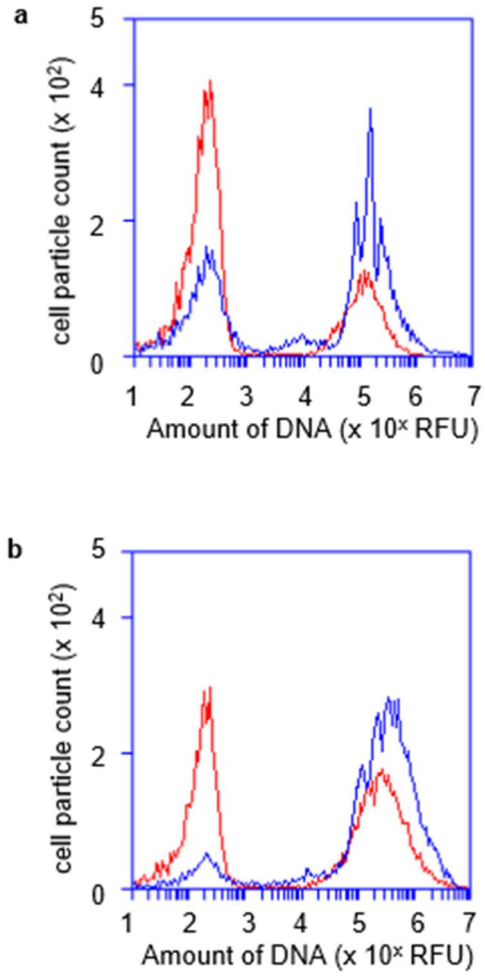

Fig. S3 Effect of medium on chromosome content in *ΔrecA polA* cells

(a) Comparison of DNA content in *ΔrecA polA p*vec cells in M9GCCA and L media

DNA in TK1230 cells (*ΔrecA polA p*vec) was quantitatively compared between M9GCCA and LB medium. Histograms show M9GCCA (blue) and LB medium (red). A total of 10,000 particles are shown.

(b) Comparison of DNA content for *ΔrecA polA p*EXsrpC cells in M9GCCA and L media

DNA in TK1224 cells (*ΔrecA polA p*EXsrpC) was analysed as described in (a).