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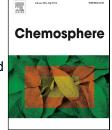
Dual role of layered double hydroxide nanocomposites on antibacterial activity and degradation of tetracycline and oxytetracyline

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PII:	S0045-6535(18)30845-2
DOI:	10.1016/j.chemosphere.2018.05.003
Reference:	CHEM 21331
To appear in:	Chemosphere
Received Date:	20 February 2018
Revised Date:	04 April 2018
Accepted Date:	01 May 2018

Please cite this article as: Zaineb Bouaziz, Laurence Soussan, Jean-Marc Janot, Maguy Jaber, Abdesslem Ben Haj Amara, Sebastien Balme, Dual role of layered double hydroxide nanocomposites on antibacterial activity and degradation of tetracycline and oxytetracyline, *Chemosphere* (2018), doi: 10.1016/j.chemosphere.2018.05.003

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1	Dual role of layered double hydroxide nanocomposites on
2	antibacterial activity and degradation of tetracycline and
3	oxytetracyline
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15	Abstract:
16	The antibiotic intercalation inside the layered double hydroxide (LDH) layers was usually considered
17	for water decontamination but rarely for drug delivery. Here, tetracycline (TCH) and oxytetracycline
18	(OXY) were immobilized in Zn ₂ Al-Cl LDH following two methods: co-precipitation and anionic
19	exchange. The interfacial concentration of antibiotic varies from 0.04 to 0.5 depending the method of
20	immobilization. The antibiotics are not intercalated in the interlayer space allowing their release in 10
21	Hours. The antibacterial activity against both E. coli and S. epidermidis revealed that the loaded
22	antibiotics are still active but less efficient compared to the free ones. After exposition to UV light or
23	to high temperature storage (30, 60 and 120°C), their antibacterial activity significantly decreases due

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