

1 **Table S2.** Strains and plasmids used in this study.

Strains	Description	Reference
DH5 $\alpha$	F' endA1 hsdR17 (rk- mk+) supE44 thi-1 recA1 gyrA relA1 f80dlacZDM15 (lacZYA-argF) U169	Lab collection
<i>X. oryzae</i> pv. <i>oryzae</i> (BXO43)	WT <i>rif-2</i> ; Rif <sup>r</sup>	Lab collection
$\Delta$ <i>fliC</i>	In-frame deletion of <i>fliC</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>mcp2</i>	In-frame deletion of <i>mcp2</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>mcp2</i> (Mcp2 <sup>+</sup> )	$\Delta$ <i>mcp2</i> mutant reconstituted with the wild type <i>mcp2</i> ; Rif <sup>r</sup>	
$\Delta$ <i>cheR1</i>	In-frame deletion of <i>cheR1</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheR2</i>	In-frame deletion of <i>cheR2</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheR2</i> (CheR2 <sup>+</sup> )	$\Delta$ <i>cheR2</i> mutant reconstituted with the wild type <i>cheR2</i> ; Rif <sup>r</sup>	This study
$\Delta$ <i>cheR3</i>	In-frame deletion of <i>cheR3</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheB1</i>	In-frame deletion of <i>cheB1</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheB2</i>	In-frame deletion of <i>cheB2</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheB2</i> (CheB2 <sup>+</sup> )	$\Delta$ <i>cheB2</i> mutant reconstituted with the wild type <i>cheB2</i> ; Rif <sup>r</sup>	This study
$\Delta$ <i>cheA1</i>	In-frame deletion of <i>cheA1</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheA2</i>	In-frame deletion of <i>cheA2</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheA2</i> /pCheA2	$\Delta$ <i>cheA2</i> mutant harbouring wild type <i>cheA2</i> in plasmid; pCheA2; Spec <sup>r</sup>	This study
$\Delta$ <i>cheA3</i>	In-frame deletion of <i>cheA3</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheW1</i>	In-frame deletion of <i>cheW1</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheW2</i>	In-frame deletion of <i>cheW2</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheW2</i> (CheW2 <sup>+</sup> )	$\Delta$ <i>cheW2</i> mutant reconstituted with the wild type <i>cheW2</i> ; Rif <sup>r</sup>	This study
$\Delta$ <i>cheW3</i>	In-frame deletion of <i>cheW3</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>vieA</i>	In-frame deletion of <i>vieA</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheY1</i>	In-frame deletion of <i>cheY1</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheY1</i> (CheY1 <sup>+</sup> )	$\Delta$ <i>cheY1</i> mutant reconstituted with the wild type <i>cheY1</i> ; Rif <sup>r</sup>	This study
$\Delta$ <i>cheY2</i>	In-frame deletion of <i>cheY2</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheV</i>	In-frame deletion of <i>cheV</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheZ</i>	In-frame deletion of <i>cheZ</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>cheD</i>	In-frame deletion of <i>cheD</i> ; derivative of BXO43; Rif <sup>r</sup>	This study
$\Delta$ <i>pdeA</i>	In-frame deletion of <i>pdeA</i> ; derivative of BXO43; Rif <sup>r</sup>	This study

Xoo <i>PcheA2::gusA</i>	Chromosomal <i>gusA</i> fusion with the <i>cheA2</i> promoter in the Xoo background; Kan <sup>r</sup> ,Amp <sup>r</sup>	This study
Xoo <i>PcheR2::gusA</i>	Chromosomal <i>gusA</i> fusion with the <i>cheR2</i> promoter in the Xoo background; Kan <sup>r</sup> ,Amp <sup>r</sup>	This study
Xoo <i>PfliC::gusA</i>	Chromosomal <i>gusA</i> fusion with the <i>fliC</i> promoter in the Xoo background; Kan <sup>r</sup> ,Amp <sup>r</sup>	This study
Xoo <i>PmotA::gusA</i>	Chromosomal <i>gusA</i> fusion with the <i>motA</i> promoter in the Xoo background; Kan <sup>r</sup> ,Amp <sup>r</sup>	This study
<b>Plasmids</b>		
pK18mobsacB	Km <sup>r</sup> pUC18 derivative; <i>lacZa</i> mobs site sacB	Schäfer <i>et al.</i> , 1994
pVO155	pUC119 derivative carrying promoter less <i>gusA</i> ; Km <sup>r</sup> Amp <sup>r</sup>	Oke and Long, 1999
pK18mob	Km <sup>r</sup> pUC18 derivative; <i>lacZa</i> mobs site	Pridmore <i>et al.</i> , 1987
pHM1	Broad-host-range cosmid vector, pSa <i>ori</i> , Spec <sup>r</sup>	Innes <i>et al.</i> , 1988
pRKV1	pK18mobsacB with a 0.3kb PCR fragment of <i>rpfF</i> 5' end and a 0.202kb PCR fragment of <i>rpfF</i> 3' end from the Xoo genome; Km <sup>r</sup>	This study
pRKV2	pK18mobsacB with a 0.254kb PCR fragment <i>cheR2</i> 5' end and a 0.326kb PCR fragment downstream of <i>cheR2</i> 3' end of the Xoo genome; Km <sup>r</sup>	This study
pRKV3	pK18mobsacB with a 0.275kb upstream PCR fragment including 6bp of <i>fliC</i> 5' end and a 0.401kb downstream PCR fragment including 27bp of <i>fliC</i> 3' end of the Xoo genome; Km <sup>r</sup>	This study
pRKV4	pK18mobsacB with a 0.373kb upstream PCR fragment including 12bp of <i>cheD</i> 5' end and a 0.409kb downstream PCR fragment including 9bp of <i>cheD</i> 3' end of the Xoo	This study

