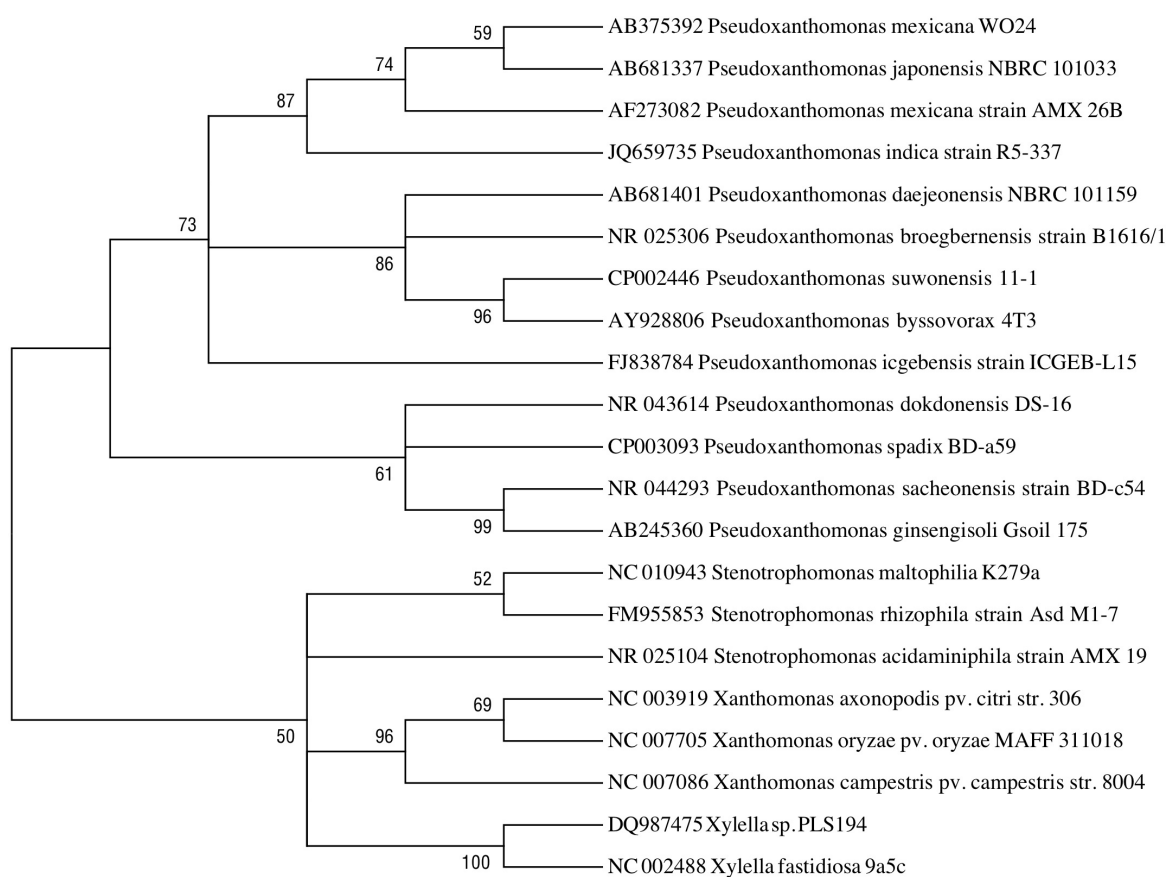


Supporting information of " Identification of the Catalytic Triad of Family S46 Exopeptidases, Closely Related to Clan PA Endopeptidases "

