

Key to Murein (Peptidoglycan) Types

To save space, a special system has been developed to characterize the different murein types in the catalogue entries. This key enables the user to link our abbreviations to the system proposed for the characterization and representation of peptidoglycan types proposed by Schleifer and Kandler 1972 (Bacteriol. Rev. 36: 407-477) An extension by an apostrophe e.g. A3 alpha' denotes that the L-Ala residue found normally in position 1 of the peptide subunit is replaced by Gly.

Uncommon abbreviations:

Dab = diaminobutyric acid,

Dpm = diaminopimelic acid,

Hsr = homoserine,

Hyg = threo-3-hydroxy-glutamic acid,

Lan = lanthionine,

Orn = ornithine

Group A: Cross-linkage between position 3 and 4 of two peptide subunits

A11	A1alpha L-Lys-direct
A11.gly	A1alpha L-Lys-direct; alpha-carboxyl group of D-Glu substituted by glycine
A11.pep	A2 L-Lys peptide subunit
A11.1	A3alpha L-Lys-Gly
A11.2	A3alpha L-Lys-Gly ₅₋₆
A11.3	A3alpha L-Lys-Gly ₂₋₄ -L-Ser ₁₋₂ '-Gly
A11.4	A3alpha L-Lys-L-Ala
A11.5	A3alpha L-Lys-L-Ala ₂
A11.6	A3alpha L-Lys-L-Ala ₃
A11.7	A3alpha L-Lys-L-Ala ₄
A11.8	A3alpha L-Lys-L-Ala-Gly ₄₋₅
A11.9	A3alpha L-Lys-L-Ala-L-Ala(L-Ser)
A11.10	A3alpha L-Lys-L-Ala ₂ -L-Ala(L-Ser)
A11.11	A3alpha L-Lys(L-Orn)-L-Ala ₂ -L-Ser
A11.12	A3alpha L-Lys-L-Ala ₂ -Gly-L-Ala
A11.13	A3alpha L-Lys-L-Ala-L-Ser
A11.14	A3alpha L-Lys-L-Ser
A11.15	A3alpha L-Lys-L-Ala ₂ -L-Ser
A11.16	A3alpha L-Lys-L-Ala(L-Ser)-L-Ser
A11.17	A3alpha L-Lys-L-Ala-L-Thr-L-Ala
A11.18	A3alpha L-Lys-L-Ser-L-Ala
A11.19	A3alpha L-Lys-L-Ser-L-Ser(L-Ala)
A11.20	A3alpha L-Lys-L-Ser-L-Ala ₂

A11.21 A3alpha L-Lys(L-Orn)-L-Ala(L-Ser)-L-Ala₂
A11.22 A3alpha L-Lys-L-Ser-L-Ala₂₋₃; alpha-carboxyl group of D-Glu substituted by glycine amide
A11.23 A3alpha L-Lys-L-Ser-L-Thr-L-Ala
A11.24 A3alpha L-Lys-L-Thr-Gly
A11.25 A3alpha L-Lys-L-Thr-L-Ala
A11.26 A3alpha L-Lys-L-Thr-L-Ala; alpha-carboxyl group of D-Glu substituted by alanine amide
A11.27 A3alpha L-Lys-L-Thr-L-Ala₂
A11.28 A3alpha L-Lys-L-Thr-L-Ala₃
A11.29 A3alpha L-Lys-L-Thr-L-Ser(L-Ala)
A11.30 A3alpha L-Lys-L-Thr-L-Ser-L-Ala₂
A11.31 A4alpha L-Lys-D-Asp
A11.32 A4alpha L-Lys(L-Orn)-D-Asp
A11.33 A4alpha L-Lys-D-Glu
A11.34 A4alpha L-Lys-L-Ala-D-Asp
A11.35 A4alpha L-Lys-L-Ala-L-Glu
A11.36 A4alpha L-Lys-L-Ser-D-Asp
A11.37 A4alpha L-Lys-D-Ser-D-Asp
A11.38 A4alpha L-Lys-D-Ser-D-Glu
A11.39 A4alpha L-Lys-L-Ser₂-D-Glu
A11.40 A4alpha L-Lys-Gly-D-Glu
A11.41 A3alpha L-Lys-Gly-L-Ala₂
A11.42 A4alpha L-Lys-Gly-D-Asp
A11.43 A4alpha L-Lys-D-Glu₂
A11.44 A3alpha L-Lys-Gly(L-Ser)
A11.45 A4alpha L-Lys-L-Thr-D-Asp
A11.46 A3alpha L-Lys-L-Ala-Gly-L-Ala₂
A11.47 A3alpha L-Lys-L-Ala-Gly; alpha-carboxyl group of D-Glu substituted by alanine amide
A11.48 A4alpha L-Lys-L-Ser-D-Glu
A11.49 A3alpha L-Lys-L-Ser-Gly
A11.50 A3alpha L-Lys-L-Ala-Gly
A11.51 A5alpha L-Lys-L-Lys-D-Glu
A11.52 A5alpha L-Lys-L-Lys-D-Asp
A11.53 A5alpha L-Lys-L-Ala-L-Lys-D-Glu
A11.54 A4alpha L-Lys-L-Glu
A11.55 A5alpha L-Lys(L-Orn)-L-Lys-D-Glu
A11.56 A4alpha L-Lys-Gly-L-Glu
A11.57 A4alpha L-Lys-L-Thr-D-Glu
A11.58 A4alpha L-Lys-L-Ser-L-Glu
A11.59 A4alpha L-Lys-L-Ala-D-Glu
A11.60 A4alpha L-Lys-D-Asp; alpha-carboxyl group of D-Glu substituted by glycine
A11.61 A3alpha L-Lys-L-Ala(L-Ser)
A11.62 A3alpha L-Lys-L-Ala₂-Gly₂₋₃-L-Ala(Gly)
A12.1 A3alpha' L-Lys-Gly
A12.2 A4alpha' L-Lys-D-Glu
A12.3 A4alpha' L-Lys-Gly-D-Asp
A12.4 A3alpha' L-Lys-L-Ser
A21.1 A3β L-Orn-Gly₂₋₃
A21.2 A3β L-Orn(L-Lys)-L-Ala₂₋₃
A21.3 A3β L-Orn-L-Ser-L-Ala-L-Thr-L-Ala

