

## Supplementary Material

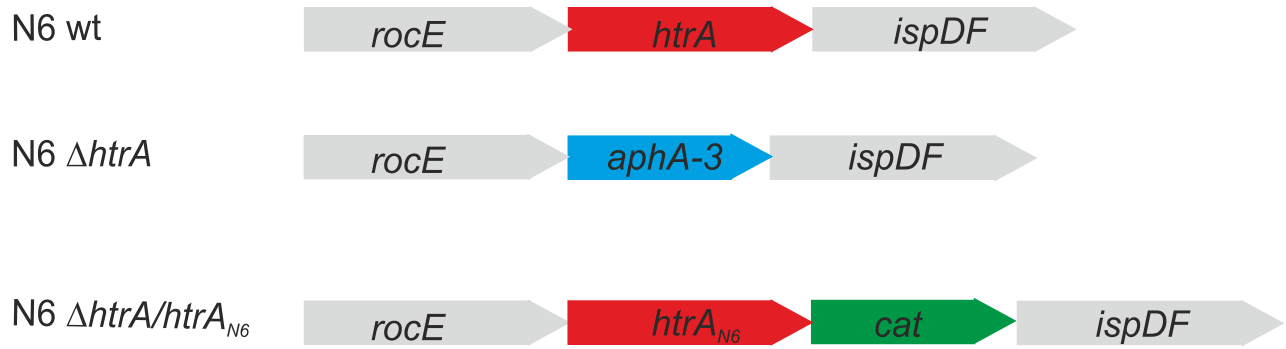
### Properties of the HtrA protease from bacterium *Helicobacter pylori* whose activity is indispensable for growth under stress conditions

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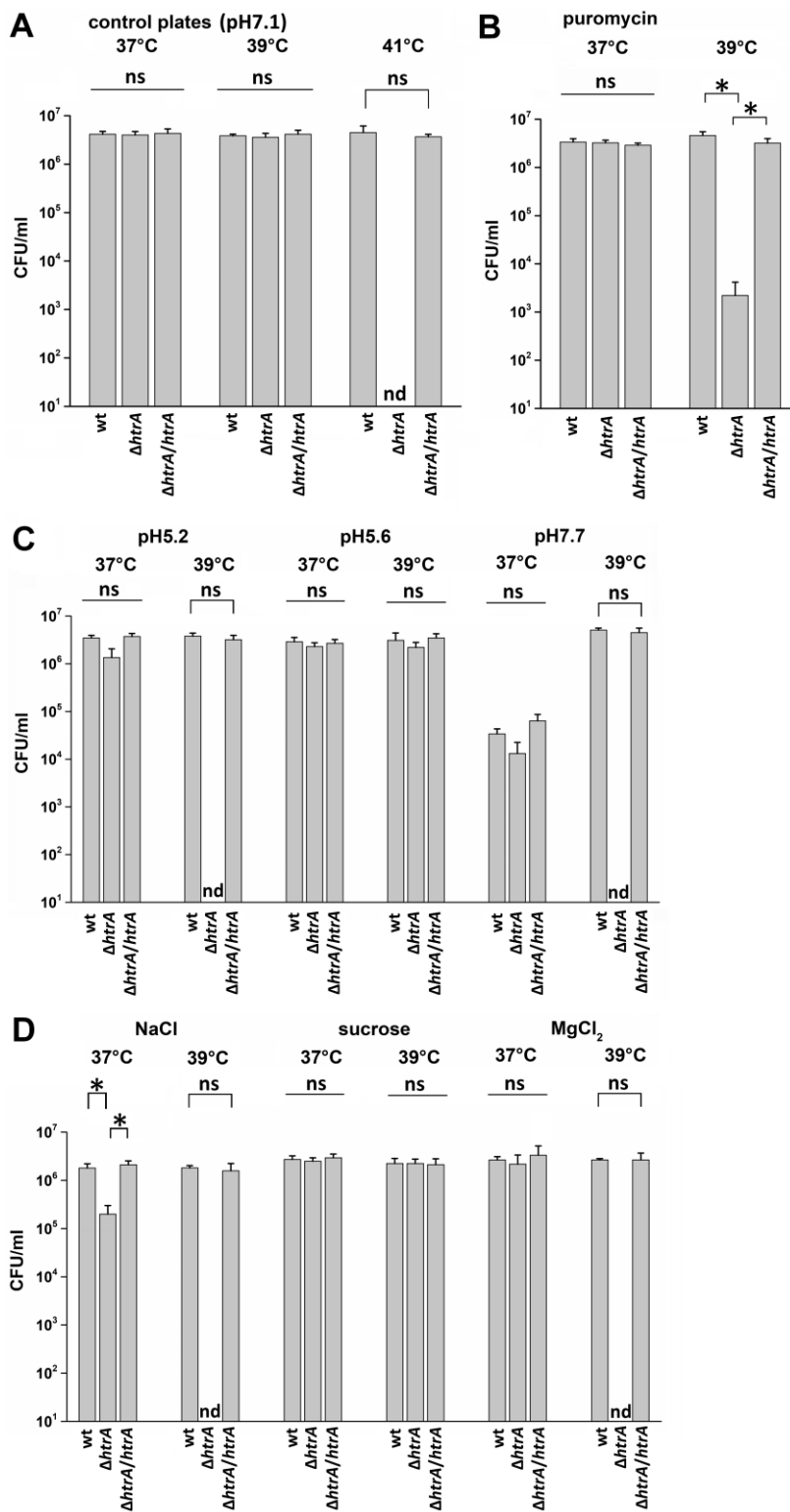
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**Supplementary Table S1.** PCR primers used in the work.

