

Electronic Supplementary Information belonging to the paper:

Polycationic phosphorus dendrimers: synthesis, characterization, study of cytotoxicity, complexation of DNA, and transfection experiments

Clément Padié,^a Maria Maszewska,^b Kinga Majchrzak,^b Barbara Nawrot,^{*b} Anne-Marie Caminade,^{*a} and Jean-Pierre Majoral^{*a}

^a *Laboratoire de Chimie de Coordination du CNRS, 205 route de Narbonne, 31077 Toulouse Cedex 4, France. Fax: + 33 561 55 30 03; E-mail: caminade@lcc-toulouse.fr; majoral@lcc-toulouse.fr*

^b *Department of Bioorganic Chemistry, Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Sienkiewicza 112, 90-363 Lodz, Poland, Fax:48-42-6815483; E-mail: bnawrot@bio.cbmm.lodz.pl*

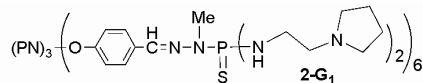
I. ³¹P NMR spectra of dendrimers on AC200 Bruker NMR instrument. Chemical shift of 85% H₃PO₄ in water was taken as a reference.

S - 2 -

CDCL3

PPM

71.9702



11.7359



P31Q5.001
DATE 15-3-4
TIME 15:21

SF 81.015
SY 81.0100000
O1 5000.000
SI 16384
TD 16384
SW 23809.524
HZ/PT 2.906

PW 4.0
RD .100
AQ .344
RG 800
NS 174
TE 298

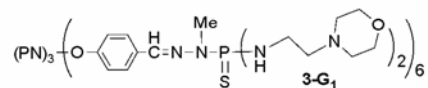
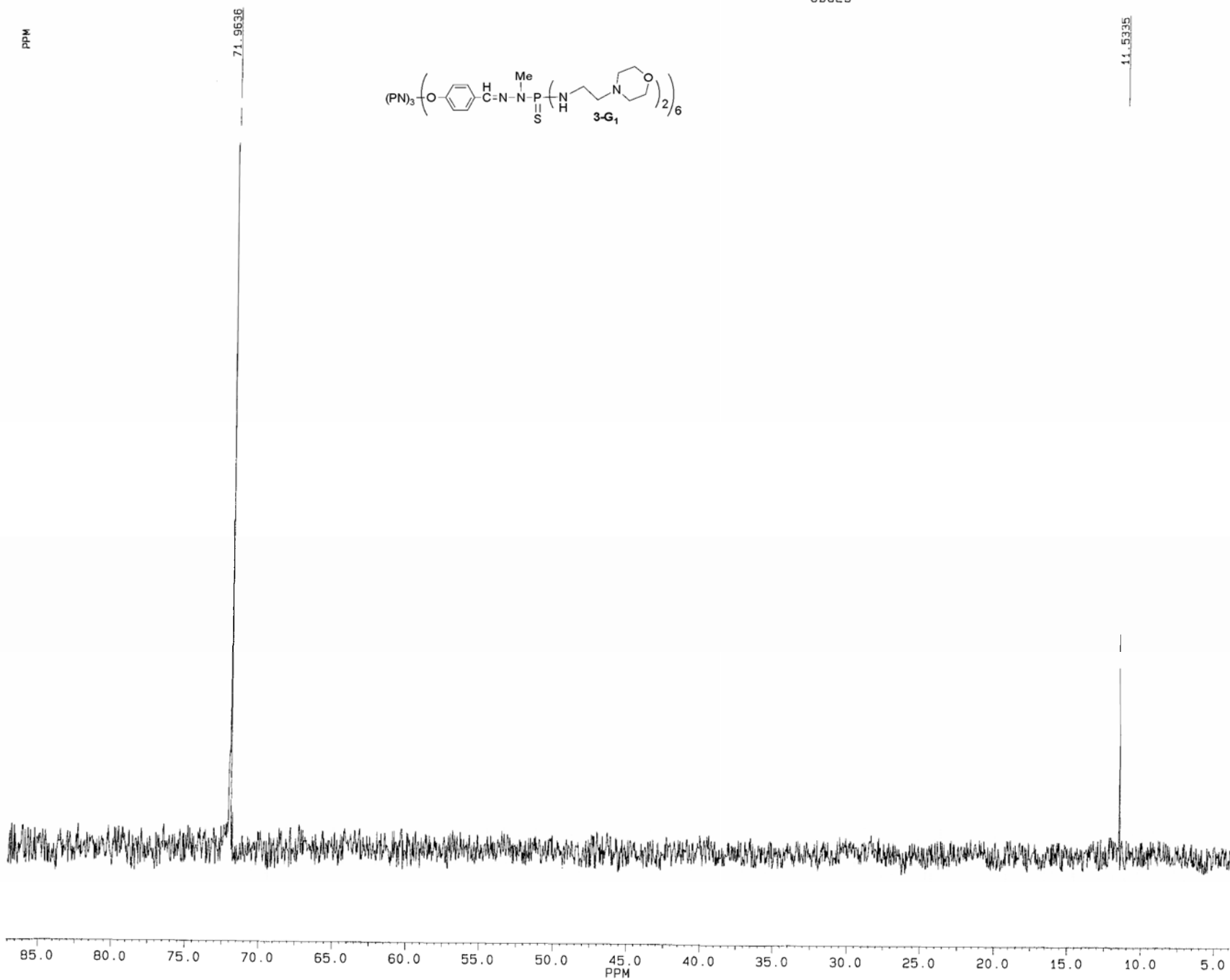
FW 29800
Q2 3300.000
DP 24H 5B

