Datasheet Dienestrol-D₂

Reference number : CEC/MAT : 02

Date of preparation: 1993.01.29

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: 4,4’-(1,2-Di(deutero)ethylidene-1,2-ethanediyl)diphenol
Synonym: dienestrol-D$_2$
Molecular formula: C$_{18}$H$_{16}$O$_2$D$_2$
Cas #: not available
Molecular weight: 268.35

Long term stability tested on 1997.09.08: 87.6 ± 2.0 %
(storage 4°C, analysis HPLC-UV, 6 tests on 2 ampoules)

Date: 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.

**DE-D2**

II MASS SPECTROMETRY

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

**Average of 2.770 to 3.303 min.: 95061506.D (-)**
III HPLC-UV spectrum

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

IV $^1$H-NMR SPECTROMETRY

Instrument: FT-NMR Jeol GSX; 270 MHz, 5 mm probe, solvent Aceton-D$_6$

<table>
<thead>
<tr>
<th>Chemical shifts (ppm)</th>
<th>Amount of protons (multiplicity)</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.45</td>
<td>6 (s)</td>
<td>CH$_3$ (2x)</td>
</tr>
<tr>
<td>6.93</td>
<td>8 (m)</td>
<td>arom.</td>
</tr>
</tbody>
</table>
V HOMOGENEITY AND STABILITY

Stability and homogeneity test of DE-D₂

CEC/MAT: 02

<table>
<thead>
<tr>
<th>Temp.</th>
<th>t = 0 months (n = 10)</th>
<th>t = 1.5 months (n = 2)</th>
<th>t = 3 months (n = 2)</th>
<th>t = 6 months (n = 2)</th>
<th>t = 12 months (n = 2)</th>
<th>t = 24 months (n = 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4°C</td>
<td>(98 ± 2)</td>
<td>(99 ± 1)</td>
<td>(98 ± 1)</td>
<td>(97 ± 2)</td>
<td>(106 ± 3)</td>
<td>(110 ± 1)</td>
</tr>
<tr>
<td>20°C</td>
<td>(98 ± 1)</td>
<td>(98 ± 1)</td>
<td>(95 ± 4)</td>
<td>(104 ± 1)</td>
<td>(108 ± 1)</td>
<td></td>
</tr>
<tr>
<td>37°C</td>
<td>(100 ± 1)</td>
<td>(99 ± 1)</td>
<td>(96 ± 1)</td>
<td>(105 ± 1)</td>
<td>(108 ± 1)</td>
<td></td>
</tr>
</tbody>
</table>

Stability test Dienestrol-d2

![Stability test Dienestrol-d2](image)

---> months

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