LoGiCal®
produced by LGC

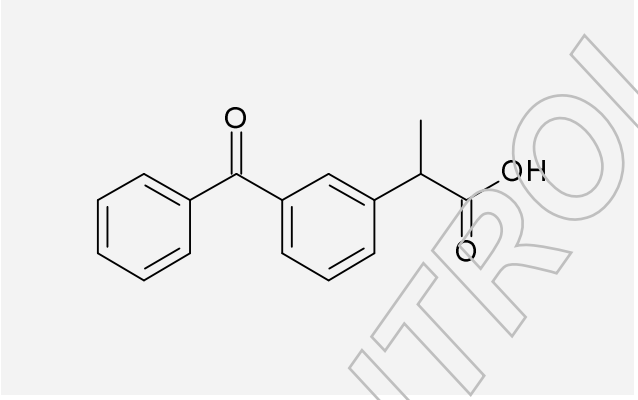
Certificate of Analysis

Reference Substance

Ketoprofen

Catalogue Number:	LGCFOR0001.00
Lot Number:	54735
Molecular Formula:	$C_{16}H_{14}O_3$
Molecular Weight:	254.28
CAS Number:	[22071-15-4]

Long-term Storage:	2 to 8 °C, dark
Appearance:	white solid
Melting Point:	94 °C
Assay 'as is':	99.6 %



Date of shipment: **2016-May-20**

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

Release Date: 2014-06-26

LGC GmbH

Dr. Sabine Schröder
Product Release

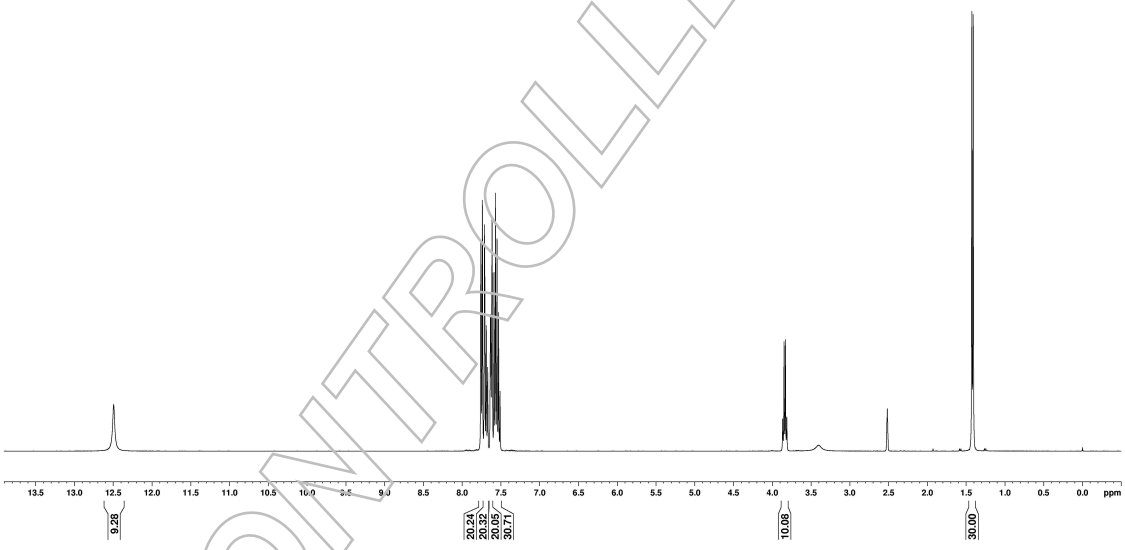
I. Identity

The identity of the reference substance was established by following analyses.

