SUPPORTING INFORMATION

A bipolar functionality of Q/N-rich proteins: Lsm4 amyloid causes clearance of yeast prions

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Supporting Materials

Table S1. PCR Primers.

Primer	Sequence (5'-to-3')
P1	GGGGGATCCATGCTACCTTTATATCTTTTAAC
P2	CCCCTCGAGTTAAAATTCGACCTTTTGTG
P3	CCCGAGCTCGATTTCTCGAATAAATC
P4	TTTGTCGACTCCGCTTCCTCCTCCGCTTCCTCCTCCAAATTCGACCTTTTGTGG
P5	CCCGTCGACATGGCCTCCTCCGAGGACG
P6	GGGCTCGAGTTAGGCGCCGGTGGAGTGG
P7	GGGCTCGAGTTACTTGACCTTGTCAATTATATTATC
P8	CCCCTCGAGTTAGTAGTATCTTTTATGCCC
P9	CCCCTCGAGTTAGCCGTTATTATTATTTC
P10	CCCCTCGAGTTAGTTACTGCTGTTGCTGTTG
P11	CCCCTCGAGTTAACCTAAACCATTGTTC
P12	CCCGGATCCATGCAGCAAATTAACTCCAAC
P13	CCCGGATCCAGCGTAATCTGGAACATCGTATGGGTACATACTAGTTCTAGAATCCG
P14	CCCCATATGCTACCTTTATATCTTTTAAC
P15	CCCGGATCCATGCCTCCAAAGAAGTTTAAGG
P16	GGGCTCGAGTCAATCTTCTTCATCGTCAG
P17	CCCGGATCCATGACATCAGTTCAAAAC
P18	GGGCTCGAGTTACATAAGCGTACAACAAAC
P19	CCCGGATCCATGGATTTCTTTAATTTG
P20	GGGCTCGAGTCATTCCAAATTGGTTAGG

P21	CCCGGATCCATGAACGTTTGCAAGTTG
P22	GGGCTCGAGTTAGTAATATCTATCGCTTTG
P23	CCCGGATCCATGATGAATAACAACGGC
P24	GGGCTCGAGTCATTCACCACGCAATGC
P25	CCCGGATCCATGGAGACCAGTTCTTTTG
P26	GGGCTCGAGTTACCATAGATTCTTCTTG
P27	CCCGGATCCATGAATCCGGGCGGTGAAC
P28	GGGCTCGAGTTAGTCGTCGTAGTTTTC
P29	CCCGGATCCATGATGAATAACAACGGC
P30	GGGCTCGAGTCATTCACCACGCAATGC
P31	CCCAGATCTATGTCTGCTTCATTGATTAATC
P32	GGGCTCGAGTTAAAAGATATTATTAAC
P33	CCCGGATCCATGTCCATGCCCATAGCAAG
P34	GGGCTCGAGTTAGCAACAACCTAATTTTTG
P35	CCCAGATCTATGTTTGGAGTTAGCCGTG
P36	GGGCTCGAGTCAGGTCTGCTCTGCAGCG