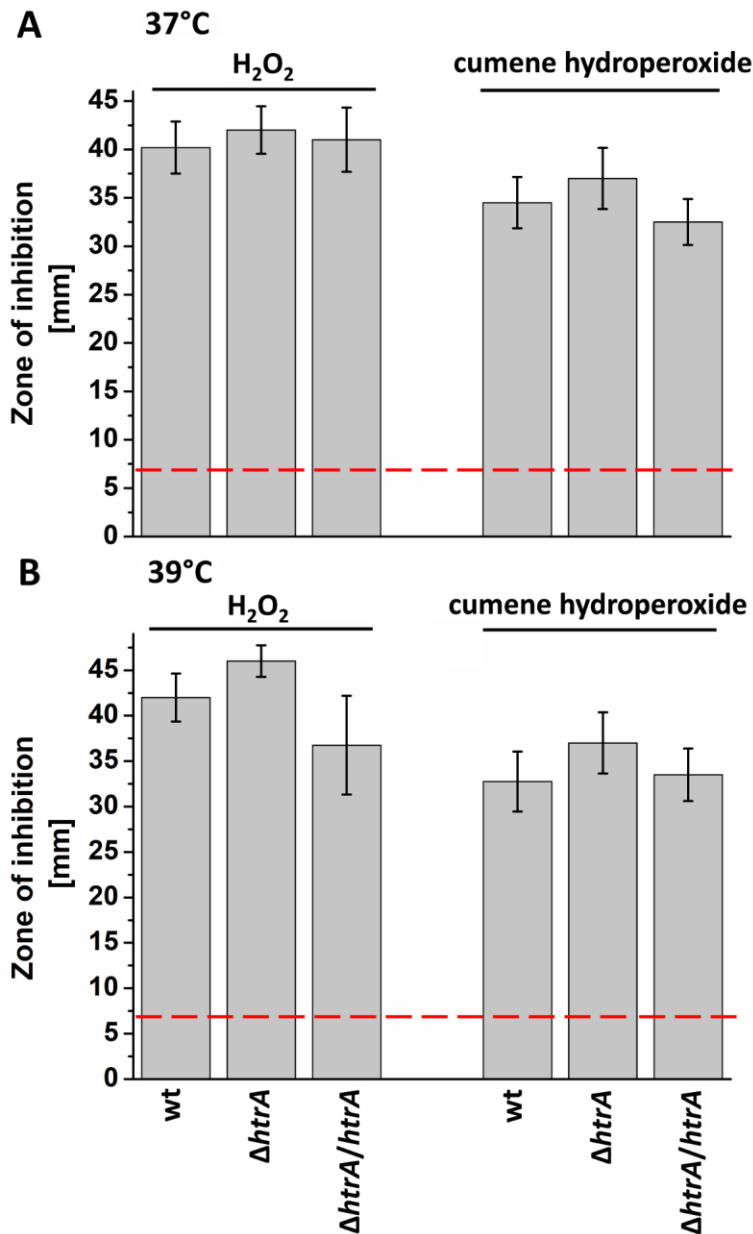
	<b>Orientations</b>	<b>Sequence (5`&gt; 3`)</b>
HphtrA_rev	reverse	ATACTCGAGTTTCACCAAAATGATTCTATAACCTTG
HphtrAJ99_fw	forward	ATACCATGGGCAATATCCAAATCCAAAACATGCCC
HphtrA26695_fw	forward	ATACCATGGGCAATATCCAAATCCAGAGCATGCCC
Hp_S221A_fw	forward	CCTGGAAATGCCGGCGGGCGCTTTAATTGATAGC
Hp_S221A_rev	reverse	GCTATCAATTAAAGCGCCGCCGGCATTTCAGG