A21.4	A4 β L-Orn-D-Asp
A21.5	A4 β L-Orn-D-Glu
A21.6	A4 β L-Orn(L-Lys)-D-Glu
A21.7	A4 β L-Orn-D-Ser-D-Asp
A21.8	A4 β L-Orn(L-Lys)-D-Ser-D-Asp
A21.9	A4 β L-Orn-L-Ser-D-Glu
A21.10	A3 β L-Orn- β -Ala
A21.11	A5 β L-Orn-L-Lys-D-Glu
A21.12	A4 β L-Orn-D-Ser-D-Glu
A21.13	A4 β L-Orn-Gly ₂ -D-Glu
A21.14	A4 β , L-Orn-L-Ala-Gly-D-Asp
A22.1	A4 β ' L-Orn-D-Asp
A23.1	A4 β L-Orn-L-Glu; position 1 of the peptid subunit is L-Ser
A31	A1gamma m-Dpm-direct
A31.1	A4gamma m-Dpm-D-Glu ₂
A31.2	A4gamma m-Dpm-D-Glu ₂ ; alpha-carboxyl group of D-Glu substituted by glycine
A31.3	A4gamma m-Dpm-D-Asp-D-Glu; alpha-carboxyl group of D-Glu substituted by glycine
A41.1	A3gamma LL-Dpm-Gly
A41.2	A3gamma LL-Dpm-Gly ₃ ; alpha-carboxyl group of D-Glu substituted by glycine
A42.1	A3gamma' LL-Dpm-Gly
A51	A1delta Lan-direct

Group B: Cross-linkage between position 2 and 4 of two peptide subunits

B1	B1alpha {Gly} [L-Lys] D-Glu(Hyg)-Gly-L-Lys
B2	B1 β {Gly} [L-Hsr] D-Glu(Hyg)-Gly ₂ -L-Lys
B3	B1gamma {Gly} [L-Glu] D-Glu(Hyg)-Gly ₂ -L-Lys
B4	B2alpha {L-Ser} [L-Orn] D-Glu-D-Lys(D-Orn)
B5	B2 β {Gly} [L-Hsr] D-Glu-D-Orn
B6	B2 β {Gly} [L-Hsr] D-Glu(Hyg)-Gly-D-Orn
B7	B2gamma {Gly} [L-Dab] D-Glu-D-Dab
B8	B1 β {Gly} [L-Hsr] D-Glu-Gly-L-Dab
B9	B2alpha {Gly} [L-Orn] D-Glu-D-Orn
B10	B2 β {Gly} [L-Hsr] D-Glu-D-Dab
B11	B2delta {Gly} [L-Ala] D-Glu-D-Dab-L-Thr
B12	B2alpha {Gly} [L-Orn] D-Glu-Gly-D-Orn
B13	B1delta {L-Ser} [L-Ala] D-Glu-L-Asp-L-Lys
B14	B2 β {Gly} [L-Hsr] D-Glu-D-Lys
B15	B1delta {L-Ser} [L-Ala] D-Glu-Gly-L-Lys-L-Lys

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