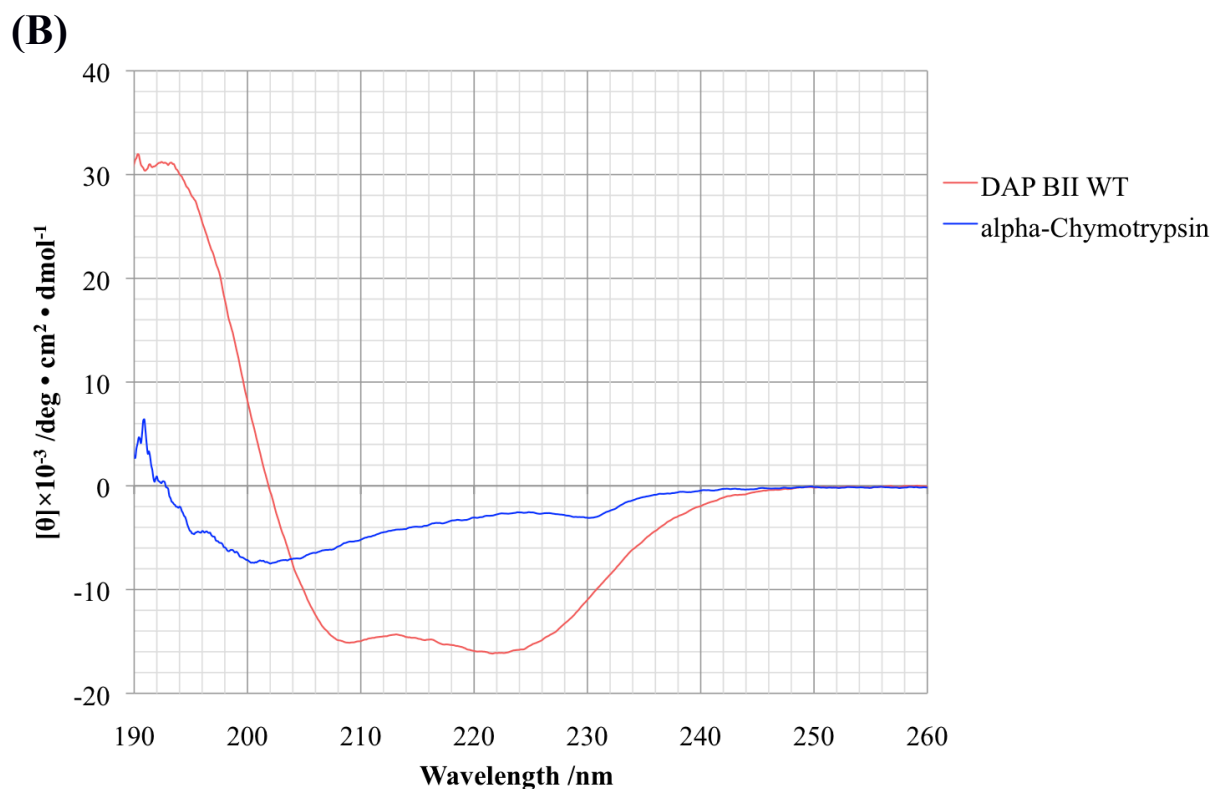
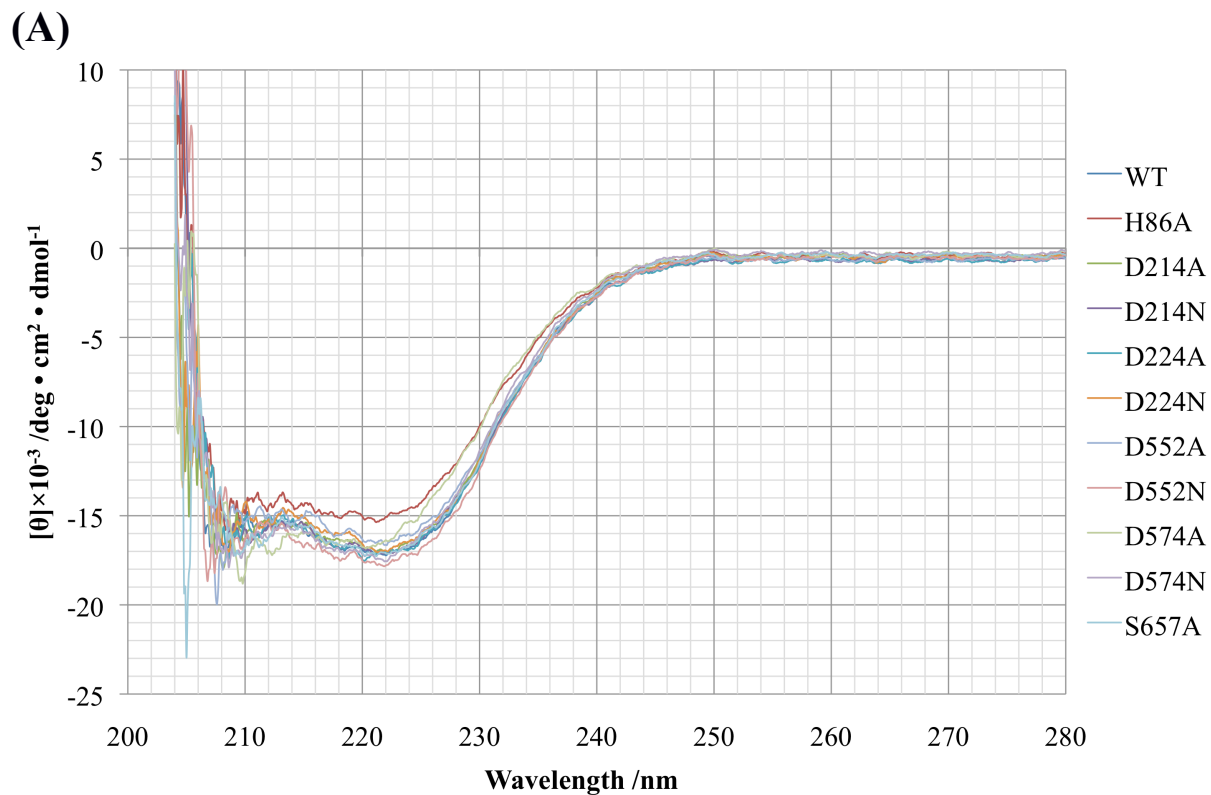
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Supplementary Figures



