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## Cell wall deficiency and its effect on methicillin heteroresistance in *Staphylococcus aureus*.

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### Source

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### Abstract

Clinical strains of *Staphylococcus aureus* with different phenotypic methicillin susceptibility characteristics, bearing or lacking the *mecA* gene, were tested for their ability to transform into a cell wall-deficient state under special conditions of cultivation. Conversion to L-form growth with formation of typical L-form 'fried egg' colonies and expression of oxacillin resistance was observed in sensitive (*mecA*-negative) and heteroresistant (*mecA*-positive) strains. Transmission electron microscopy observation of these strains revealed pleomorphic populations of cell wall-deficient cells with ultrastructure morphology similar to that of a control stable L-form strain of *S. aureus*. The results demonstrate that expression of phenotypic methicillin resistance could be associated with cell wall deficiency in *S. aureus* strains and could underlie the phenomenon of heteroresistance.

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