Supporting Information

Layered composite based on halloysite and natural polymers: a carrier for pH controlled release of drugs

Lorenzo Lisuzzo, Giuseppe Cavallaro, Stefana Milioto, Giuseppe Lazzara

a Dipartimento di Fisica e Chimica, Università degli Studi di Palermo, Viale delle Scienze, pad. 17, 90128 Palermo, Italy. giuseppe.lazzara@unipa.it

b Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, INSTM, Via G. Giusti, 9, I-50121 Firenze, Italy
**Drug loading calculation details from thermogravimetric analysis.**

The rule of mixtures for the degraded samples at 700 °C (MD\textsubscript{700}) was used in order to calculate the amount of diclofenac loaded into the nanotubes.

As a general equation, MD\textsubscript{700} can be estimated as

\[
MD_{700} = 100 - (MR_{700} + ML_{150})
\]

where MR\textsubscript{700} is the residual matter at 700 °C, while ML\textsubscript{150} is the mass amount that was lost from 25 to 150 °C. ML\textsubscript{150} represents the water content of the investigated material.

As concerns the nanoclays loaded with the drug, the degraded matter at 700 °C (MD\textsubscript{700-NG}) can be expressed as

\[
MD_{700-NG} = (C_N \cdot MD_{700-N} + C_G \cdot MD_{700-G})/100
\]

where C\textsubscript{N} and C\textsubscript{G} are the weight percents of nanoclay and guest molecule, respectively, while MD\textsubscript{700-N} and MD\textsubscript{700-G} are the degraded matters at 700 °C for the corresponding pristine components.

By the combination of the equations 1,2, C\textsubscript{N} can be calculated as

\[
C_N = 100 \cdot (MR_{700-G} + ML_{150-G} - MR_{700-N} - ML_{150-N})/( MR_{700-G} + ML_{150-G} - MR_{700-G} - ML_{150-N})
\]

C\textsubscript{G} can be determined as

\[
C_G = 100 - C_N
\]

**UV-VIS calibration results for the drug at variable pH conditions.**

Table S1 reports the extinction coefficients (ε) of diclofenac measured at the three different pH values, previously to release studies.

<table>
<thead>
<tr>
<th>pH</th>
<th>ε (100 ml g\textsuperscript{-1})</th>
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<tbody>
<tr>
<td>3</td>
<td>187.2</td>
</tr>
<tr>
<td>5.7</td>
<td>311.0</td>
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<tr>
<td>7.8</td>
<td>301.1</td>
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