Table S3. Composition of peptidoglycan isolated from autolysin-deficient cells. The indicated strains were analyzed after growth for 24 h in M2G^{-P}. The values are the mean ± variance of two independent experiments.

Muropeptide	Relative percentage (%) in strain				
	WT	Δ*dipM*	Δ*crbA*	Δ*ldpA*	Δ*sdpAB*
Tri	0.9±0.0	1.8±0.1	0.6±0.0	1.1±0.0	4.3±2.1
Tetra	17.5±0.0	21.3±0.5	9.8±0.5	18.2±0.1	27.5±1.8
Penta	7.9±0.1	8.1±0.3	11.0±0.0	7.4±0.0	6.6±0.0
TriTri (LD)	0.2±0.0	0.2±0.0	0.2±0.0	0.2±0.0	0.5±0.0
TetraTri (LD)	1.1±0.0	0.9±0.0	0.2±0.0	0.8±0.0	1.9±0.0
TriAnh +small amount of TetraTri (LD)	0.9±0.0	1.0±0.0	0.5±0.0	0.9±0.0	1.6±0.3
TetraTetra (LD)	0.2±0.0	0.5±0.0	1.1±0.0	0.9±0.5	0.6±0.0
TetraTetra	15.1±0.0	15.9±0.0	10.8±0.3	15.8±0.0	16.7±0.8
TetraPenta	7.3±0.2	7.3±0.1	12.1±0.1	7.1±0.1	5.3±0.0
TetraTetraTri or TetraTetraTri (LD)	0.4±0.0	0.3±0.0	0.3±0.0	0.3±0.0	0.4±0.0
TetraAnh	0.3±0.0	0.5±0.0	0.2±0.0	0.5±0.0	0.8±0.0
TetraTetraTetra	4.4±0.1	4.5±0.0	3.5±0.2	4.6±0.0	5.5±0.2
TetraTetraPenta	1.8±0.0	1.8±0.0	3.6±0.0	1.8±0.0	1.5±0.0
TetraTetraTetraTetra	0.8±0.0	0.8±0.0	0.6±0.0	0.8±0.0	1.1±0.0
TetraTetraTetraPenta	0.4±0.0	0.4±0.0	0.6±0.0	0.4±0.0	0.4±0.0
PentaAnh	0.8±0.0	0.8±0.0	0.8±0.0	0.8±0.0	1.7±0.0
TetraTetraAnh	4.3±0.0	3.9±0.0	3.0±0.0	4.1±0.0	2.6±0.0
TetraPentaAnh	0.9±0.0	0.8±0.0	0.4±0.1	0.6±0.0	0.9±0.1
TetraTetraTriAnh or TetraTetraTri(LD)Anh	n.d.	n.d.	n.d.	n.d.	n.d.
TetraTetraTetraAnh	7.6±0.1	7.1±0.0	5.6±0.0	7.6±0.0	6.4±0.0
TetraTetraPentaAnh	6.4±0.5	5.9±0.1	7.0±0.0	7.0±0.0	4.0±0.0
TetraTetraTetraPentaAnh I	1.2±0.0	1.2±0.0	1.3±0.0	1.3±0.0	1.0±0.0
TetraTetraTetraPentaAnh II	1.3±0.0	1.3±0.0	2.3±0.0	1.4±0.0	0.7±0.0
TetraTetraTetradiAnh	1.1±0.0	1.0±0.0	1.1±0.0	1.2±0.0	0.5±0.0
TetraTetraTetraPentadiAnh	0.9±0.0	0.9±0.0	1.3±0.0	1.0±0.0	0.3±0.0
TetraTetradiAnh	1.5±0.0	1.4±0.0	1.8±0.0	1.5±0.0	0.4±0.0
TetraTetraPentadiAnh	0.7±0.0	0.6±0.0	1.2±0.0	0.7±0.0	0.3±0.0
all known	85.7±1.7	90.1±1.0	80.6±0.0	87.9±0.1	93.4±0.5
Monomers (total)	32.9±0.5	37.3±2.1	28.4±0.2	32.9±0.1	45.4±1.5
Dimers (total)	35.7±1.7	34.1±0.0	36.5±1.4	35.2±1.1	31.0±0.2
Trimers (total)	26.0±1.5	23.6±1.1	27.6±1.3	26.5±0.1	20.0±0.4
Tetramers (total)	5.4±0.6	5.1±0.3	7.4±0.2	5.5±0.3	3.7±0.0
Tripeptides (total)	3.1±0.0	4.0±0.2	1.8±0.3	3.0±0.0	8.1±5.4
Tetrapeptides (total)	77.1±0.2	77.0±0.6	68.9±0.6	77.9±0.0	76.3±6.9
Pentapeptides (total)	19.5±0.1	18.5±0.2	29.0±0.0	18.5±0.1	14.8±0.0
3-3 crosslinks	1.0±0.0	1.0±0.0	1.0±0.0	1.2±0.2	1.8±0.0
Chain ends (Anh)	15.0±0.2	13.9±0.1	15.2±0.4	15.1±0.0	11.6±1.0
Degree of cross-linkage	39.2±0.6	36.6±1.1	42.2±0.2	39.3±0.0	31.6±0.5
% Peptides in crosslinks	67.1±0.5	62.7±2.1	71.6±0.2	67.1±0.1	54.6±1.5
	Mean of disaccharides units ± SD (n=2)				
Average glycan chain length	6.7±0.0	7.2±0.0	6.6±0.1	6.6±0.0	8.6±0.6