Datasheet Methyltestosterone-D₃

Reference number : CEC/MAT : 05

Date of preparation : 1993.05.11

date : 17 January 2003

source : RIVM

“Bank of Reference Standards”

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Directorate General “Science, Research and Development DG XII”
Contract MAT 1 - CT92 - 0020
METHYLTESTOSTERONE-D3

Name: 17α-Hydroxy-17β-trideuteromethyl-androst-4-en-3-one
Synonym: methyltestosterone-D3
Molecular formula: C_{20}H_{27}O_2D_3
Cas #: not available
Molecular weight: 305.47

Long term stability tested on 1997.09.16: 98.4 ± 6.8 %
(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  ^1H-NMR spectrometry
V   Homogeneity and stability obtained with GC-MS

Datasheet CEC-MAT reference standard material MT-D3, page 1 of 4
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 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 CDCl$_3$

<table>
<thead>
<tr>
<th>Chemical shifts (ppm)</th>
<th>Amount of protons (multiplicity)</th>
<th>Designation</th>
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</thead>
<tbody>
<tr>
<td>0.92</td>
<td>3 (s)</td>
<td>18-CH$_3$</td>
</tr>
<tr>
<td>1.05</td>
<td>3 (s)</td>
<td>19-CH$_3$</td>
</tr>
<tr>
<td>5.80</td>
<td>1 (s)</td>
<td>4-H</td>
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</tbody>
</table>

Library Contents

<table>
<thead>
<tr>
<th>Component</th>
<th>RT(min)</th>
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</thead>
<tbody>
<tr>
<td>MT-d3</td>
<td>13.320</td>
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</tbody>
</table>
## Stability and Homogeneity Test of MT-D3

### CEC/MAT: 05

<table>
<thead>
<tr>
<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>homogeneity</td>
<td>homogeneity</td>
<td>homogeneity</td>
<td>homogeneity</td>
<td>homogeneity</td>
<td>homogeneity</td>
</tr>
<tr>
<td></td>
<td>(n=10) µg (m ± SD)</td>
<td>(n=2) µg (m ± SD)</td>
<td>(n=2) µg (m ± SD)</td>
<td>(n=2) µg (m ± SD)</td>
<td>(n=2) µg (m ± SD)</td>
<td>(n=2) µg (m ± SD)</td>
</tr>
<tr>
<td>4°C</td>
<td>(100 ± 7)</td>
<td>(95 ± 5)</td>
<td>(101 ± 1)</td>
<td>(102 ± 3)</td>
<td>(99 ± 1)</td>
<td>(102 ± 1)</td>
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<tr>
<td>20°C</td>
<td>(102 ± 3)</td>
<td>(102 ± 2)</td>
<td>(103 ± 1)</td>
<td>(101 ± 2)</td>
<td>(101 ± 3)</td>
<td></td>
</tr>
<tr>
<td>37°C</td>
<td>(100 ± 1)</td>
<td>(100 ± 2)</td>
<td>(100 ± 1)</td>
<td>(100 ± 3)</td>
<td>(101 ± 2)</td>
<td></td>
</tr>
</tbody>
</table>

### Stability Test Methyltestosterone-d3

![Graph showing stability test](image)

- 4°C
- 20°C
- 37°C

--> months

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datasheet CEC-MAT reference standard material MT-D3, page 4 of 4