

Supplementary data Table S1. Sequences of primers

Target gene	Primer	Sequence (5' to 3')
Upstream region of <i>ascP</i>	P ₁₋₁ (<i>Xba</i> I)	CGTCTAGAGCGTCGCTTATTCGCAG
	P ₁₋₂	ATCGTTTATGGGCTGTCACTGTGCCCTGTA
Downstream region of <i>ascP</i>	P ₁₋₃	AGTGACAGCCCATAAACGATCCATCTACG
	P ₁₋₄ (<i>Xma</i> I)	TACCCCCGGGAGGAACTTCTCTACCGATTC
<i>ascP</i> ORF and its External sequence	P ₂₋₁	TCTTCGCGGCCCGCAGGTGGCGGCAAG
	P ₂₋₂	CAAAAAGTCGCGGTAGGGGGCAAT
<i>ascP</i> ORF internal sequence	P ₃₋₁	CCGACAAGCACAGGACGAA
	P ₃₋₂	GGTTGACCACTGGCTTCG
Promoter sequence	P ₄₋₁ (<i>Bam</i> H I)	CGGGATCCGGAAACTCCCGTGACGAATG
	P ₄₋₂	ATTCGGTTCATAACAATCTGCGC
<i>Ascp</i> ORF sequence	P ₄₋₃	GCAGATTGTTATGAACCGAATCCTC
	P ₄₋₄ (<i>Hind</i> III)	CCAAGCTTTCATGCGTCGGCATCCCA
16S rRNA sequence (for RT-qPCR)	P ₅₋₁	GCCACGTCTCAAGGACACAG
	P ₅₋₂	TGGGGAGCAAACAGGATTAGA
<i>ascP</i> ORF sequence (for RT-qPCR)	P ₆₋₁	CCGACAAGCACAGGACGAATGG
	P ₆₋₂	ATGCTTTGGCTGGCTGTGAGAAG
pRE112 vector sequence	P ₇₋₁	GCGATGAGTGGCAGGGC
	P ₇₋₂	TTACCGACTGCGGCCTGAGT
pBBR1-MCS vector sequence	P ₈₋₁	TAAGTTGGGTAACGCCAGG
	P ₈₋₂	GAGTTAGCTCACTCATTAGGC

Supplementary data Table S2. Primers for flagellar genes

Target genes	Primers	Sequence (5' to 3')
<i>fliD</i>	FliD-F	AAATGTGGTGGAGGGGTTG
	FliD-R	GATTTGGGGTCACTGGAGGT
<i>fliC</i>	FliC-F	AAGAGGTGCCGTTAGCAGACT
	FliC-R	GCAACTCACAAGACGCCATC
<i>flgL</i>	FlgL-F	TTGCGTGAGTTGACCCAG
	FlgL-R	TGTAGCGGTAACCTCCAAAGTC
<i>flgK</i>	FlgK-F	AACCTGACCGCCCAGAATA
	FlgK-R	GGCTACCAGATAGTCATCCGTTA
<i>flgE</i>	FlgE-F	CAGATGACATTTACTCCTTCGGG
	FlgE-R	GGGTAACAGTCCCAAGACGAAT
<i>figF</i>	FlgF-F	TCAGCCCATCGTATTGCCT
	FlgF-R	CAGACCATCTTGCCCCCTTC
<i>figG</i>	FigG-F	AACGGTCAGTTCACCCTCAA
	FigG-R	TGGCATTAAACGAAGTCGGA
<i>figH</i>	FlgH-F	AATACCCAGAGTGGCAAGGAC
	FlgH-R	ACCAATGGAAGCCGAAAGA
<i>figI</i>	FlgI-F	TCGGTTGAAGGGGTGCGTA
	FlgI-R	TCTGCTCGGTGAAGGCGTT
<i>motA</i>	MotA-F	TTTATCGCCACCATCTACGG
	MotA-R	GTCAGGGTCATCTCCTTGTAGTG
<i>motB</i>	MotB-F	GCTTATCCAGGGCTTTATCG
	MotB-R	GCATCTTTCTCCAGCACAGTCT
<i>fliF</i>	FliF-F	GCGTCAGTCAGCGAATGGA
	FliF-R	CGGGCAAACACGTTGTCTT
<i>fliE</i>	FliE-F	ATGACCTGCGTACCCGTTT
	FliE-R	TCAAAGGCGATGGACGATT
<i>fliG</i>	FliG-F	CAGAACGAACACCCGCAGA
	FliG-R	GGTTGGCGATACGCATCAC
<i>flgB</i>	FlgB-F	TTTGACAAGGCATTCCGGTG
	FlgB-R	AGTGCTTTTCGCTGGTCGT
<i>flgC</i>	FlgC-F	GTTGAGGTGAAGGGGATTGTT
	FlgC-R	TGGCTTGAAGATAAAACCGTC
<i>fliM</i>	FliM-F	CTCAAGTTTGGCGAGTATGTTC
	FliM-R	CAGGCATCCTTGTAATCCTCA
<i>fliN</i>	FliN-F	GAAGAGTTGAAAGATGATGCCC
	FliN-R	CGGAATATCGAGAATGGTGTC
<i>fliH</i>	FliH-F	GAAGTGAGTGCCCGTTTTACC
	FliH-R	ACGACGCTTCTTCGCCTCT
<i>fliB</i>	FliB-F	TTTATCAGTTCCGCCACCG
	FliB-R	GCCCAGATTACAGACTTTCATCC
<i>flaA</i>	FlaA-F	GCGACCAAATCACTGGATACTT
	FlaA-R	CATCATTAGCGTTACGGTTACCT