	genome; Km <sup>r</sup>	
pRKV5	pK18mobsacB with a 0.347kb upstream PCR fragment including 4bp of <i>cheB2</i> 5' end and a 0.327kb PCR fragment of <i>cheB2</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV6	pK18mobsacB with a 0.358kb upstream PCR fragment including 100bp of <i>cheW2</i> 5' end and a 0.223kb PCR fragment of <i>cheW2</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV7	pK18mobsacB with a 0.300kb PCR fragment of <i>cheA2</i> 5' end and a 0.259kb PCR fragment <i>cheA2</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV9	pK18mobsacB with a 0.422kb upstream PCR fragment including 12bp of <i>mcp2</i> 5' end and a 0.228kb downstream PCR fragment including 27bp of <i>mcp2</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV10	pK18mobsacB with a 0.264kb upstream PCR fragment including 99bp of <i>cheA3</i> 5' end and a 0.312kb downstream PCR fragment including 12bp of <i>cheA3</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV11	pK18mobsacB with a 0.513kb upstream PCR fragment including 9bp of <i>cheW3</i> 5' end and a 0.235kb downstream PCR fragment including 18bp of <i>cheW3</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV12	pK18mobsacB with a 0.332kb upstream PCR fragment including 15bp of <i>cheR3</i> 5' end and a 0.303kb downstream PCR fragment including 240 bases of <i>cheR3</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV13	pK18mobsacB with a 0.364kb upstream PCR fragment including 9bp of <i>cheV</i> 5' end and a 0.326kb downstream PCR fragment including 12 bases of <i>cheV</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV14	pK18mobsacB with a 0.269kb upstream PCR fragment including 6bp of <i>cheZ</i> 5' end and a 0.312kb downstream PCR fragment including 12 bases of <i>cheZ</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV15	pK18mobsacB with a 0.564kb upstream PCR fragment including 321bp of <i>cheA1</i> 5' end and a 0.323kb downstream	This study

	PCR fragment including 177 bases of <i>cheA1</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	
pRKV16	pK18mobsacB with a 0.384kb upstream PCR fragment including 99bp of <i>cheR1</i> 5' end and a 0.311kb downstream PCR fragment including 69 bases of <i>cheR1</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV17	pK18mobsacB with a 0.362kb upstream PCR fragment including 99bp of <i>cheB1</i> 5' end and a 0.285kb downstream PCR fragment including 78 bases of <i>cheB1</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV18	pK18mobsacB with a 0.350kb PCR fragment of <i>vieA</i> 5' end and a 0.302kb PCR fragment of <i>vieA</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV19	pK18mobsacB with a 0.376kb upstream PCR fragment including 99bp of <i>cheW1</i> 5' end and a 0.329kb downstream PCR fragment including 69 bases of <i>cheW1</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV20	pK18mobsacB with a 1.217kb PCR fragment including <i>cheR2</i> ORF and 346bp downstream of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV21	pK18mobsacB with a 1.420kb PCR fragment including 343bp upstream and <i>cheB2</i> ORF of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV22	pK18mobsacB with a 1.306kb PCR fragment including 283bp upstream and <i>cheW2</i> ORF of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV23	pHM1:: <i>cheA2</i> ORF, Spec <sup>r</sup>	This study
pRKV24	pK18mobsacB with a 0.354kb upstream PCR fragment including 150bp of <i>cheY1</i> 5' end and a 0.278kb downstream PCR fragment including 90 bases of <i>cheY1</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV25	pK18mobsacB with a 0.225kb upstream PCR fragment including 72bp of <i>cheY2</i> 5' end and a 0.162kb downstream PCR fragment including 39 bases of <i>cheY2</i> 3' end of the <i>Xoo</i> genome; Km <sup>r</sup>	This study

pRKV26	pK18mobsacB with a 0.785kb PCR fragment including 204bp upstream, <i>cheY1</i> ORF and 188bp downstream fragment of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV27	pK18mobsacB with a 2.712kb PCR fragment including 142bp upstream, <i>mcp1</i> ORF and 401bp downstream fragment of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV28	pK18mobsacB with a 2.873kb PCR fragment including 12bp upstream, <i>mcp2</i> ORF and 27bp downstream fragment of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV29	pK18mobsacB with a 2.712kb PCR fragment including 142bp upstream, <i>mcp1</i> ORF and 401bp downstream fragment of the <i>Xoo</i> genome; Km <sup>r</sup>	This study
pRKV30	pVO155 with 443bp predicted promoter PCR fragment upstream of <i>cheR2</i> in front of <i>gusA</i> ORF; Km <sup>r</sup> Amp <sup>r</sup>	This study
pRKV31	pVO155 with 584bp predicted promoter PCR fragment upstream of <i>flhF</i> ( <i>cheA2</i> containing operon) in front of <i>gusA</i> ORF; Km <sup>r</sup> Amp <sup>r</sup>	This study
pRKV32	pVO155 with 476bp predicted promoter PCR fragment upstream of <i>motA</i> in front of <i>gusA</i> ORF; Km <sup>r</sup> Amp <sup>r</sup>	This study
pRKV33	pVO155 with 650bp predicted promoter PCR fragment upstream of <i>fliC</i> in front of <i>gusA</i> ORF; Km <sup>r</sup> Amp <sup>r</sup>	This study
pRKV34	pK18mobsacB with the wild type <i>mcp2</i> along with 0.422kb upstream and a 0.228kb downstream sequence flanking the <i>mcp2</i> ORF; Rif <sup>r</sup>	This study

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2 The rif<sup>r</sup> Spec<sup>r</sup>, Amp<sup>r</sup> and Kan<sup>r</sup> indicate resistance to rifampicin; spectinomycin, ampicilin and  
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4 **References:**

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