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DISSERTATION

**Adult stem cells derived from human goiters form spheres in
response to intense growth stimulation and differentiate
TSH-dependently into thyroid cells**

zur Erlangung des akademischen Grades
Doctor medicinae (Dr. Med.)

vorgelegt der Medizinischen Fakultät Charité –
Universitätsmedizin Berlin

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Datum der Promotion: 14 – Mar – 2008

To my parents

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Abbreviations

ABCG2	ATP-binding cassette transporter G2
bFGF	basic fibroblast growth factor
Bcrp	breast cancer resistance protein
BrdU	5-bromo-2'-deoxy-uridine
cDNA	complementary deoxyribonucleic acid
°C	degree Celsius
DMEM	Dulbecco's modified Eagle medium
DNA	deoxyribonucleic acid
dNTPs	deoxynucleotide triphosphates
EB	embryoid body
ECM	extracellular matrix
EDTA	ethylenediaminetetraacetic acid
EGF	epidermal growth factor
ES	embryonic stem cell
FACS	fluorescence-activated cell sorting
FCS	fetal calf serum
FITC	fluorescein isothiocyanate
FRTL5	Fisher rat thyroid cell line 5
×g	G-Force (unit of measurement of rotation speed of a centrifuge)
GFP	green fluorescent protein
HBSS	Hank's balanced salt solution
Hela	human cervix carcinoma cell line (initials of Henrietta Laks, the patient from whom the cell line originates)
HNF4	hepatocyte nuclear factor 4
MEM	non-essential amino acids
MgCl ₂	magnesium chloride
μM	micromole per liter solution (unit of concentration)
M-MLV-RT	murine Moloney leukemia virus reverse transcriptase
ml	Milliliter
mRNA	messenger ribonucleic acid

Abbreviations

mU/ml	milliunits per milliliter
µg	microgram
NIS	sodium iodide symporter
PAX8	paired box gene 8
PBS	phosphate buffered saline
PI	propidium iodide
RT	reverse transcription
PCR	polymerase chain reaction
PH	potentia hydrogenii (negative decimal logarithm of hydrogen-ion concentration)
SP	side population
Tg	thyroglobulin
TSH	thyroid stimulating hormone
TSHR	thyroid stimulating hormone receptor
rpm	revolutions per minute
TBE	Tris-borate EDTA
TBS	Tris buffered saline
TPO	thyroid peroxidase
TTF1	thyroid transcription factor 1
TTF2	thyroid transcription factor 2
UV	ultraviolet