Supporting Information for

Excited State Dynamics of the Photoconvertible Fluorescent Protein Kaede Revealed by Ultrafast Spectroscopy

Eduard Fron, Michel Sliwa, Virgile Adam, Jan Michiels, Susana Rocha, Peter Dedecker, Johan Hofkens, Hideaki Mizuno

aLaboratory of Photochemistry and Spectroscopy, Department of Chemistry, Katholieke Universiteit Leuven, Celestijnenlaan 200F, 3001 Heverlee, Belgium;
bLaboratoire de Spectrochimie Infrarouge et Raman, Université Lille Nord de France, Lille 1, LASIR, F-59655 Villeneuve d’Ascq, CNRS-UMR 8516, France;
cUniversité Grenoble Alpes, Institut de Biologie Structurale (IBS), F-38027 Grenoble, France; CNRS, IBS, F-38027 Grenoble, France; Centre National de la Recherche Scientifique (CNRS), IRTS, CNRS/CEA/INRA/Université Grenoble Alpes, Grenoble, 38054, France;
dCentre of Microbial and Plant Genetics, Faculty of Bioscience Engineering, Katholieke Universiteit Leuven, Kasteelpark Arenberg 20, 3001 Heverlee, Belgium;
eLaboratory of Biomolecular Network Dynamics, Department of Chemistry, Katholieke Universiteit Leuven, Celestijnenlaan 200G, 3001 Heverlee, Belgium;

Results

Figure S1. Decay traces and the corresponding fits obtained for green Kaede, pH 7.4 by femtosecond fluorescence up-conversion technique in a 50-ps time window, (\(\lambda_{exc}=495\) nm, \(\lambda_{det}=510-650\) nm);
Figure S2. A: Decay traces and the corresponding fits obtained by femtosecond transient absorption technique in a 50-ps time window, (λ_{exc}=495 nm, λ_{det}=510-550 nm, pH 7.4); B: Amplitude-to-wavelength dependence of the decay times.
Figure S3. Decay traces and the corresponding fits obtained for partially red photoconverted Kaede, pH 7.4 by femtosecond fluorescence up-conversion technique in a 50- ps time window, ($\lambda_{exc}=395$ nm, $\lambda_{det}=450-610$ nm)
Figure S4. A: Normalized fluorescence emission spectrum ($\lambda_{\text{exc}}=488$ nm) of the partially photoconverted Kaede, pH 7.4 occurred during SPT experiments. B: Amplitude-to-wavelength dependence of the decay times obtained for partially photoconverted Kaede by SPT technique, ($\lambda_{\text{exc}}=375$ nm, $\lambda_{\text{det}}=490-650$ nm);
Figure S5. Fluorescence emission decay ($\lambda_{exc}=488$ nm, black), IRF (blue), corresponding fit (red), autocorrelation and residuals plots of the green **Kaede**, pH 7.4 recorded in SPT experiments; $\chi^2=1.02$.

Figure S6. Decay trace of green **Kaede** (pH 7.4) in D$_2$O buffer obtained by femtosecond up-conversion technique in 200 ps time window, $\lambda_{exc}=395$ nm, $\lambda_{det}=530$ nm.