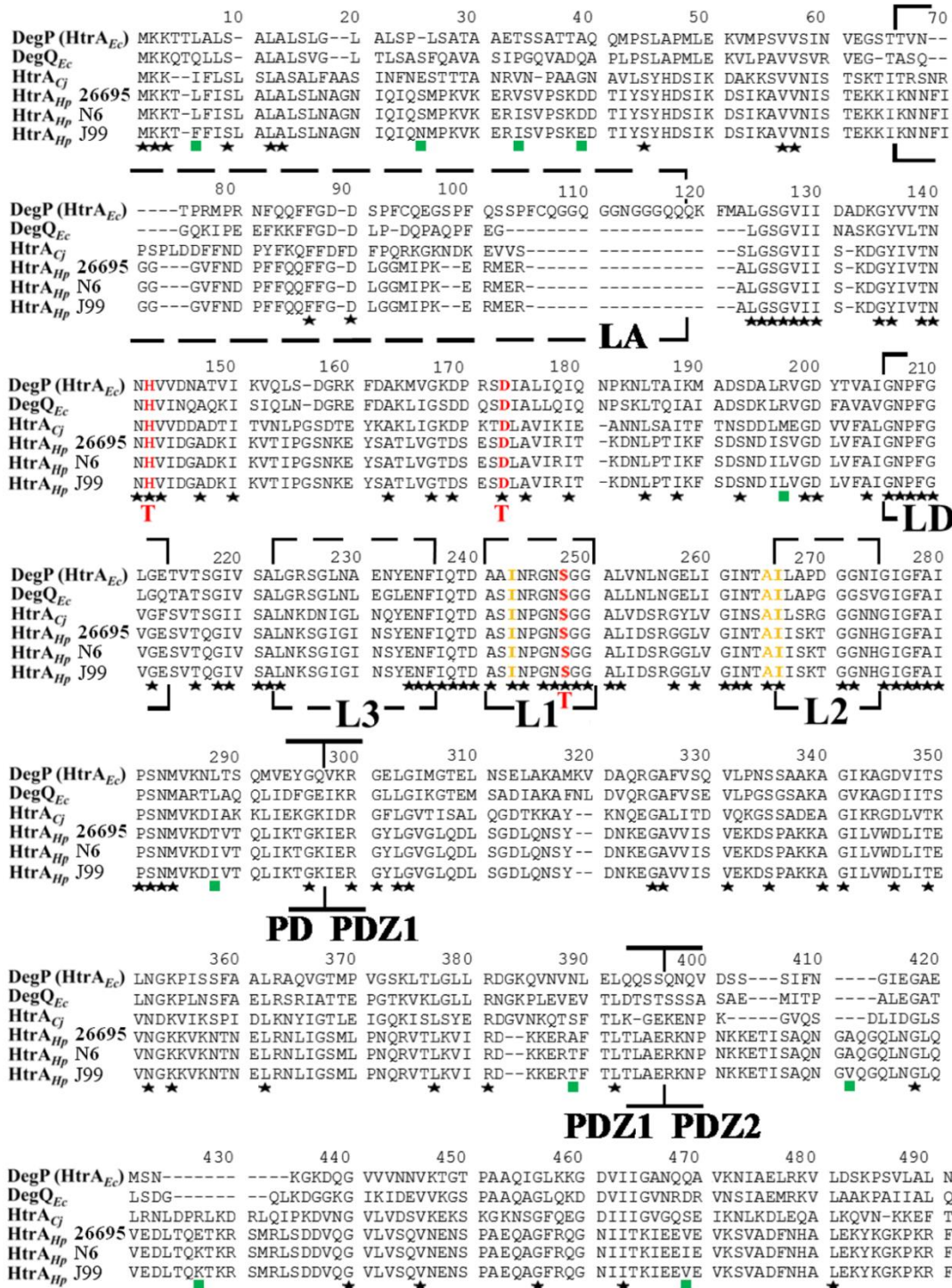
**Supplementary Figure S1.** Schemes of the *htrA* locus and the flanking *H. pylori* chromosomal regions in the wt,  $\Delta htrA$ , and  $\Delta htrA/htrA_{N6}$  complemented N6 strains



