

Table S1. The *S. cerevisiae* strains used in the study.

Strain	Genotype	Polyphosphatase-related features	Polyphosphatase activity in cell-free extract, U/mg protein (logarithmic phase)	References
CRN	<i>MATa ade2 his3 ura3 ppn1Δ::CgTRP1</i>	PPN1 polyphosphatase null mutant	0.54	Sethuraman A, Rao NN, Kornberg A. The endopolyphosphatase gene: essential in <i>Saccharomyces cerevisiae</i> , Proc Natl Acad Sci USA 2001; 98:8542–7.
CRN/PPN1	<i>MATa ade2 his3 ura3 ppn1Δ::CgTRP1</i> transformed with vector pMB1/PPN1 Sc	PPN1 polyphosphatase overexpression	4.73	Eldarov MA, Baranov MV, Dumina, MV, Shgun AA, et al. (2013) Polyphosphates and exopolyphosphatase activities in the yeast <i>Saccharomyces cerevisiae</i> under overexpression of homologous and heterologous <i>PPN1</i> genes. Biochemistry (Moscow) 2013;78: 946–53.
CRN/PPX1	<i>MATa ade2 his3 ura3 ppn1Δ::CgTRP1</i> transformed with vector pMB1/PPX1 Sc	PPX1 polyphosphatase overexpression	14.5	Lichko LP, Eldarov MA, Dumina MV, Kulakovskaya TV. PPX1 gene overexpression has no influence on polyphosphates in <i>Saccharomyces cerevisiae</i> . Biochemistry (Moscow) 2014;79: 1211–5.

Table S2. The Pi and polyP content in *S. cerevisiae* cells grown in control YPD medium (24 h) and in the presence of 5mM MnSO₄ (24 h of growth for CRN/PPN1 strain and 50 h of growth for CRN and CRN/PPX1 strains).

Strain	Growth conditions	Mineral phosphorus compounds, $\mu\text{mol P/wet biomass}$		
		P _i	Acid soluble polyP	Acid insoluble polyP
CRN	Control	37.9 \pm 1.1	52.0 \pm 4.8	34.4 \pm 1.9
	+Mn ²⁺	18.6 \pm 0.7	64.0 \pm 2.5	48.5 \pm 1.9
CRN/PPN1	Control	40.8 \pm 0.9	24.6 \pm 0.5	30.7 \pm 2.3
	+Mn ²⁺	38.0 \pm 4.0	7.8 \pm 2.8	17.4 \pm 0.2
CRN/PPX1	Control	38.0 \pm 0.7	57.3 \pm 1.0	38.2 \pm 1.0
	+Mn ²⁺	33.5 \pm 5.8	44.5 \pm 1.5	35.3 \pm 1.9