flaB

FlaB-F

CAGGGTAACCGTAACGCTAAC

FlaB-R

ACCGTAAGTGCCGTCCAGTA

Supplementary data Table S3. Primers for effector protein-related genes

Target gene	Primers	Sequence (5' to 3')	Login ID
<i>aopB</i>	<i>aopB</i> -F	GACGCACAGGGAAAGTA	CP012504.1
	<i>aopB</i> -R	CAAGATCATCCAGCACC	
<i>aopD</i>	<i>aopD</i> -F	ACAACAGTCGTTCGCTAC	
	<i>aopD</i> -R	TTCAATGCCTGCTCACT	
<i>aopE</i>	<i>aopE</i> -F	GATGACCAGTTTGGAAG	
	<i>aopE</i> -R	GTGCTCCTTTATCTTGC	
<i>aopH</i>	<i>aopH</i> -F	TTTTGGCGAGCGTCAGT	
	<i>aopH</i> -R	AGCGGGATCAGGGTCAT	
<i>aopN</i>	<i>aopN</i> -F	AGGACTACCGTGCCCTTTC	
	<i>aopN</i> -R	AGCAGCCGCAGCTTGTG	
<i>aopO</i>	<i>aopO</i> -F	AAGGACGAAGTGAAGCG	
	<i>aopO</i> -R	ATCGGTGAATTTGAGGG	
<i>aopP</i>	<i>aopP</i> -F	TGTCAGCGATAACCCTCT	
	<i>aopP</i> -R	TGGATACCTTTTGTTTCG	
<i>aopQ</i>	<i>aopQ</i> -F	AAGACCTGCGGCTGGAT	
	<i>aopQ</i> -R	AGGGCTTGCTGTGAGGC	
<i>aopR</i>	<i>aopR</i> -F	GCTAAACCTTATCGTG GGG	
	<i>aopR</i> -R	TAATCCTGGGTGGCAAA	
<i>aopS</i>	<i>aopS</i> -F	GCTGGTGCTGATCCTCT	
	<i>aopS</i> -R	TACCTTGAACAACACCATAT	
<i>aopT</i>	<i>aopT</i> -F	GATCAGATCGACGGCATG	
	<i>aopT</i> -R	CCGCTGGCAAAGAAGAG	

Supplementary data Table S4. Primers sequences of RT-qPCR

Target gene	Primer	Sequence (5' to 3')
β -actin	β -actin-F	CAAGATGATGGTGTGCCAAGTG
	β -actin-R	TCTGTCTCCGGCACGAAGTA
IL-1 β	IL-1 β -F	AACTGATGACCCGAATGGAAAC
	IL-1 β -R	CACCTTCTCCCAGTCGTCAAA
IL-8	IL-8-F	TTCCTTGGATTCCTGACC
	IL-8-R	GGTGTCTTTACAGTGTGAG
TNF- α	TNF- α -F	TTATGTCGGTGCGGCCTTC
	TNF- α -R	AGGTCTTTCCGTTGTCGCTTT

Supplementary data Table S5. Adhesive and invasive abilities of WT strain TH0426 and mutant strain $\Delta ascP$ against EPC

Strain	Number of bacteria ^a (CFU/well)	Adhesive and invasive abilities (%)
TH0426	$(2.83 \pm 0.17) \times 10^5$	28.3 ± 0.17
$\Delta ascP$	$(2.32 \pm 0.30) \times 10^5$	$23.2 \pm 0.30^*$
<i>C-ascP</i>	$(3.17 \pm 0.25) \times 10^5$	31.7 ± 0.25

* shows the significant diversity between the experiment group and the wild strain TH026 group after comparison ($p < 0.05$).

Supplementary data Table S6. Cytotoxicity of WT strain TH0426 and variant strain $\Delta ascP$ to EPC

Strain	Cytotoxicity (%)	
	1 h	2 h
TH0426	21.67 ± 0.58	60.22 ± 0.41
$\Delta ascP$	$9.89 \pm 0.44^{**}$	$34.56 \pm 0.60^{**}$
<i>C-ascP</i>	17.33 ± 0.28	48.15 ± 0.46

** shows the significant diversity between the experiment group and the wild strain TH026 group after comparison ($p < 0.01$).