LB 1.000
GB 0.0
CX 35.00
CY 0.0
F1 81.118P
F2 5.421P
HZ/CM 175.217
PPM/CM 2.163
SR 4773.00

80.0 75.0 70.0 65.0 60.0 55.0 50.0 45.0 40.0 35.0 30.0 25.0 20.0 15.0 10.0
PPM

S - 3 -

CDCL3



P31T5.001
DATE 15-3-4
TIME 18:54

SF 101.255
SY 74.0
Q1 6000.000
SI 16384
TD 16384
SW 31250.000
HZ/PT 3.815

PW 10.0
RD .100
AQ .262
RG 320
NS 1691
TE 298

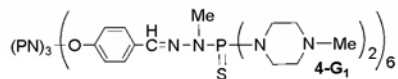
FW 39100
Q2 3800.000
DP 14H CPD

LB 1.000
GB 0.0
CX 35.00
CY 0.0
F1 87.071P
F2 3.924P
HZ/CM 240.544
PPM/CM 2.376
SR 285.00

S - 4 -

CDCL3

PPM
76.7040



11.4850



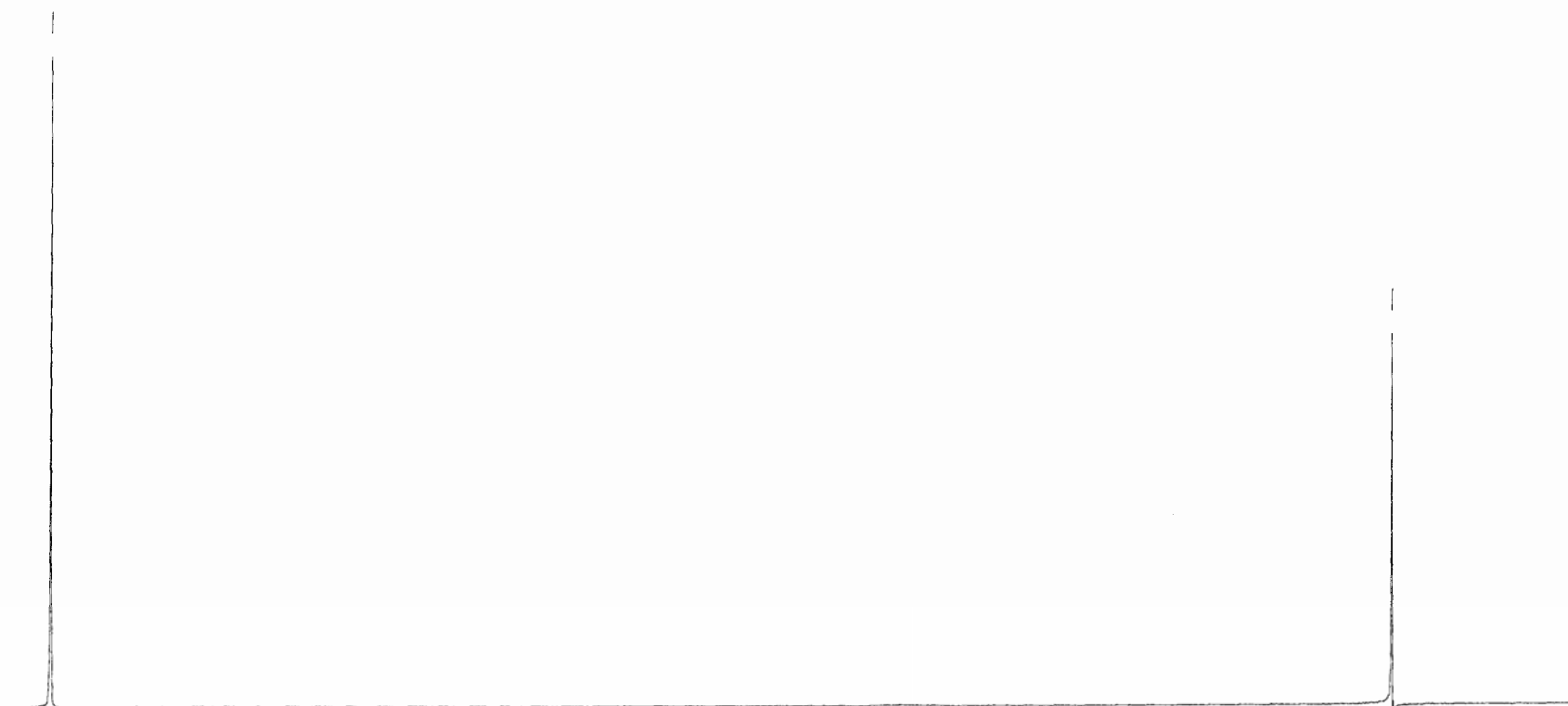
CP170304.001
DATE 17-3-4
TIME 13:03

SF 81.015
SY 81.0100000
O1 5000.000
SI 16384
TD 16384
SW 23809.524
HZ/PT 2.906

PW 4.0
RD .100
AQ .344
RG 100
NS 331
TE 298

FW 29800
O2 3300.000
DP 24H BB

LB .100
GB 0.0
CX 35.00
CY 0.0
F1 78.714P
F2 2.156P
HZ/CM 177.210
PPM/CM 2.187
SR 4773.00



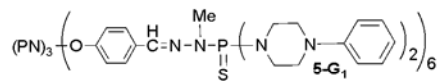
75.0 70.0 65.0 60.0 55.0 50.0 45.0 40.0 35.0 30.0 25.0 20.0 15.0 10.0 5.0
PPM