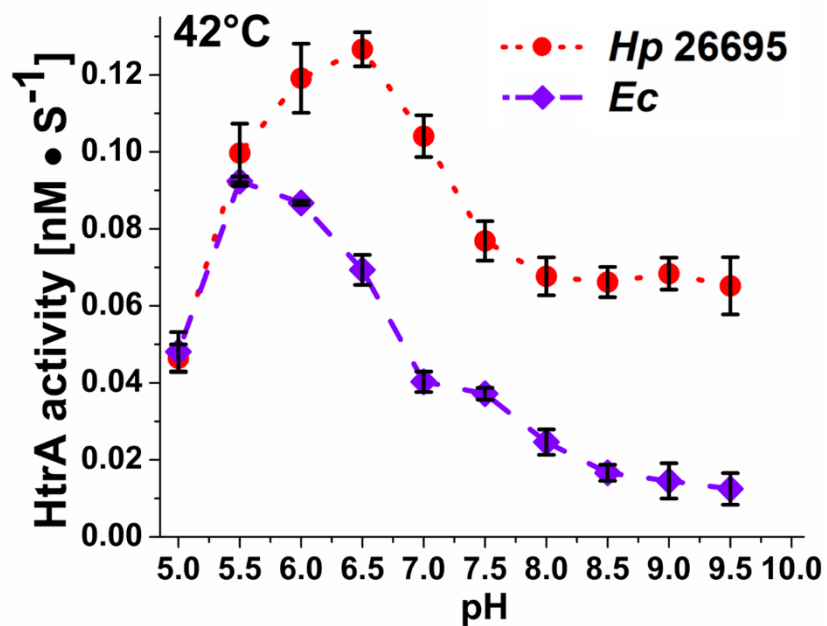
**Supplementary Figure S2.** Survival of the stress-exposed *H. pylori* cells. The standard error of mean (SEM) was calculated using at least three repetitions. Data were evaluated using Bonferroni test. Statistical significance was defined by  $p \leq 0.05$  (\*). nd- no single colonies detected; ns- no significant differences. The representative pictures presenting *H. pylori* growth under the analyzed stress conditions are presented in Figures 1A, B, 2A, and B that correspond to parts A, B, C and D of this figure, respectively.



**Supplementary Figure S3.** Effects of oxidative stress on growth of *H. pylori* N6  $\Delta htrA$ . Bacterial cultures of the N6  $\Delta htrA$  and the control strains (N6 and *htrA* complementation) were cultured and challenged with H<sub>2</sub>O<sub>2</sub> and cumene hydroperoxide as described in the Materials and Methods section. Plates were incubated for 3 days at (A) 37°C and (B) 39°C. The experiments were performed at least three times. The red dotted line indicates the diameter of the filter disc. Analysis by Bonferroni test showed no significant differences ( $p < 0.05$ ) between the tested strains for all experimental conditions.



**Supplementary Figure S4** Comparison of the amino acid sequences of the selected HtrA homologs: HtrA (DegP) and DegQ *E. coli*, HtrA *C. jejuni* and HtrA *H. pylori* (26695, N6 and J99 strains). The important regulatory loops (LA, LD, L1, L2, L3) as well as domain organisation are marked with dashed lines. PD-stands for the protease domain, T- catalytic triad. Asterisks indicate the conserved residues. The S1 specificity pocket is marked in orange within the L1 and L2 loops. Green squares indicate differences between HtrA<sub>Hp</sub> from *H. pylori* 26695, N6 and J99 strains.



**Supplementary Figure S5.** pH-dependence of the HtrA<sub>Hp</sub> (*Hp 26695*) and HtrA<sub>Ec</sub> (*Ec*) at 42°C. The error bars represent the standard deviation values from three independent measurements.