Datasheet Chloramphenicol-$^{37}$Cl$_2$

Reference number : CEC/MAT : 07

Date of preparation : 1993.11.23

date : 17 January 2003

source : RIVM

“The Bank of Reference Standards”

The Bank of Reference Standards was financially supported by the European Commission
Directorate General “Science, Research and Development DG XII”
Contract MAT 1 - CT92 - 0020
Name: D(-)-Threo-2,2-di$^{37}$Cl Chloro-N-[$\beta$-hydroxy-$\alpha$-(hydroxymethyl)-p-nitrophenethyl]acetamide

Synonym: chloramphenicol-$^{37}$Cl$_2$

Molecular formula: C$_{11}$H$_{12}$O$_5$N$_2^{37}$Cl$_2$

Cas #: not available

Molecular weight: 326.16

Long term stability tested on 1997.10.02: 99.9 ± 6.4 %
(storage 4°C, analysis HPLC-UV, 6 tests on 2 ampoules)

Last update: 1998.01.06

Methods used for characterization

I  IR spectroscopy
II Mass spectrometry
III HPLC-UV spectroscopy
IV $^1$H-NMR spectrometry
V Homogeneity and stability obtained with GC-MS
I IR-SPECTROSCOPY

Instrument: Bruker IFS-55 FTIR; detector DTGS
Sampling technique: KBr-tablet.

II MASS-SPECTROMETRY

Instrument: Hewlett Packard 5989 A MS
MS spectrum, DIP = direct inlet probe

III HPLC-UV SPECTROSCOPY

Instrument: TSP spectrasystem UV2000; resolution 2nm.
HPLC eluent: methanol/water (70:30 v/v)
HPLC column: Lichrocart 125-4 hplc cartridge

**IV $^1$H-NMR SPECTROMETRY**

Instrument: FT-NMR Jeol GSX; 270 MHz, 5 mm probe, solvent DMSO

<table>
<thead>
<tr>
<th>Chemical shifts (ppm)</th>
<th>Amount of protons (multiplicity)</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.50</td>
<td>2 (m)</td>
<td>CH$_2$OH</td>
</tr>
<tr>
<td>3.95</td>
<td>1 (m)</td>
<td>CHNH</td>
</tr>
<tr>
<td>5.10</td>
<td>2 (m)</td>
<td>OH (2x)</td>
</tr>
<tr>
<td>6.10</td>
<td>1 (m)</td>
<td>CHOH</td>
</tr>
<tr>
<td>6.48</td>
<td>1 (s)</td>
<td>CHCl$_2$</td>
</tr>
<tr>
<td>7.92</td>
<td>4 (m)</td>
<td>arom.</td>
</tr>
<tr>
<td>8.38</td>
<td>1 (m)</td>
<td>NH</td>
</tr>
</tbody>
</table>
V HOMOGENEITY AND STABILITY

Stability and homogeneity test of CAP-$^{37}\text{Cl}_2$.

**CEC/MAT: 07**

<table>
<thead>
<tr>
<th>temp.</th>
<th>temp.</th>
<th>t = 0 months</th>
<th>t = 1,5 months</th>
<th>t = 3 months</th>
<th>t = 6 months</th>
<th>t = 12 months</th>
<th>t = 24 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>homogeneity</td>
<td>µg (m ± SD)</td>
<td>µg (m ± SD)</td>
<td>µg (m ± SD)</td>
<td>µg (m ± SD)</td>
<td>µg (m ± SD)</td>
</tr>
<tr>
<td>4°C</td>
<td>0°C</td>
<td>(109 ± 10)</td>
<td>(102 ± 4)</td>
<td>(103 ± 1)</td>
<td>(94 ± 5)</td>
<td>(94 ± 4)</td>
<td>(107 ± 2)</td>
</tr>
<tr>
<td>20°C</td>
<td>20°C</td>
<td>(107 ± 6)</td>
<td>(103 ± 1)</td>
<td>(101 ± 1)</td>
<td>(98 ± 1)</td>
<td>(105 ± 2)</td>
<td></td>
</tr>
<tr>
<td>37°C</td>
<td>37°C</td>
<td>(98 ± 3)</td>
<td>(102 ± 1)</td>
<td>(101 ± 5)</td>
<td>(99 ± 8)</td>
<td>(102 ± 2)</td>
<td></td>
</tr>
</tbody>
</table>

Stability test Chloramphenicol-$^{37}\text{Cl}_2$

- $4^\circ\text{C}$
- $20^\circ\text{C}$
- $37^\circ\text{C}$