S - 5 -

CDCL3

PPM

76.4902



11.4845

~~BRUNNER~~

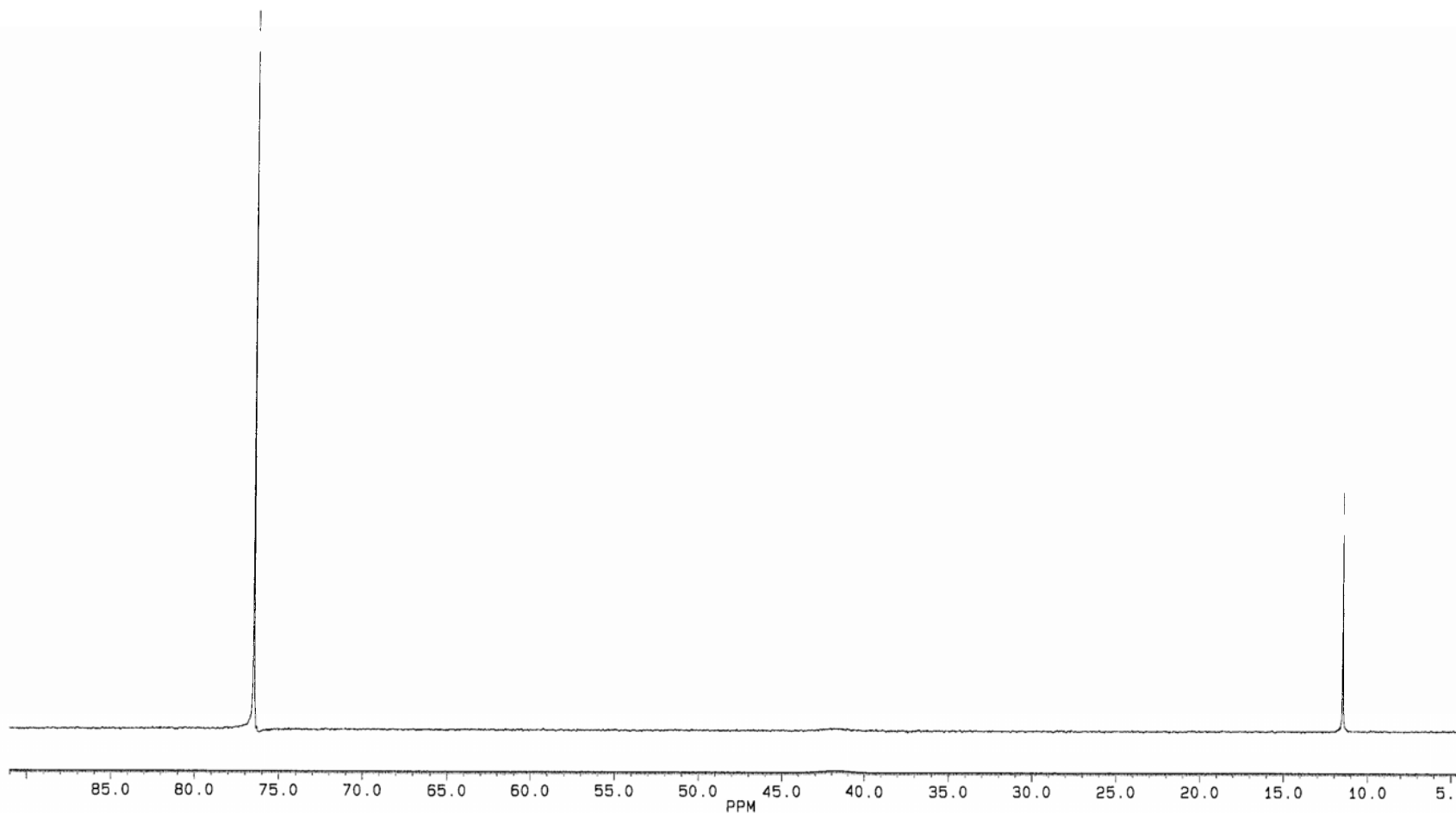
CP050304.006
DATE 5-3-4
TIME 19:30

SF 81.015
SY 81.010000
O1 5000.000
SI 16384
TD 16384
SW 23809.524
HZ/PT 2.906

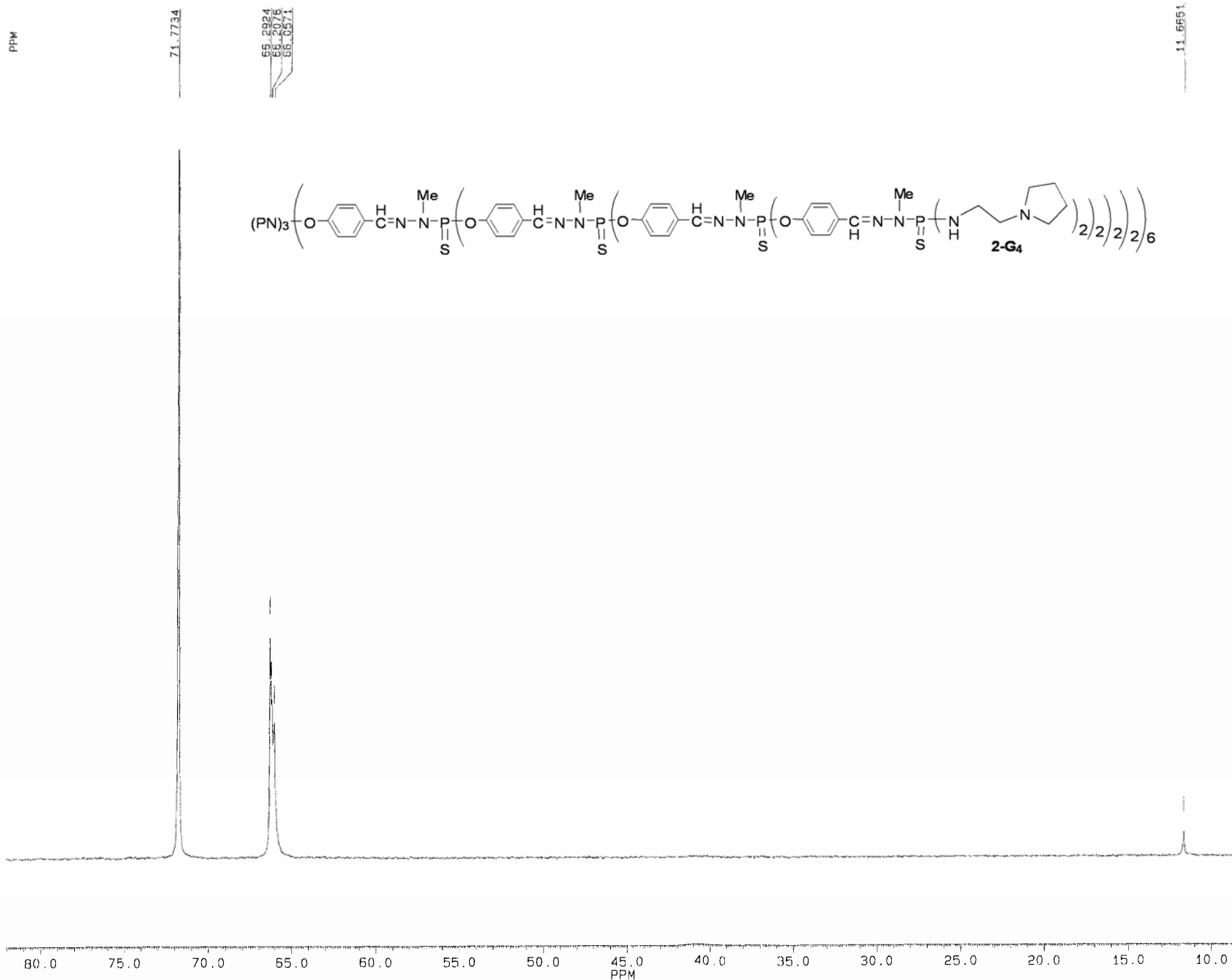
PW 4.0
RD .100
AQ .344
RG 800
NS 1511
TE 298

FW 29800
O2 3300.000