Supplemental Figure S1. Phylogenetic tree of 16S rRNA from related species of *Pseudoxanthomonas*. The phylogenetic tree of 16S rRNA was constructed by MUSCLE multiple sequence alignment and phylogenetic analysis by maximum likelihood. Bootstrap values above 50% are shown at branch points.



Supplemental Figure S2. Circular dichroism spectra. (A) Spectra of DAP BII and mutants were obtained with a circular dichroism spectrophotometer. The spectra predict an alpha-helical content of about 47% for these proteins. (B) Spectra of DAP BII wild-type and alpha-chymotrypsin (*Bos taurus*).

Supplementary Tables

Supplemental Table S1. DNA/DNA hybridization

	% homology with		
	WO24 ^a	<i>P. mexicana</i> ^a	<i>P. japonensis</i> ^a
Strain WO24 ^b	100	100	59
<i>Pseudoxanthomonas mexicana</i> JCM11524 ^b	71	100	59
<i>Pseudoxanthomonas japonensis</i> JCM11525 ^b	46	59	100

^a filter-bound

^b labeled

Supplemental Table S2. Morphological and physiological properties of *Pseudoxanthomonas mexicana* WO24

Strain	<i>Pseudoxanthomonas mexicana</i> WO24
Sampling place	A manufactory of tofu
Morphology	Rod
Length	2.0 - 3.0 μm
Width	0.7 μm
Motility	-
Spore formation	-
Gram-reaction	-
Oxidase	+
Catalase	+
Urease	+
Nitrate reductase	+
Indole formation	-
Starch hydrolysis	-
Acid from glucose	+
Oxidative-fermentative test	+
Growth temperature	Growth between 12 - 42 °C
GC content	67.9 mol%

Supplemental Table S3. Primers used in this study

Mutation	Primer sequences (5'→3')	
	Front	Reverse
For Mutan-Super Express Km (5' end is phosphorylated)		
pK8b2-SacI	GCCGtCCAGAgCtCCCAGG	
pK8b3-SacI	AGGCCGaGCtcGtCGCGCC	
1stMet-NdeI	AGGAAACACATAAAcatATGCGCCACCCCGC	
For PrimeSTAR Mutagenesis Basal Kit		
H86A	CAACCATgcCTGCGCCTATGGCGCCAT	GCGCAGgcATGGTTGGTGACCACCAG
S657A	CGGCAACgCCGGTTCGCCGGTGCTC	GAACCGGcGTTGCCGCCGGTGATGTCC
D195A	ATCAAGGcCGTGCGCCTGGCCTACG	GCGCACGgCCTTGATCTCCAGGTTCT
D214A	GACATCGcCAACTGGATGTGGCCGCG	CCAGTTGgCGATGTGCGCCGCCGAACT
D224A	CGGCGcCTTCGCGTCTACCGCGC	AACCGGAAGgCGCCGGTGTGGCGC
D522A	AGCAACGcTCCGGCCATCCAGTATGCG	GGCCGGAgCGTTGCTGGCTTCGAAC
D574A	TATCCCGcTGCCAACCTGTCGCTGC	GTTGGCAgCGGGATAGACGAACTCGC
D195N	ATCAAGaACGTGCGCCTGGCCTACG	GCGCACGTtCTTGATCTCCAGGTTCTTG
D214N	CGACATCaACAACCTGGATGTGGCCGC	CAGTTGTtGATGTGCGCCGCCGAACTTG
D224N	CACCGGCaACTTCGCGTCTACCGCGCC	GCGAAGTtGCCGGTGTGGCGCGGCCT
D522N	CAGCAACaATCCGGCCATCCAGTATGC	GCCGGATtGTTGCTGGCTTCGAACGC
D574N	CTATCCCaATGCCAACCTGTCGCTGC	TTGGCATtGGGATAGACGAACTCGCCC