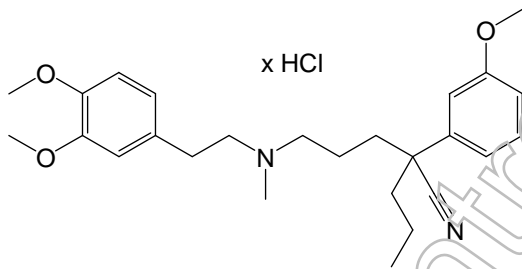




Certificate of Analysis

Reference Standard

(2RS)-2-(3,4-Dimethoxyphenyl)-5-[2-[2-(3,4-dimethoxyphenyl)ethyl](methyl)amino]-2-propylpentanenitrile Hydrochloride



Molecular Formula: $C_{27}H_{36}N_2O_4 \cdot HCl$
Molecular Weight: 491.96
CAS Number: [unlisted]

Catalogue Number: MM0022.16
Lot Number: 22.16.08.01
Long-term Storage: 2 to 8 °C, dark
Appearance: yellow solid
very hygroscopic
Assay 'as is': 96.8 %

Date of shipment: **2015-July-04**

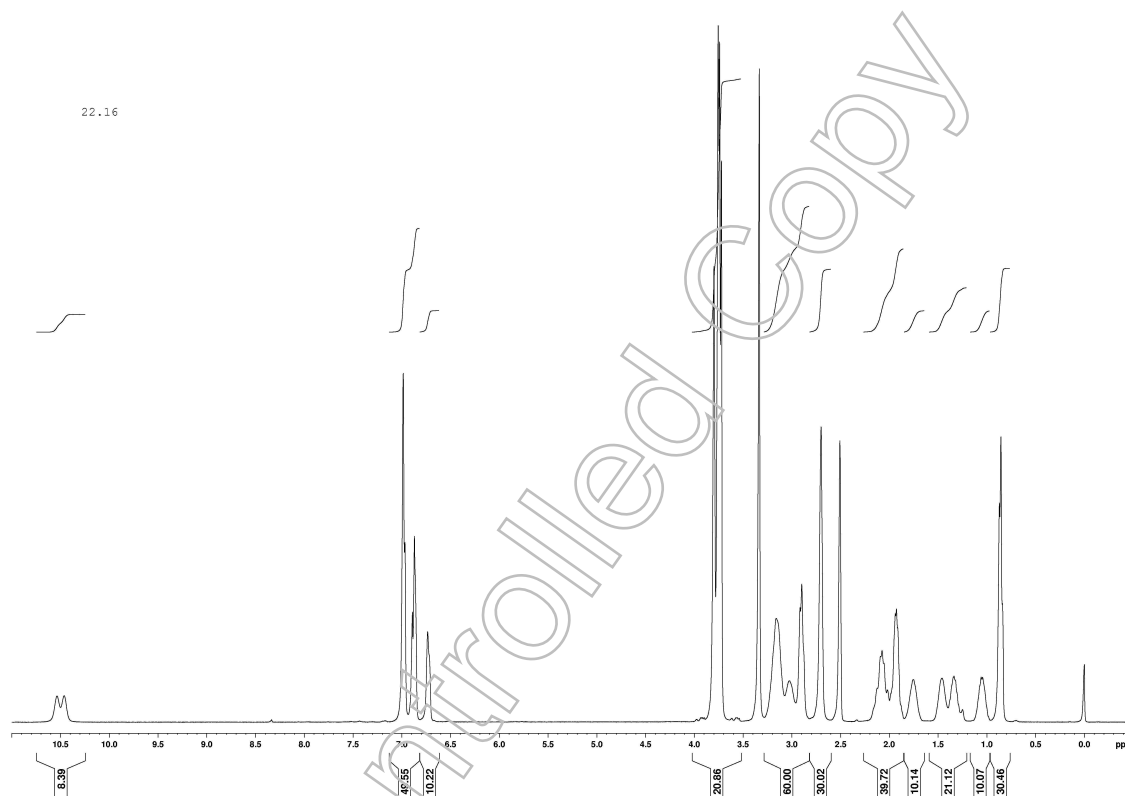
This certificate is valid for two years from the date of shipment provided the substance is stored under the recommended conditions.



I. Identity

The identity of the reference substance was established by $^1\text{H-NMR}$ spectroscopy. The structure is confirmed with the signals of the spectrum and their interpretation.

