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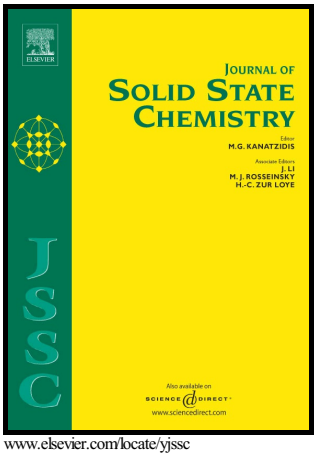

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Analgesic molecules interleaved between layered double hydroxide: exchange versus in situ reaction and release properties

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ABSTRACT

The encapsulation of molecules of therapeutic interest is emerging as an attractive tool to increase the stability of an active ingredient, to control its release over time and to prevent drug overdose. In this drug delivery approach, several analgesic molecules are considered, including (2E)-2-cyano-3-(furan-3-yl)acrylic acid (CFAA), and the host structure, lamellar double hydroxides (LDH) of the hydrotalcite type, as a vector. These organic compounds are prepared by Knoevenagel condensation between cyanoacetic acid and an aldehyde. Two strategies were employed: direct insertion of the organic compounds by ion exchange versus