Supporting Figures

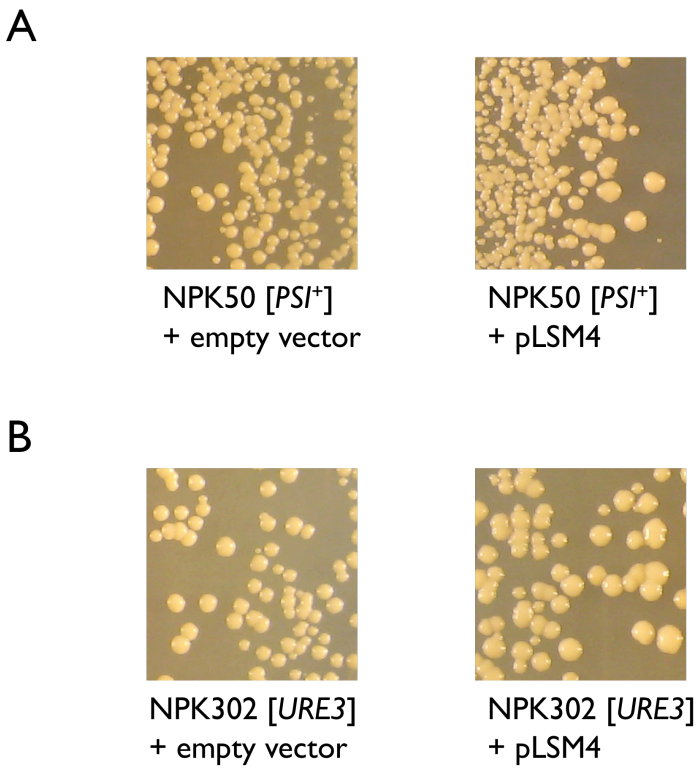

Fig. S1. Absence of the growth inhibition effect in [*PSI*$^+$] or [*URE3*] cells harboring an *LSM4* overexpressing plasmid on SC-leu selective media.

A. Absence of the growth inhibition effect in [*PSI*$^+$] cells. [*PSI*$^+$][*rnq*$^-$] cells (NPK50) were transformed with pRS425 (an empty vector) or pRS425GPDp-LSM4 (a multicopy *LEU2*$^+$ plasmid expressing *LSM4* under the control of the *GPD* promoter; denoted by pLSM4). Transformants were subsequently incubated on SC-leu media for 3 days.

B. Absence of the growth inhibition effect in [*URE3*] cells. [*URE3*][*rnq*$^-$] cells (NPK302) were subjected to the same experiment as A.

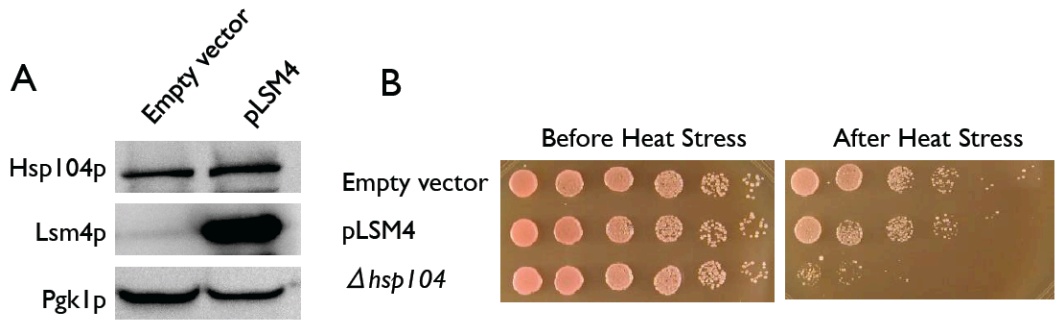

Fig. S2. Cellular abundance and thermo-tolerance activity of Hsp104 are unaffected by *LSM4* expression.

A. Cellular abundance of Hsp104 on *LSM4* overexpression. *LSM4* was overexpressed from pRS425GPDp-LSM4 (under the *GPD* promoter) in NPK302 [*URE3*][*rnq*$^{-}$] strain. Due to the low amount of lysate loaded, the Lsm4 protein expressed from the genome (see the lane of "Empty vector") was narrowly observed. Immunoblotting was carried out using anti-Hsp104 antibody, anti-Lsm4 antibody and anti-Pgk1 antibody.

B. Thermotolerance of *LSM4*-overexpressing cells. Cultures in the mid-log phase were incubated at 37℃ for 1 hour, and then heat-treated at 50℃ for 20 min. Survival rates were visualized by 5-fold serial dilutions on YPD plate with untreated controls. Used strains were NPK301 ([*ure-o*][*rnq*$^{-}$]) carrying an empty vector (top) or pRS425GPDp-LSM4 (middle), and NPK377 (NPK301-derivative carrying *Δhsp104*; bottom).