Conditions: 400 MHz, DMSO-d_6

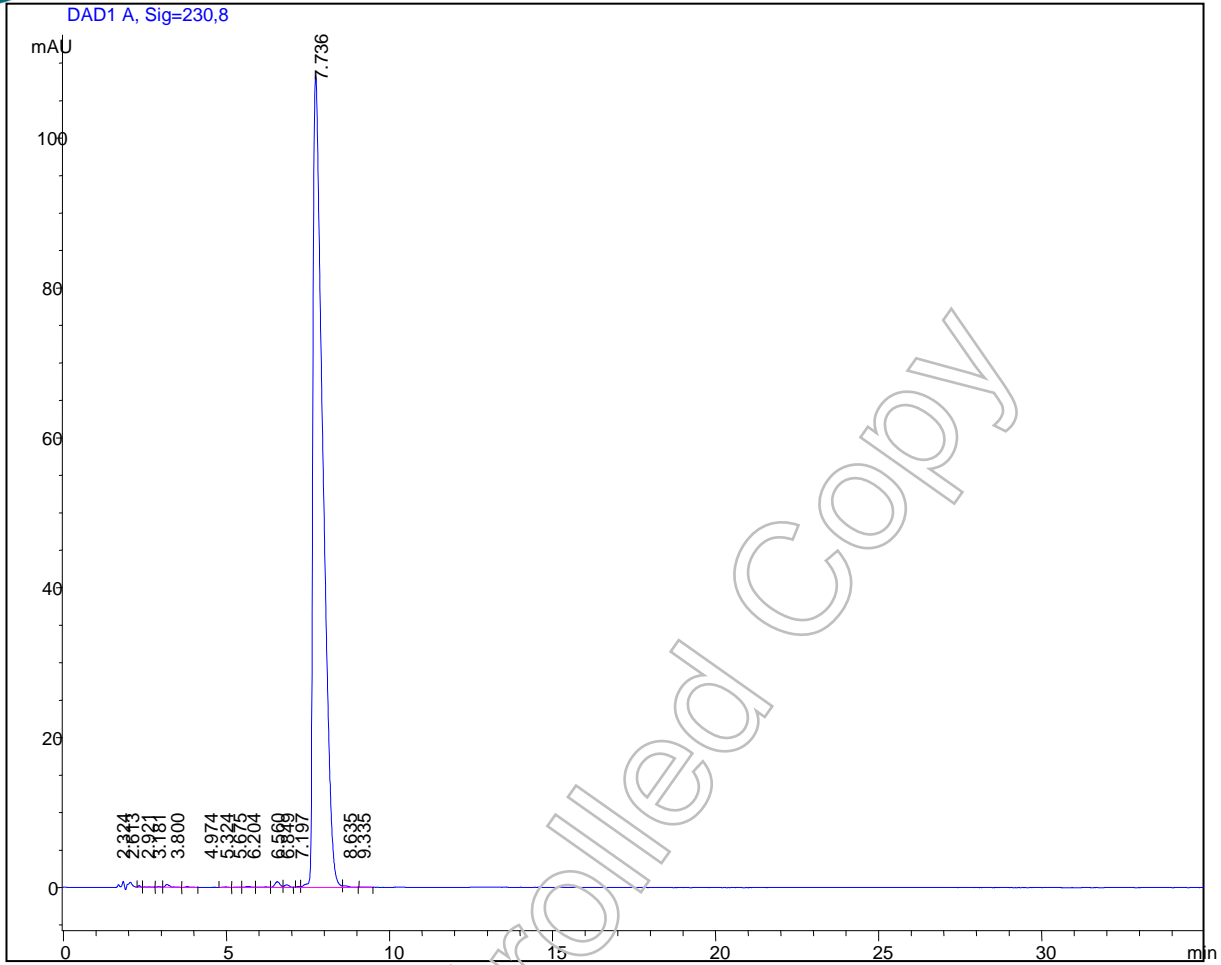


II. Purity

The purity of the reference substance was analysed by high performance liquid chromatography (HPLC).

HPLC Conditions:

Column:	Conditions:	Detector:	Injector:
Hypersil Gold (C18)	1.0 ml/min, 40 °C	DAD	Auto
5 μm , 150 x 4.6 mm	Water/Acetonitrile 68/32 (v/v); 0.1 % H_3PO_4	230 nm	4 μl ; 0.5716 mg/ml in Water/Acetonitrile 50/50 (v/v)



Area Percent Report - Sorted by Signal

Pk #	Retention Time	Area	Area %
1	2.32	0.93	0.04
2	2.61	0.88	0.04
3	2.92	0.90	0.04
4	3.18	4.19	0.18
5	3.80	1.62	0.07
6	4.97	0.96	0.04
7	5.32	0.71	0.03
8	5.68	1.94	0.08
9	6.20	1.49	0.06
10	6.56	8.60	0.37
11	6.85	3.71	0.16
12	7.20	1.10	0.05
13	7.74	2277.23	98.67
14	8.64	2.99	0.13
15	9.34	0.68	0.03
Totals		2307.92	100.00



For the calculation the system peaks were ignored. The content of the analyte was determined as ratio of the peak area of the analyte and the cumulative areas of the purities, added up to 100 %.

Results:

Average 98.57 %
Number of results n=2

III. Loss on Drying

Method: TGA

Result: 1.76 %

IV. Final Result

Total impurities (HPLC) 1.43 %
Loss on drying 1.76 %
Assay (100 % method) 96.84 %

The assay is assessed to be 96.8 % 'as is'

The assay 'as is' is equivalent to the assay based on the not anhydrous and not dried substance respectively.

Release Date: 2008-03-12

LGC GmbH

Dr. Sabine Schröder
Product Release