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Toxicity and Antimicrobial Activities of Ionic Liquids with Halogen Anion

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ABSTRACT

To investigate the eco-toxicity of ionic liquids (ILs), experiments on growth of three kinds of bacteria were carried out for six common ILs with halogen anion by a micro-calorimetric method at 310 K. The results indicate that the growth of all the bacteria was inhibited in the presence of ILs. In addition, all ILs at definite concentrations show some toxicity to *Escherichia coli*, *Staphylococcus aureus* and *Bacillus subtilis*. Anti-microbial activities of the ILs with halogen anion are strongly related to structures of the ILs. An increase in alkyl group chain length corresponds with an increase in toxicity, and the ILs with pyridinium cation exhibit stronger restraining effect than the same series ILs with imidazolium cation.

KEYWORDS

Toxicity, Ionic Liquids, Inhibition

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