Ia. ^{1}H-NMR Spectrum

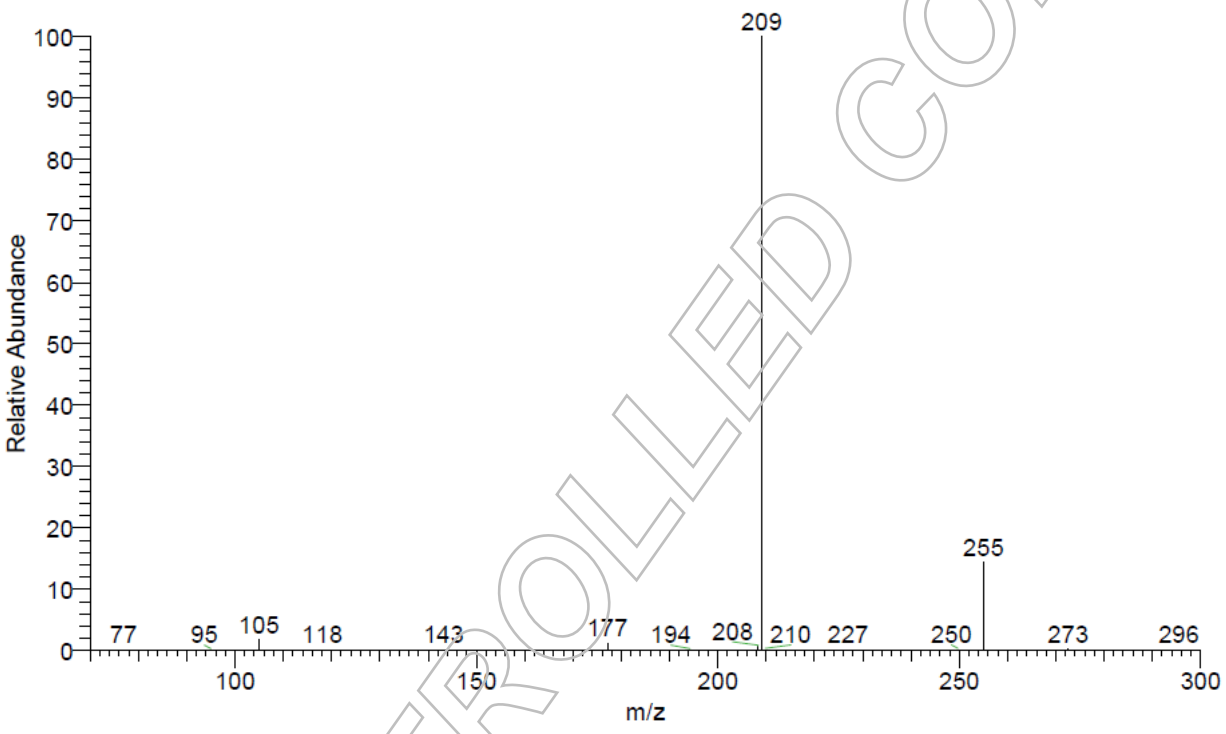
Conditions: 400 MHz, DMSO-d_6

The structure is confirmed with the signals of the spectrum and their interpretation.



Ib. Mass Spectrum

Method: 4.5 kV ESI; vaporization temperature: 200 °C, direct inlet

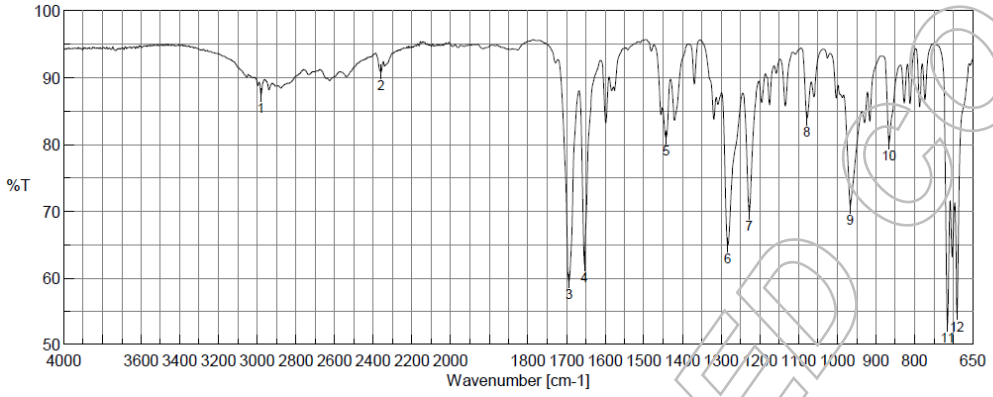


m/z	fragments
255	[MH]
209	[M – COOH]

The signals of the mass spectrum and their interpretation are consistent with the structural formula.

