APPENDIX

I. Abbreviations and Acronyms

9-BBN	9-Borabicyclo[3.3.1]nonan
Bn	Benzyl
Boc	tert-Butoxycarbonyl
bp	Boiling Point
br	broad
BuLi	Butyllithium
Cbz	Benzyloxycarbonyl
CCA	α-Cyano-4-hydroxy-cinnamonic acid
COSY	Correlated Spectroscopy
d	doublet
Da	Dalton
DAB	Daminobutane
DAE	Diaminoethane
DCC	Dicyclohexylcarbodiimide
dd	doublet of doublet
DFG	Deutsche Forschungsgemeinschaft
DMF	*N*,*N*-dimethylformamide
DMSO	dimethylsulfoxyde
DNA	Desoxyribonucleic acid
DPTS	4-*N*,*N*-dimethylaminopyridinium tosylate
EA	elemental analysis
EDC	*N*-(3-Dimethylaminopropyl)-*N*'-ethylcarbodiimid Hydrochloride

EI	Electron ionization
EPR	Enhanced Permeability Retention
Et	Ethyl
eV	electron volt
FA	folic acid
FAB	fast atom bombardement
FBP	folate binding protein
FDA	Food and Drug Administration
Fig.	Figure
FITC	Fluoresceinisothiocyanate
FR	folate receptor
g	gram
G1, G2, G3…	(dendrimer or dendron) of generation one, two, three…
GPC	Gel-Permeations-Chromatographie
h	hour(s)
HBTU	O-(Benzotriazol-1-yl)-*N*,*N*,*N*',*N*'-teramethyluroniumtetrafluoroborat
HMBC	Heteronuclear Multiple Bond Connectivity
HMQC	Heteronuclear Multiple Quantum Connectivity
HOBt	1-Hydroxy-benzo[d][1,2,3]triazole
HSu	*N*-Hydroxy-succinimid
J	coupling constant
λ	wave length
LUMO	Lowest Unoccupied Molecular Orbital
m	multiplet
M	molar

MALDI-TOF	Matrix Assisted Laser Desorption Ionization – Time of Flight
Me	Methyl
MHz	Mega Hertz
mol	mole(s)
MRI	Magnetic resonance imaging
MS	mass spectrometry
NCT	Neutron capture therapy
NMR	Nuclear Magnetic Resonance
OEG	Oligo(ethylene glycol)
ONf	Nonaflate
OTf	Triflate
PAMAM	Poly(amidoamine)
Pd/ C	Palladium on Charcoal
PDT	photo dynamic treatment
PEG	Poly(ethylene glycol)
pH	potentia Hydrogenium
PPI	Poly(propylenimin)
ppm	parts per million
PPP	Poly(para-phenylene)
q	quartet
R_f	ratio of fronts
RP-HPLC	reversed-phase high-performance liquid chromatography
s	singlet
SCC	Suzuki cross coupling
SFB	Sonderforschungsbereich
SMCC	Suzuki-Miyaura cross-coupling

T	Temperature
t	triplet
TBTU	O-(Benzotriazol-1-yl)-*N*,*N*,*N*',*N*'-tetramethyluroniumtetrafluoroborat
TEA	Triethylamine
tert	tertiar
TFA	2,2,2-Trifluoroacetic acid
THF	Tetrahydrofurane
TLC	Thin layer Chromatography
TMS	Trimethylsilylchloride
TMSE	Trimethylsilylethanol
Trt	Trityl

II. Presentations (Posters)

- Makromolekulares Kolloquium 2004, Freiburg im Breisgau, Germany, 26.-28. February **2004**: S. Müller, S. Fuchs, T. Kapp, H. Otto, T. Schöneberg, R. Gust, A. D. Schlüter „Novel Dendrimers with Potential Application as Carriers for Anticancer-therapeutics".

- 7th International Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice, The Welsh School of Pharmacy, Cardiff University, Cardiff, UK, 07.-09. January **2004**: S. Müller, S. Fuchs, T. Kapp, H. Otto, R. Gust, A. D. Schlüter "Synthesis of New Sets of Multifunctionally Equipped Dendrimers with Potential Application as Carrier Molecules for Anticancer-therapeutics".

- SFC Eurochem, Toulouse, France, 08.-11. July **2002**: S. Müller, A. D. Schlüter "Synthesis of Dendrimer Drug-Conjugates for Antitumor Therapy".

- 5th International Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice, The Welsh School of Pharmacy, Cardiff University, Cardiff, UK, 03.-05. January **2002**: S. Fuchs, S. Müller, A. D. Schlüter, "Synthesis of Dendrimer-Drug-conjugates for Anti-Tumor Therapy".

- ScienceFair, Berlin, Germany, 12.-15. September **2001**: S. Fuchs, S. Müller, R. Gust, A. D. Schlüter, "Neue Trägermoleküle für Krebstherapeutika".

Further Attended Conferences

- Makromolekulares Kolloquium 2002, Freiburg im Breisgau, Germany, 21.-23. February **2002**.

- 3rd International Dendrimer Symposium, Berlin, Germany, 17.-20. September **2003**.

Presentations of the cooperating group

- ScienceFair, Berlin, Deutschland, 13.-15. Juni **2003**: T. Kapp, A. Dullin, S. Fuchs, S. Müller, A. D. Schlüter, R. Gust: “Neue Trägermoleküle für Krebstherapeutika”.

III. Versicherung

Hiermit versichere ich, Stephan Müller, geb. 23. November 1973, die vorliegende Arbeit selbständig und nur mit Hilfe der angegebenen Mittel verfasst zu haben.

IV. Curriculum Vitae

Personal

Name	Stephan Müller
Date of Birth	November 23rd, 1973
Place of Birth	Koblenz
Status of Marriage	married
Nationality	German

Education and Studies

since 02/2001	Dissertation in the group of Prof. Dr. A. D. Schlüter, Freie Universität Berlin
03/2000 - 11/2000	Diploma thesis in the group of Prof. Dr. J. Okuda, Inst. für Analytische und Anorganische Chemie, Johannes Gutenberg Universität Mainz: „Synthese von Titan- und Zirkonium-Komplexen mit atropisomerenreinen Salen-liganden als Initiatoren für die stereoselektive Ring-öffnungspolymerisation von racemischem β-Butyro-lacton“
09/1998 - 02/1999	Studies in “Polymer Chemistry” in the group of Prof. Dr. S. Kobayashi, Kyoto University, Kyoto, Japan: „Enzymatic Ringopening Polymerization of Lactones and Macrobislactones”
10/1997 - 02/2000	Main course of studies – Chemistry (Diplom), Johannes Gutenberg Universität Mainz
10/1995 – 09/1997	Basic course of studies – Chemistry (Diplom), Johannes Gutenberg Universität Mainz

06/1993	Abitur
08/1984 bis 06/1993	Eichendorff Gymnasium (grammar school), Koblenz
08/1981 bis 06/1984	Grundschule (elementary school), Koblenz

Employment

Since 03/2001	Assistant in the organic chemistry lab courses for Chemistry Studies, Freie Universität Berlin
01/1994 - 03/1995	Community Service (equivalent to military service) at Malteser Hilfsdienst Mainz