

SDC 1 Amino acid substitutions in the transpeptidase domain of penicillin-binding protein 3 in ampicillin-resistant (MIC $\geq$ 4 mg/L)

Haemophilus influenzae

Group*	n	β	Amino acid substitution																				AMP			
			-	Val	Asp	Ser	Met	Ser	Leu	Val	Val	Gly	Ala	Val	Arg	Ile	Asn	Ala	Thr	Val	Gly	Try	Val	Asn	MIC	
			1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(mg/L)
			*	329	350	357	377	385	389	436	461	490	502	511	517	519	526	530	532	547	555	557	562	569		
		*																								
Ila	1	-		Asn												Lys		Ser	Ile				Ser	4		
IIb	1	-		Asn	Asn					Ile		Val	Ala		Leu	Lys			Ile				Ser	8		
III	39	-		Asn	Asn	Ile	Thr	Phe								Lys			Ile			Leu	Ser	4-16		
	10	+		Asn	Asn	Ile	Thr	Phe								Lys			Ile			Leu	Ser	≥ 16		
	1	-	Ile	Asn	Asn	Ile	Thr	Phe								Lys			Ile			Leu	Ser	8		
	1	-		Asn	Asn	Ile	Thr	Phe								Lys			Ile			Leu		8		
	1	-		Asn	Asn	Ile	Thr	Phe								Lys						Leu		8		
	1	-		Asn	Asn	Ile	Thr	Phe	Phe							Lys			Ile			Leu	Ser	4		
	1	-		Asn	Asn	Ile	Thr	Phe			Glu					Lys	Ser							8		
	1	-		Asn	Asn	Ile	Thr	Phe				Val				Lys			Ile				Ser	4		
	1	-		Asn	Asn	Ile	Thr	Phe				Thr				Lys			Ile				Ser	8		
1	-		Asn	Asn	Ile	Thr	Phe					Ala			Lys			Ile				Ser	8			

III-like	2	-	Asn	Asn	Ile	Thr	Phe		His		Ser	Ile		His		Ser	4
others	1	-	Asn	Asn	Ile					Lys		Ile			Leu	Ser	4
	1	-			Ile	Thr	Phe		His			Ile	Glu	His			4
	1	+										Ile					>16
NC	2	+															≥ 8

n, numbers of isolates; AMP, ampicillin; NC, no change.

*Group based on amino acid substitutions in the transpeptidase domain of penicillin-binding protein 3 according to the criteria of Ubukata et al., Dabernat et al., and García-Cobos et al.^{4,6,18}.

**β-lactamase production: +, positive; -, negative