DP 24H BB

LB 1.000
GB 0.0
CX 35.00
CY 0.0
F1 7373.93H
F2 308.38H
HZ/CM 201.873
PPM/CM 2.492
SR 4773.00



S - 6 -



B₀JK₂R

CP2603.002
DATE 26-3-4
TIME 18:37

SF 81.015
SY 81.0100000
O1 5000.000
SI 16384
TD 16384
SW 23809.524
HZ/PT 2.906

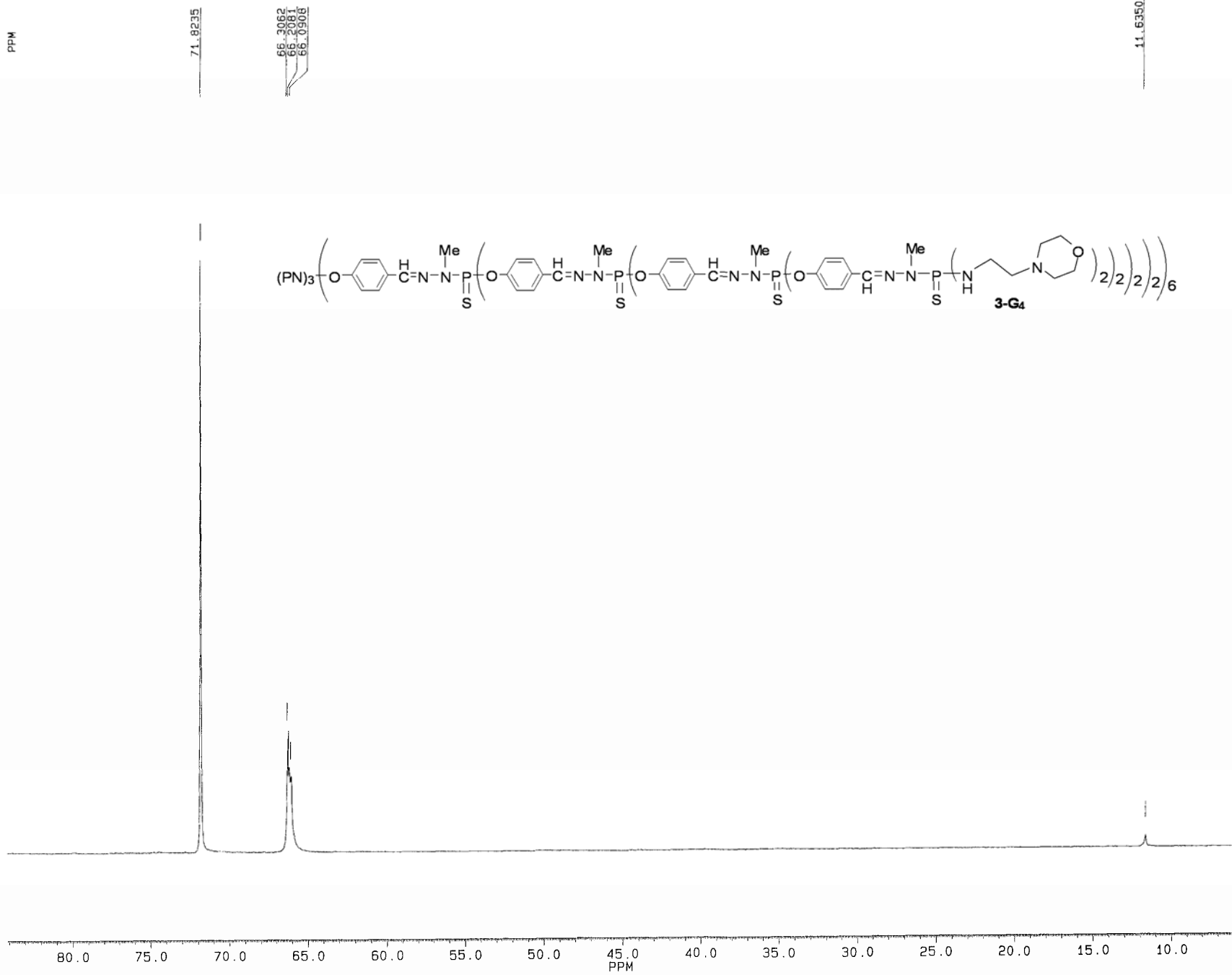
PW 4.0
RD .100
AQ .344
RG 400
NS 710
TE 298

