

Supplementary Materials

The *Helicobacter pylori* Urease Virulence Factor Is Required for the Induction of Hypoxia-Induced Factor-1 α in Gastric Cells

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Mass Spectrometry

The bands that were diminished in *H. pylori* 84-183 Δ cagA were excised from gel lanes with extracts from the *H. pylori* 84-183 wt (Figure 2A) and submitted to mass spectrometry analysis, using alpha-Cyano-4-hydroxycinnamic acid as the matrix. Mass spectra data was obtained on a MALDI-TOF Microflex (Bruker Daltonics Inc., Billerica, MA, USA) in positive ion mode by means of reflection detection. For data acquisition the flexControl 3.0 software program (Bruker Daltonik GmbH, Bremen, Germany) was used. Peaks present in the samples were identified using the Mascot PMF tool of mMass. Peptide fingerprint identification by MALDI-MS revealed the presence of the subunits Urease A and Urease B (UreA, partial [*Helicobacter pylori*] and Urease subunit beta [*Helicobacter pylori*]), with scores 135 and 111, respectively. Scores greater than 94, were considered significant ($p < 0.05$).

Table S1. Protein identification. The results of the Mascot Search are shown. Peptides with protein scores greater than 94 were considered significant ($p < 0.05$). The Protein score is $-10 \cdot \log(P)$, where P is the probability that the observed match is a random event.

- [ADM51967.1](#) Mass: 15328 Score: **135** Expect: 4.1×10^{-6} Matches: 11
UreA, partial [*Helicobacter pylori*]
- [ADM51929.1](#) Mass: 15457 Score: **135** Expect: 4.1×10^{-6} Matches: 11
UreA, partial [*Helicobacter pylori*]
- [ADM51943.1](#) Mass: 15491 Score: **135** Expect: 4.1×10^{-6} Matches: 11
UreA, partial [*Helicobacter pylori*]
- [ADM51973.1](#) Mass: 15434 Score: **135** Expect: 4.1×10^{-6} Matches: 11
UreA, partial [*Helicobacter pylori*]
- [ADM51933.1](#) Mass: 14958 Score: **121** Expect: 0.0001 Matches: 10
UreA, partial [*Helicobacter pylori*]
- [AAR89372.1](#) Mass: 17604 Score: **114** Expect: 0.00051 Matches: 10
UreA, partial [*Helicobacter pylori*]
- [AAR89370.1](#) Mass: 17798 Score: **114** Expect: 0.00051 Matches: 10

UreA, partial [*Helicobacter pylori*]

[AAR89368.1](#) Mass: 17935 Score: **113** Expect: 0.00064 Matches: 10

UreA, partial [*Helicobacter pylori*]

[AAM70366.1](#) Mass: 18266 Score: **109** Expect: 0.0016 Matches: 10

urease UreA, partial [*Helicobacter pylori* 26695]

[BAX35500.1](#) Mass: 18494 Score: **109** Expect: 0.0016 Matches: 10

urease UreA, partial [uncultured *Helicobacter* sp.]

[AAM70409.1](#) Mass: 18863 Score: **106** Expect: 0.0032 Matches: 10

urease UreA, partial [*Helicobacter pylori* SS1]

[ADM51959.1](#) Mass: 13518 Score: **105** Expect: 0.0041 Matches: 9

UreA, partial [*Helicobacter pylori*]

[ADM51934.1](#) Mass: 13732 Score: **105** Expect: 0.0041 Matches: 9

UreA, partial [*Helicobacter pylori*]

[ADM51979.1](#) Mass: 13847 Score: **104** Expect: 0.0051 Matches: 9

UreA, partial [*Helicobacter pylori*]

2. [WP_000779240.1](#) Mass: 26636 Score: **111** Expect: 0.001 Matches: 15

urease subunit beta [*Helicobacter pylori*]

[WP_000779231.1](#) Mass: 26631 Score: **111** Expect: 0.001 Matches: 15

urease subunit beta [*Helicobacter pylori*]

[WP_015427319.1](#) Mass: 26638 Score: **111** Expect: 0.001 Matches: 15

urease subunit alpha [*Helicobacter pylori*]

