

Novel Applications of Fluorescence Decay Analysis in Living Tissue at Single Cell Level

Neuartige Anwendungen der
Fluoreszenz-Zerfalls-Analyse
in lebendem Gewebe
auf Einzel-Zell-Niveau

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Kirstin Elgass

Tag der mündlichen Prüfung:

Dekan:

1. Berichterstatter:

2. Berichterstatter:

3. Berichterstatter:

02.08.2010

Prof. Dr. L. Wesemann

Prof. Dr. A. J. Meixner

Prof. Dr. K. Harter

Prof. Dr. J. Enderlein

to my parents

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List of Abbreviations

a.u.	arbitrary units
AHK1	<i>Arabidopsis</i> Histidine Kinase 1
AF	Autofluorescence
AFP	Autofluorescent Protein
APD	Avalanche Photodiode
ATP	Adenosine Triphosphate
BAK1	BRI1-associated Receptor Kinase
BFA	Brefeldin A
BFP	Blue Fluorescent Protein
BL	Brassinolide
BR	Brassinosteroide
BRI1	Brassinosteroide Insensitive Receptor 1
BS	Bundle Sheath Cell
χ^2	Error Value
C	concentration
CCD	Charge-coupled Device
CFP	Cyan Fluorescent Protein
CILA	Cell Imaging by Lifetime Analysis
CO	Cortical Cell
CSSM	Confocal Stage Scanning Microscope
CW	Cell Wall
CWT	Cell Wall Thickness
DNA	Desoxyribonucleic Acid
DsRed	Discosoma Red
ε	Extinction Coefficient
E	Enhancement Factor
E_m	Plasma membrane potential
EB	ER Body
eBFP	Enhanced BFP
eGFP	Enhanced GFP
EP	Epidermal Cell
ER	Endoplasmatic Reticulum
ET	Energy Transfer
eYFP	Enhanced YFP
Fc	Fusiccocin
FCS	Fluorescence Correlation Spectroscopy
FExS	Fluorescence Excitation Spectroscopy
FIDSAM	Fluorescence Intensity Decay Shape Analysis Microscopy
FLIM	Fluorescence Lifetime Imaging Microscopy

List of Abbreviations

FRET	Foerster Resonance Energy Transfer
FWHM	Full Width at Half Maximum
GFP	Green Fluorescent Protein
h	Hours
HBDI	4'-Hydroxybenzylidene-2,3-Dimethylimidazolinone
HeLa	Cervical cancer cells taken from Henrietta Lacks
HOMO	Highest Occupied Molecular Orbital
HVS	High voltage solution
I	Intensity
IRF	Instrument Response Function
ISC	Inter System Crossing
K	Kelvin
Kbp	Kilo Base Pairs
LB	Left Border Sequence
LHC	Light Harvesting Complex
LT16b	Low Temperature Induced Protein 6b
LUMO	Lowest Unoccupied Molecular Orbital
LVS	Low voltage solution
M	Mitochondrion
M	Mesophyll Cell
Min	Minutes
μm	Micrometer
MHz	Mega Hertz
mRFP	monomeric Red Fluorescent Protein
n	number of measurements
N	Number of molecules in the excited state
N.A.	Numerical Aperture
nm	Nanometer
ocFL(I)M	one-chromophore FL(I)M
<i>oV</i>	<i>ortho</i> -Vanadate
p	Probability
PALM	Photo Activated Localisation Microscopy
P-ATPase	Plasma Membrane ATPase
PD	Plasmadesmon
PM	Plasma Membrane
ps	Picoseconds
PS	Photosystem
PSF	Point Spread Function
QME	Quantum Mechanical Emitter
RB	Right Border Sequence
S/B	Signal-to-Background
S/N	Signal-to-Noise

List of Abbreviations

SERS	Surface Enhanced Raman Scattering
sm	single molecule
σ	Standard Deviation
STED	Stimulated Emission Depletion Microscopy
STORM	Stochastic Optical Reconstruction Microscopy
τ	Excited state lifetime
t	Time
TCSPC	Time Correlated Single Photon Counting
T-DNA	Transfer-DNA
TE	Thermal Equilibration
TEM	Transmission Electron Microscopy
TGN	<i>trans</i> -Golgi Network
Ti	Tumor Inducing
V	Vacuole
Var	Variance
vir	Virulence
ω	Full Width at Half Maximum
wt	Wild Type
YFP	Yellow Fluorescent Protein