

Table S1. Composition of cell body and stalk peptidoglycan from from crossband- and LD-transpeptidase-deficient cells. The indicated strains were analyzed after growth for 24 h in M2G^{-P}. Values are the mean ± variance of two independent experiments.

Muropeptide	Relative percentage (%) in strain					
	WT (CB15N)		<i>ΔstpAB</i>		<i>ΔldtDX</i>	
	Cell body	Stalk	Cell body	Stalk	Cell body	Stalk
Tri	0.8±0.0	1.4±0.0	1.5±0.0	3.3±0.0	n.d.	n.d.
Tetra	16.5±0.4	11.1±6.6	19.3±0.3	12.1±3.5	19.3±0.1	13.6±0.0
Penta	7.9±0.0	6.5±0.1	8.9±0.0	6.6±0.0	8.6±0.0	7.8±0.0
TriTri (LD)	0.3±0.0	0.9±0.0	0.2±0.1	1.2±0.2	n.d.	n.d.
TetraTri (LD)	1.0±0.1	2.9±0.1	0.6±0.0	2.2±0.2	n.d.	n.d.
TriAnh/TetraTri (LD)	1.1±0.0	1.3±0.0	1.1±0.0	1.9±0.0	n.d.	n.d.
TetraTetra(LD)	1.3±1.1	1.5±0.0	0.4±0.0	1.4±0.0	0.2±0.0	0.2±0.0
TetraTetra	12.7±0.0	10.8±1.5	14.6±0.1	10.4±0.1	14.3±0.0	13.5±0.0
TetraPenta	6.8±0.1	7.0±0.0	7.9±0.0	6.9±0.0	7.4±0.0	8.5±0.0
TetraTetraTri or TetraTetraTri (LD)	0.3±0.0	1.2±0.0	0.2±0.0	1.0±0.0	n.d.	n.d.
TetraAnh	1.4±0.0	1.7±0.0	1.1±0.0	0.8±0.0	1.2±0.0	1.2±0.0
TetraTetraTetra	3.8±0.0	5.1±0.0	4.1±0.0	4.8±0.1	4.2±0.0	5.9±0.0
TetraTetraPenta	1.8±0.0	3.0±0.0	1.9±0.0	2.6±0.0	2.1±0.0	3.2±0.0
TetraTetraTetraTetra	n.d.	0.3±0.2	n.d.	0.5±0.0	n.d.	n.d.
TetraTetraTetraPenta	n.d.	0.6±0.2	n.d.	0.3±0.0	n.d.	n.d.
PentaAnh	0.8±0.0	1.6±0.2	0.7±0.0	1.4±0.0	0.8±0.0	1.7±0.0
TetraTetraAnh	1.0±0.0	2.0±0.0	0.7±0.2	1.1±0.0	0.8±0.0	0.6±0.0
TetraPentaAnh	3.6±0.0	3.1±0.0	2.3±0.0	1.9±0.0	2.5±0.0	2.6±0.0
TetraTetraTriAnh or TetraTetraTri(LD)Anh	0.6±0.0	1.3±0.0	0.7±0.0	1.8±0.0	1.3±0.0	1.9±0.0
TetraTetraTetraAnh	6.4±0.1	6.2±0.0	6.8±0.0	6.2±0.0	6.8±0.0	6.8±0.0
TetraTetraPentaAnh	6.6±0.1	6.2±0.0	6.4±0.0	5.7±0.1	6.7±0.0	6.6±0.0
TetraTetraTetraPentaAnh I	1.4±0.0	1.0±0.0	1.3±0.0	1.1±0.2	1.4±0.0	2.0±0.0
TetraTetraTetraPentaAnh II	1.4±0.0	1.3±0.0	1.5±0.0	1.2±0.0	1.7±0.0	1.8±0.0
TetraTetraTetradiAnh	1.4±0.0	1.5±0.0	1.8±0.0	1.4±0.5	1.4±0.0	1.6±0.7
TetraTetraTetraPentadiAnh	1.8±0.3	1.3±0.0	1.9±0.2	1.1±0.0	2.3±0.0	1.6±0.3
TetraTetradiAnh	1.8±0.0	1.3±0.0	1.2±0.4	1.0±0.0	2.7±0.0	1.6±0.0
TetraTetraPentadiAnh	0.7±0.0	0.4±0.0	0.7±0.0	0.4±0.0	0.9±0.0	0.8±0.0
all known	83.3±0.6	82.5±4.7	87.7±0.5	80.3±0.0	86.5±0.0	83.4±0.2
Monomers (total)	33.0±0.1	27.0±4.5	36.0±1.1	30.1±4.3	34.6±0.3	29.0±0.4
Dimers (total)	35.6±3.4	37.2±0.0	32.9±0.7	34.8±1.6	32.2±0.0	32.3±0.0
Trimers (total)	26.0±0.5	30.2±3.7	25.9±0.1	29.9±4.1	27.0±0.1	32.2±1.7
Tetramers (total)	5.4±0.6	5.5±0.2	5.3±0.2	5.2±1.4	6.2±0.0	6.5±0.4
Tripeptides (total)	3.0±0.0	6.4±0.6	3.1±0.0	9.3±1.3	0.5±0.0	0.8±0.0
Tetrapeptides (total)	74.7±0.0	71.9±2.5	74.5±0.3	69.2±1.3	77.6±0.0	75.4±0.2
Pentapeptides (total)	21.7±0.0	21.1±0.5	21.6±0.0	20.2±0.0	21.5±0.0	23.2±0.2
3-3 crosslinks	2.3±0.6	5.2±0.7	1.0±0.0	4.2±0.6	0.6±0.0	0.9±0.0
Chain ends (Anh)	16.5±0.2	17.2±0.9	14.2±1.2	14.5±0.8	17.0±0.0	17.4±0.3
Degree of cross-linkage	39.2±0.0	42.9±2.2	37.6±0.4	41.2±1.2	38.8±0.1	42.5±0.2
% peptides in cross-links	67.0±0.1	73.0±4.5	64.0±1.1	69.9±4.3	65.4±0.3	71.0±0.4
Mean of disaccharides units ± SD (n=2)						
Average glycan chain length	6.0±0.1	5.8±0.1	7.1±0.3	6.9±0.2	5.9±0.0	5.8±0.0