[WP_000779241.1](#) Mass: 26687 Score: **111** Expect: 0.001 Matches: 15

urease subunit beta [*Helicobacter pylori*]

[WP_021304234.1](#) Mass: 26661 Score: **111** Expect: 0.001 Matches: 15

urease subunit beta [*Helicobacter pylori*]

[WP_021176602.1](#) Mass: 26638 Score: **111** Expect: 0.001 Matches: 15

urease subunit alpha [*Helicobacter pylori*]

[WP_024112996.1](#) Mass: 26636 Score: **111** Expect: 0.001 Matches: 15
urease subunit alpha [*Helicobacter pylori*]

[WP_025453151.1](#) Mass: 26659 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_025454429.1](#) Mass: 26661 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_033595251.1](#) Mass: 26647 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_033764385.1](#) Mass: 26624 Score: **111** Expect: 0.001 Matches: 15
urease subunit alpha [*Helicobacter pylori*]

[WP_000779233.1](#) Mass: 26608 Score: **111** Expect: 0.001 Matches: 15
urease subunit alpha [*Helicobacter pylori*]

[WP_050841434.1](#) Mass: 26645 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_058905136.1](#) Mass: 26611 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[BAW57260.1](#) Mass: 26609 Score: **111** Expect: 0.001 Matches: 15
urease subunit alpha [*Helicobacter pylori*]

[WP_077654016.1](#) Mass: 26622 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_079333417.1](#) Mass: 26622 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_079360426.1](#) Mass: 26638 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_079361367.1](#) Mass: 26609 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_000779234.1](#) Mass: 26607 Score: **111** Expect: 0.001 Matches: 15
urease subunit alpha [*Helicobacter pylori*]

[WP_000779235.1](#) Mass: 26636 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_000779232.1](#) Mass: 26722 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_001952719.1](#) Mass: 26598 Score: **111** Expect: 0.001 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[WP_052917198.1](#) Mass: 26663 Score: **110** Expect: 0.0013 Matches: 15
urease subunit beta [*Helicobacter pylori*]

[EMG84461.1](#) Mass: 28167 Score: **107** Expect: 0.0026 Matches: 15
urease, gamma subunit [*Helicobacter pylori* GAM101Biv]

[EMH03662.1](#) Mass: 28220 Score: **107** Expect: 0.0026 Matches: 15
urease, beta subunit [*Helicobacter pylori* GAM244Ai]

[EMH24096.1](#) Mass: 28190 Score: **107** Expect: 0.0026 Matches: 15
urease, gamma subunit [*Helicobacter pylori* GAM264Ai]

[EMG89535.1](#) Mass: 28643 Score: **106** Expect: 0.0032 Matches: 15
urease, gamma subunit [*Helicobacter pylori* GAM201Ai]

[WP_033601539.1](#) Mass: 26624 Score: **110** Expect: 0.0013 Matches: 14
urease subunit alpha [*Helicobacter pylori*]

[WP_001937431.1](#) Mass: 26638 Score: **110** Expect: 0.0013 Matches: 14
urease subunit alpha [*Helicobacter pylori*]

[WP_041050436.1](#) Mass: 26634 Score: **110** Expect: 0.0013 Matches: 14
urease subunit beta [*Helicobacter pylori*]

3. [AAK69741.1](#) Mass: 26568 Score: **111** Expect: 0.001 Matches: 14
urease protein UreA [*Helicobacter pylori*]

[AAK69737.1](#) Mass: 26569 Score: **111** Expect: 0.001 Matches: 14
urease protein UreA [*Helicobacter pylori*]

[AAK69739.1](#) Mass: 26569 Score: **111** Expect: 0.001 Matches: 14

urease protein UreA [*Helicobacter pylori*]

[AAK69729.1](#) Mass: 26583 Score: **111** Expect: 0.001 Matches: 14

urease protein UreA [*Helicobacter pylori*]

4. [BAW63498.1](#) Mass: 26622 Score: **109** Expect: 0.0016 Matches: 14

urease subunit alpha [*Helicobacter pylori*]



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