FW 29800
O2 3300.000
DP 24H BB

LB 1.000
GB 0.0
CX 35.00
CY 0.0
F1 82.051P
F2 8.399P
HZ/CM 170.483
PPM/CM 2.104
SR 4773.00

S - 7 -

CDCL₃



GC4A2.002
 DATE 3-4-4
 TIME 10: 16

SF 81.015
 SY 81.0100000
 O1 5000.000
 SI 16384
 TD 16384
 SW 23809.524
 HZ/PT 2.906

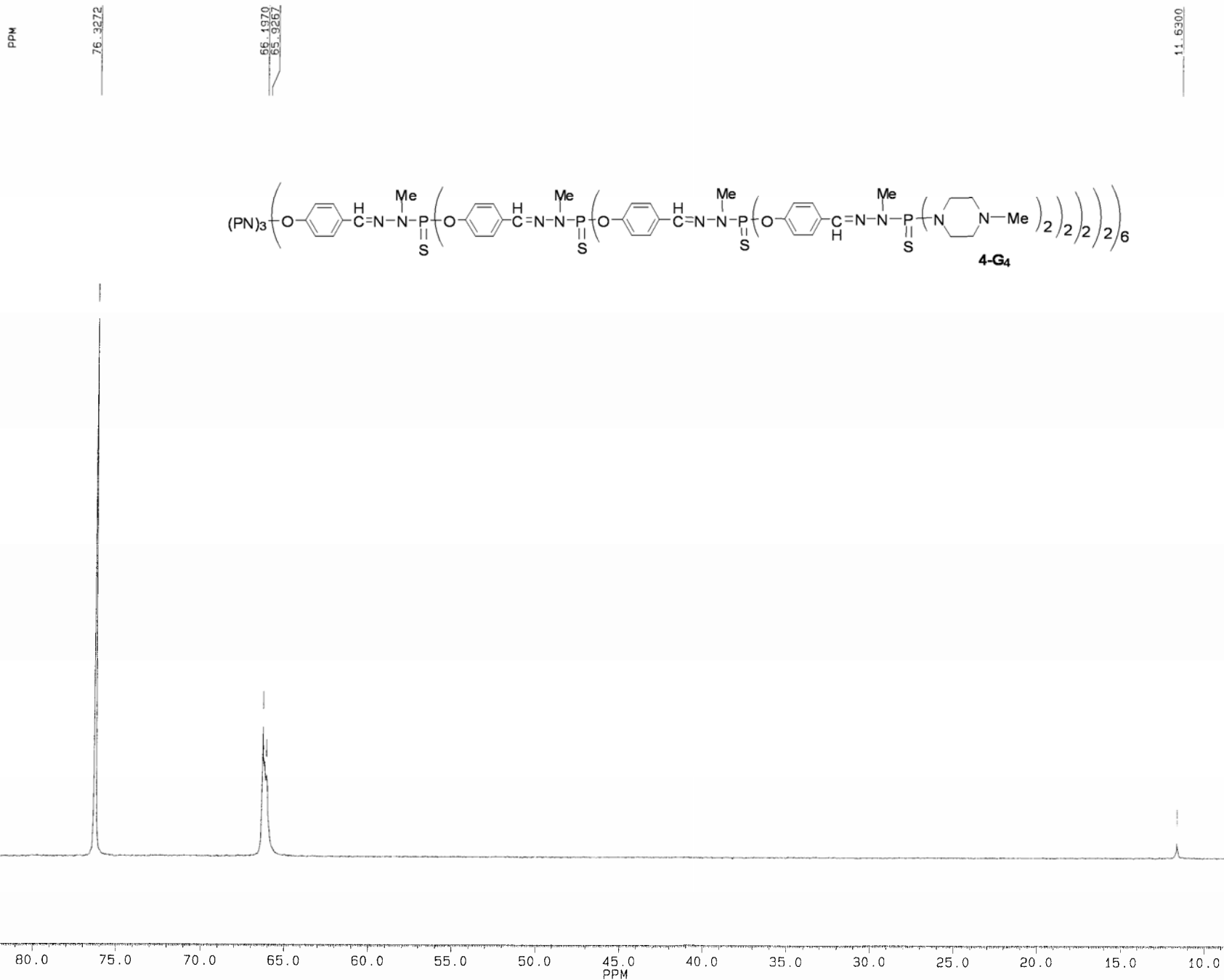
PW 4.0
 RD .100
 AQ .344
 RG 320
 NS 1016
 TE 298

