

Abbreviations

B, bathorhodopsin
BphP, bacteriophytochrome photoreceptor
BR, bacteriorhodopsin
BSI, blue-shifted intermediate
BV, biliverdin IX-a
CCA, complementary chromatic adaption
CD, circular dichroism spectroscopy
cDNA, complementary DNA
cFR, constant far-red light
Chop1, channel opsin 1
Cop, chlamyopsin
CpH1, cyanobacterial phytochrome 1
Cry (or CRY), cryptochrome
E-PYP, PYP from *Ectothiorhodospira halophila*
FL, full length
FMN, flavin mononucleotide
FR, far-red light
FTIR, Fourier-transform infrared
FTR, Fourier-transform Raman spectroscopy
GFP, green fluorescent protein
GPCR, G-protein-coupled receptor
Gtbc, bc heterodimer subunit of Gt
Gt α , α subunit of Gt
Gt, transducin (retinal G-protein)
GUS, β -glucuronidase
HIR, high irradiance response
HOOP, hydrogen out-of-plane
HR, halorhodopsin
Htp, halobacterial transducer protein
L, lumirhodopsin
LADS, lifetime-associated difference spectra
LFR, low fluence response
MI, metarhodopsin I
MII, metarhodopsin II
NMR, nuclear magnetic resonance spectroscopy
P ϕ B, phytochromobilin
PAS, photoacoustic spectroscopy
PBD, photothermal beam deflection
PC, phosphatidylcholine
PCB, phycocyanobilin
PE, phosphatidylethanolamine
PEB, phycoerythrobilin

PEC, phycoerythrocyanin
Pfr (or P_{fr}), far-red-adsorbing state of phytochrome
Phot (or PHOT), phototropin
Phy (or PHY), phytochrome
Pr (or P_r), red-adsorbing state of phytochrome
PS, phosphatidylserine
PSB, protonated Schiff base
PYP, photoactive yellow protein
R*, light-activated rhodopsin
R, rhodopsin
RK, rhodopsin kinase
ROS, rod outer segment
RPE, retinal pigment epithelial cells
SB, Schiff base
SDM, site-directed mutagenesis
SPR, surface plasmon resonance spectroscopy
SR, sensory rhodopsin
TG, thermal grating
VLIR, very low fluence response
Vop, volvoxopin