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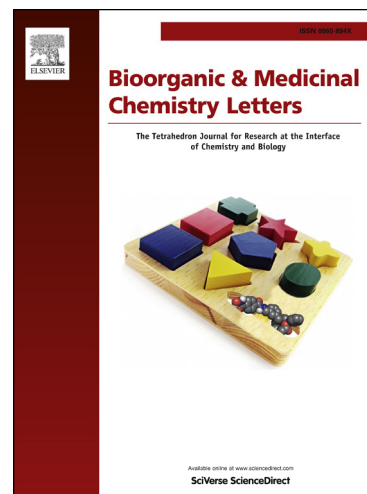
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**Chemical Structure and Biological Activity of a Quorum Sensing Pheromone from *Bacillus subtilis* subsp. *natto***

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**Key words:** *Bacillus subtilis*; *natto*; posttranslational modification; quorum sensing.

**Abstract**

*Bacillus subtilis* subsp. *natto* secretes a peptide pheromone, named ComX<sub>natto</sub> pheromone, as an inducer for biofilm formation containing poly-γ-glutamic acid. Recently, the ComX<sub>natto</sub> pheromone was identified to be a hexapeptide with an amino acid sequence of Lys-Trp-Pro-Pro-Ile-Glu, and the tryptophan residue was post-translationally modified with a farnesyl group. In order to determine the precise modification of the tryptophan residue, ComX<sub>natto</sub> pheromone was synthesized using solid-phase peptide synthesis. Biological activity of the ComX<sub>natto</sub> pheromone was then investigated. It was demonstrated that poly-γ-glutamic acid production were accelerated by ComX<sub>natto</sub> pheromone at more than 1 nM in *natto*.

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