FW 29800
 O2 3300.000
 DP 24H BB

LB 1.000
 GB 0.0
 CX 35.00
 CY 0.0
 F1 84.131P
 F2 6.102P
 HZ/CM 180.614
 PPM/CM 2.229
 SR 4773.00

S - 8 -

CDCl₃



~~BRUKER~~

CP010404.001
 DATE 1-4-4
 TIME 13:02

SF 81.015
 SY 81.010000
 Q1 5000.000
 SI 16384
 TD 16384
 SW 23809.524
 HZ/PT 2.906

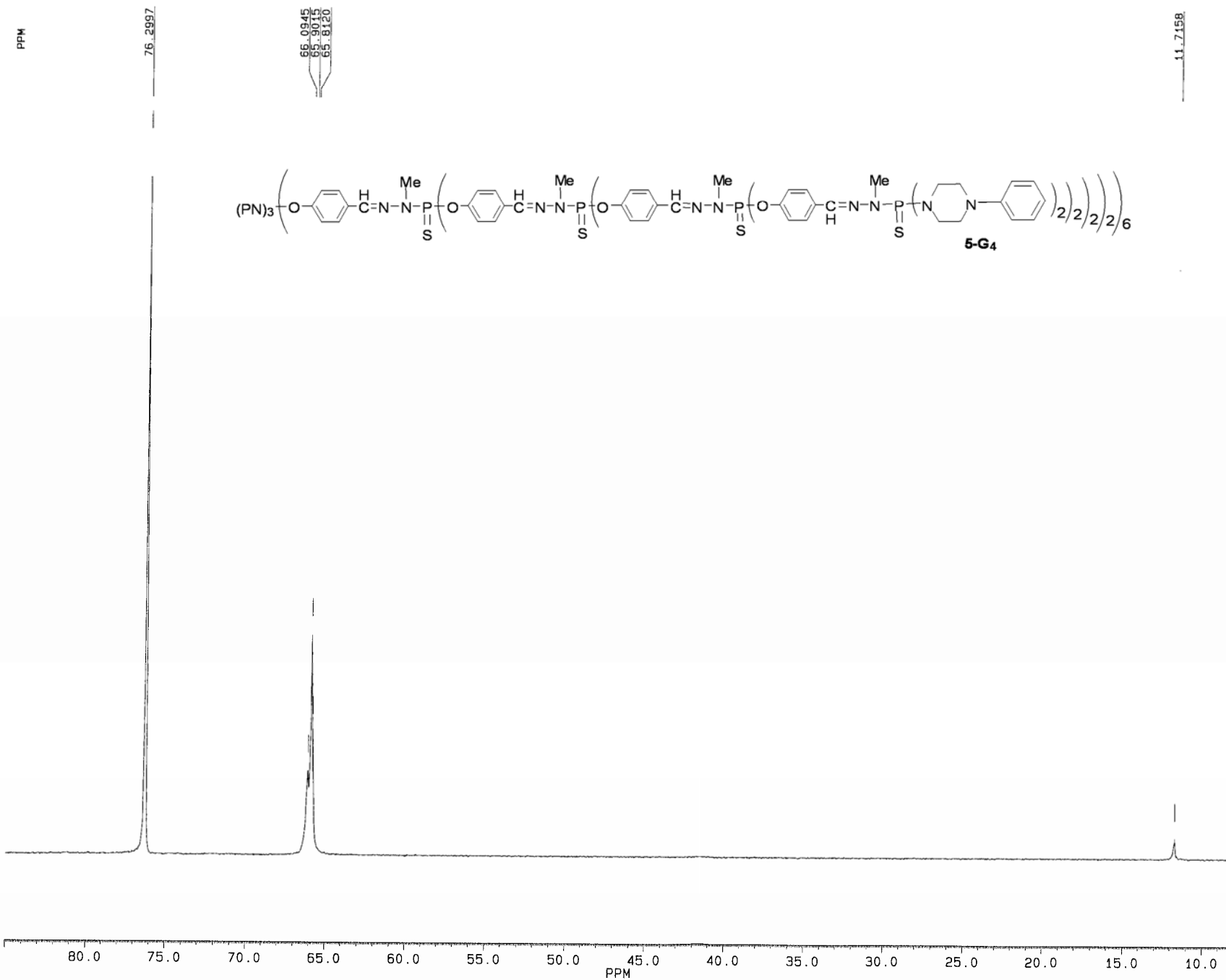
PW 4.0
 RD 2.00
 AQ 344
 RG 320
 NS 298
 TE 298