Ic. IR Spectrum

Method: Attenuated Total Reflection Fourier Transform Infrared (ATR-FTIR) Spectroscopy



Result of Peak Picking

No.	Position	Intensity
1	2979.48	87.3902
2	2358.52	90.8481
3	1693.19	59.4531
4	1653.66	61.9809
5	1442.49	81.0094
6	1283.39	64.8966
7	1227.47	69.7999
8	1078.01	83.8779
9	966.162	70.6676
10	865.882	80.2462
11	714.497	52.9503
12	690.391	54.6803

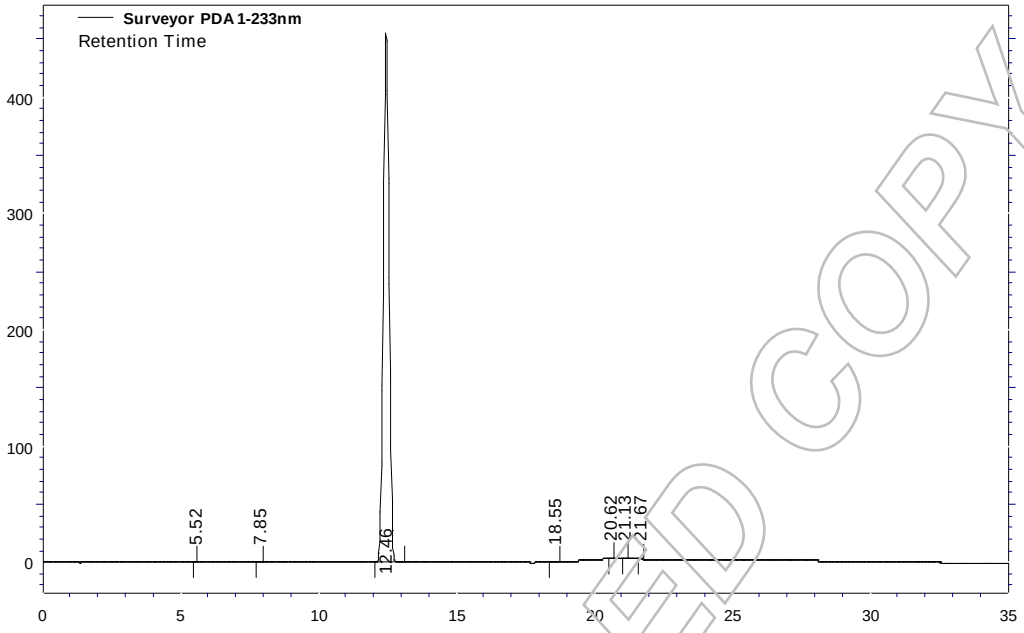
The signals of the IR spectrum and their interpretation are consistent with the structural formula.

II. Purity

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

HPLC Conditions:

Column:	**Conditions:**	**Detector:**	**Injector:**
Pro C 18 RS 5 µm, 150 x 4.6 mm	1.0 ml/min, 40 °C 0 – 15 min Water/Acetonitrile 60/40 15 – 18 min Water/Acetonitrile to 40/60 18 – 23 min Water/Acetonitrile 40/60 23 – 30 min Water/Acetonitrile to 60/40 30 – 35 min Water/Acetonitrile 60/40 (v/v); 0.1 % H_3PO_4	DAD 233 nm	Auto 5.5 µl; 0.1628 mg/ml in Water/Acetonitrile 50/50 (v/v)



Area Percent Report - Sorted by Signal

Pk #	Retention Time	Area	Area %
1	5.52	669	0.01
2	7.85	1498	0.02
3	12.46	6318808	99.67
4	18.55	9339	0.15
5	20.62	1150	0.02
6	21.13	2856	0.05
7	21.67	5418	0.09
Totals		6339738	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	99.67 %
Number of results	n=6
Standard deviation	0.01 %

III. Water Content

Method: Karl Fischer titration

Results:

Average	0.08 %
Number of results	n=2

IV. Residual Solvents

Method: ^{1}H-NMR

No significant amounts of residual solvents were detected (< 0.05 %).

V. Final Result

Total impurities (HPLC)	0.33 %
Water content	0.08 %
Residual solvents	No significant amounts of residual solvents were detected (< 0.05 %).
Assay (100 % method) [1]	99.59 %

The assay is assessed to be 99.6 % ‘as is’

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

[1] The calculation of the 100 % method follows the formula:

$$\text{Assay (\%)} = (100\ \% - \text{KF} - \text{RES}) * \frac{\text{Purity HPLC (\%)}}{100\ \%}$$

Water (KF) and Residual solvents (RES) are considered as absolute contributions, HPLC purity is considered as relative contribution.