FW 29800
 O2 3300.000
 DP 24H BB

LB 1.000
 GB 0.0
 CX 35.00
 CY 0.0
 F1 81.972F
 F2 8.363F
 HZ/CM 170.400
 PPM/CM 2.103
 SR 4773.00

S - 9 -

CDCL₃



~~BUJER~~

GC4A5.002
DATE 4-4-4
TIME 18:39

SF 81.015
SY 81.010000
O1 5000.000
SI 16384
TD 16384
SW 23809.524
HZ/PT 2.906

PW 4.0
RD .100
AQ .344
RG 320
NS 800
TE 298

FW 29800
O2 3300.000
DP 24H BB

LB .100
GB 0.0
CX 35.00
CY 0.0
F1 84.992P
F2 8.112P
HZ/CM 177.957
PPM/CM 2.197
SR 4773.00

S - 10 -

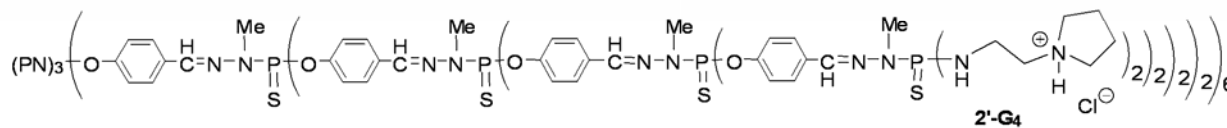
D2O

PPM

71.7686

66.2261

11.6929



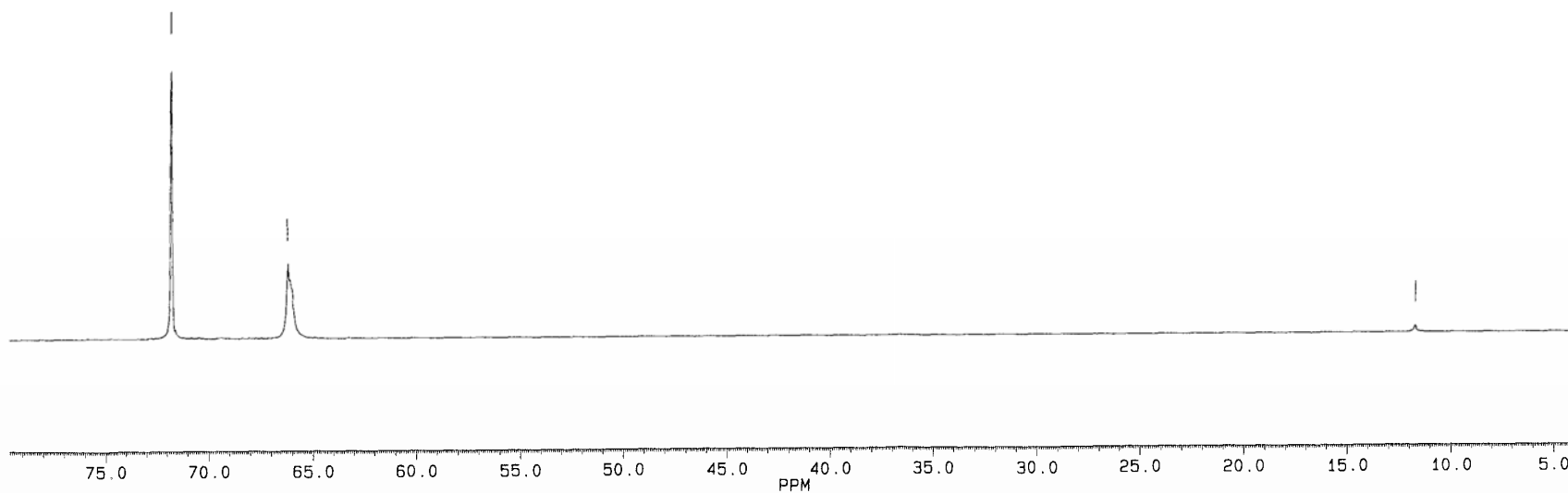
GC4A1.002
DATE 2-4-4
TIME 18:51

SF 81.015
SY 81.0100000
O1 5000.000
SI 16384
TD 16384
SW 23809.524
HZ/PT 2.906

PW 4.0
RD .100
AQ .344
RG 400
NS 1394
TE 298

FW 29800
O2 3300.000
DP 24H BB

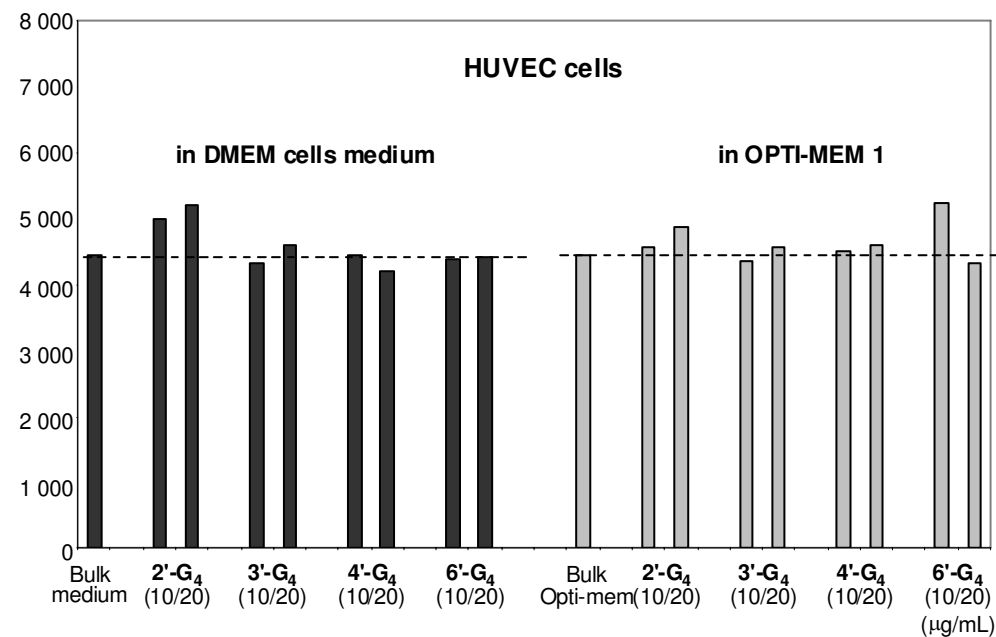
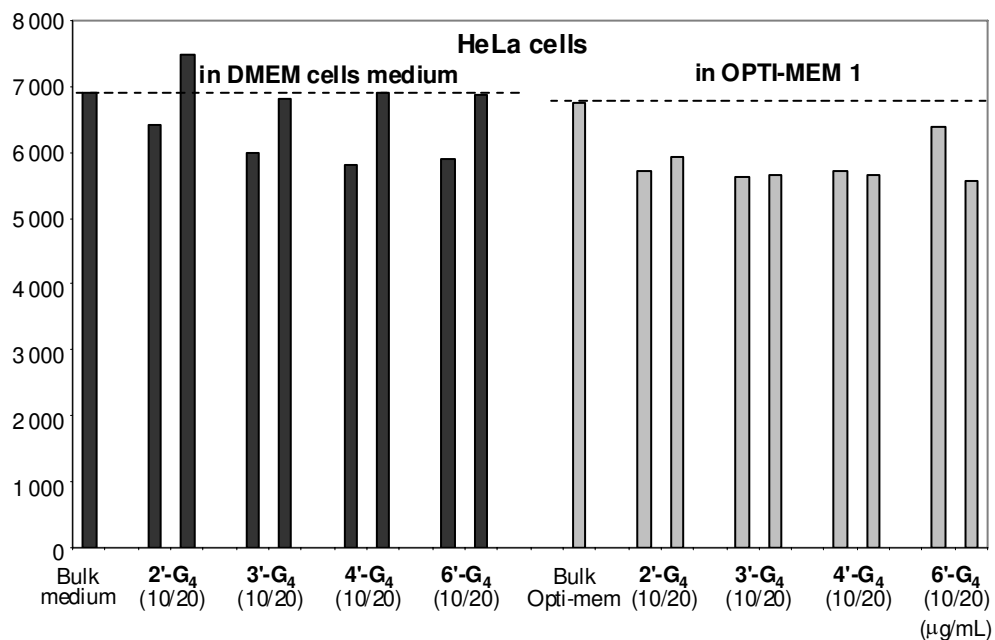
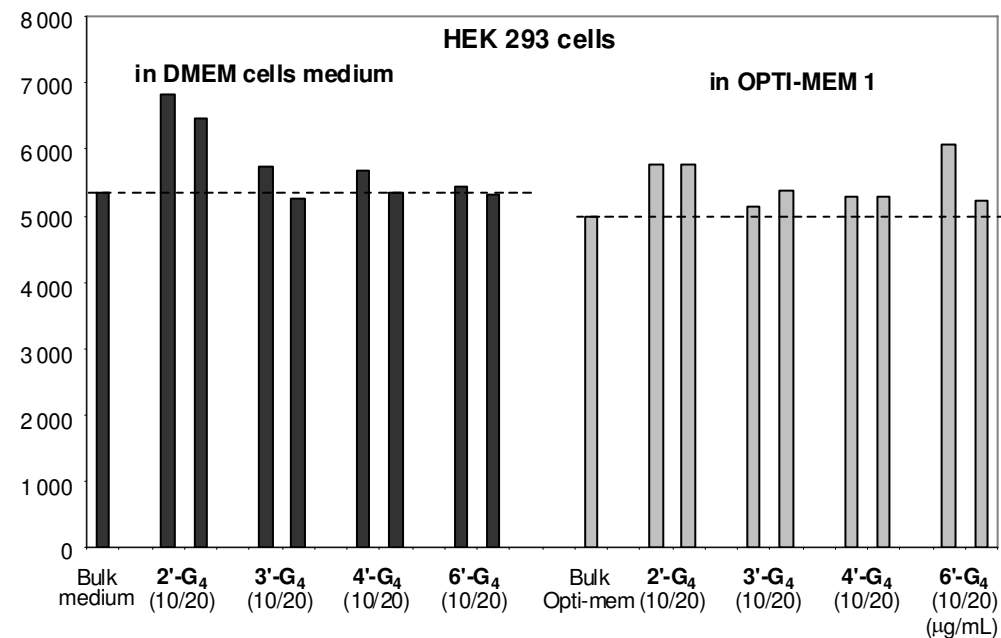
LB 1.000
GB 0.0
CX 35.00
CY 0.0
F1 79.611P
F2 3.878P
HZ/CM 175.300
PPM/CM 2.164
SR 4979.00



II. Transfection experiments

Transfection experiments

of GFP-coding plasmid in HEK 293, HeLa, and Huvec cells, using various dendrimers with a concentration of 10 and 20 $\mu\text{g/mL}$, detected by fluorescence. The dotted lines indicate the threshold for DMEM cells medium (left black bar) or OPTI-MEM medium (left grey bar) alone.



Chemical reaction used in MTT assay experiments.

