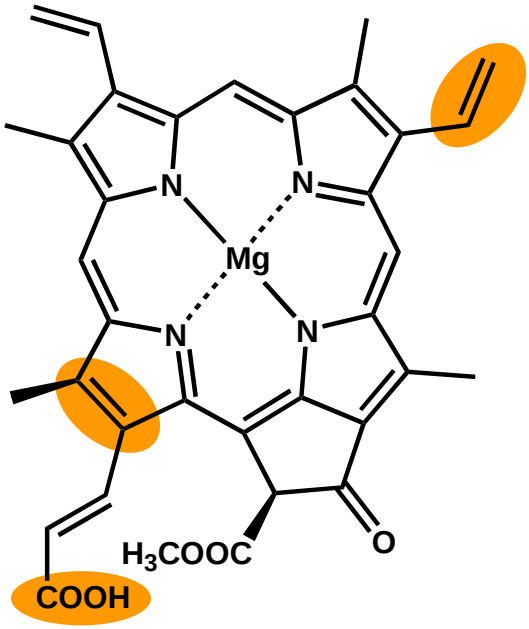
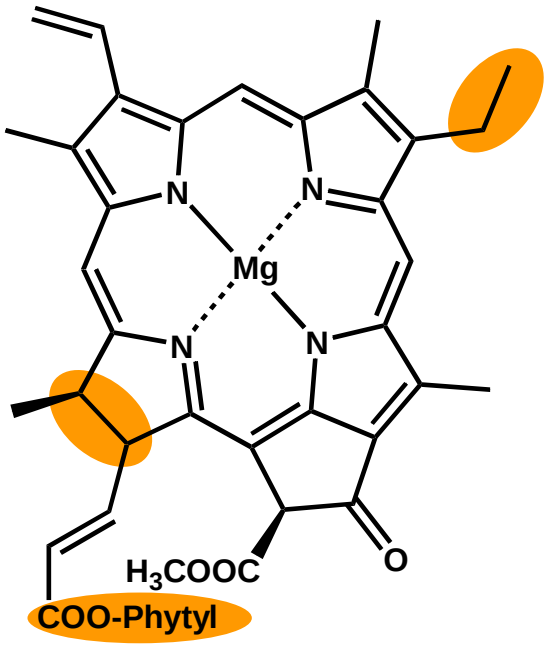
Supporting Information

Figure S1. Comparison of structures of Chl-c2 and Chl-a. The structural differences are highlighted.



Chl-c2



Chl-a

Figure S2. Raw data kinetics (solid lines) and fits resulting from the target analysis (dashed lines) for the LHC complex excited at 640 nm. The chosen probing wavelengths match the maxima of the bleaching bands that correspond to the individual species resulting from the target analysis shown in Figure 7. Note that the time axis is linear from -1 to 1 ps relative to the maximum of the instrument response, and logarithmic thereafter.

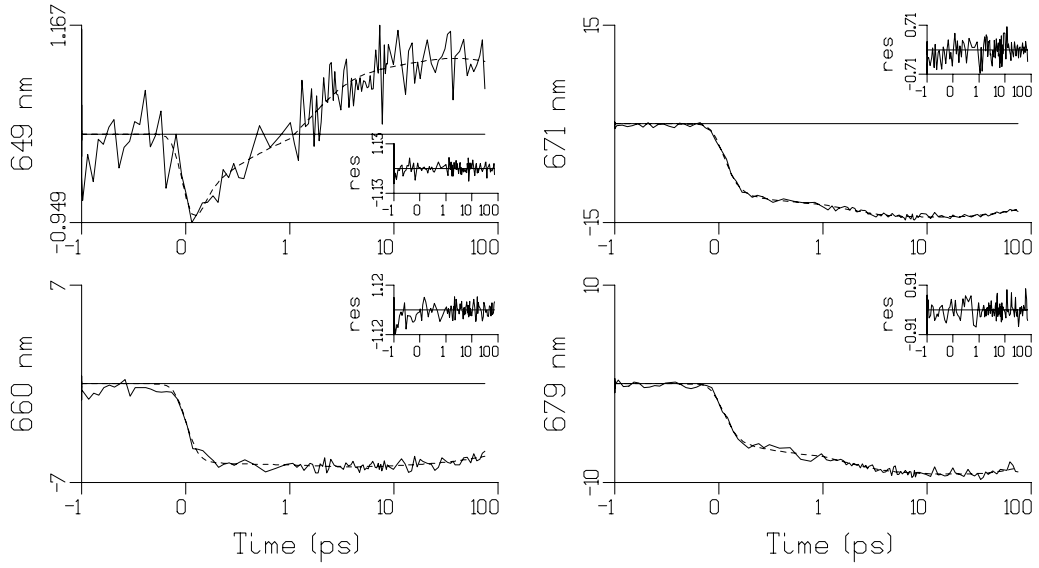


Figure S3. Raw data kinetics (solid lines) and fits resulting from the target analysis (dashed lines) for the LHC complex excited at 540 nm (red) and 500 nm (black). The chosen probing wavelengths correspond to the spectral band positions of individual species resulting from the target analysis shown in Figure 8. Note that the time axis is linear from -1 to 1 ps relative to the maximum of the instrument response, and logarithmic thereafter.

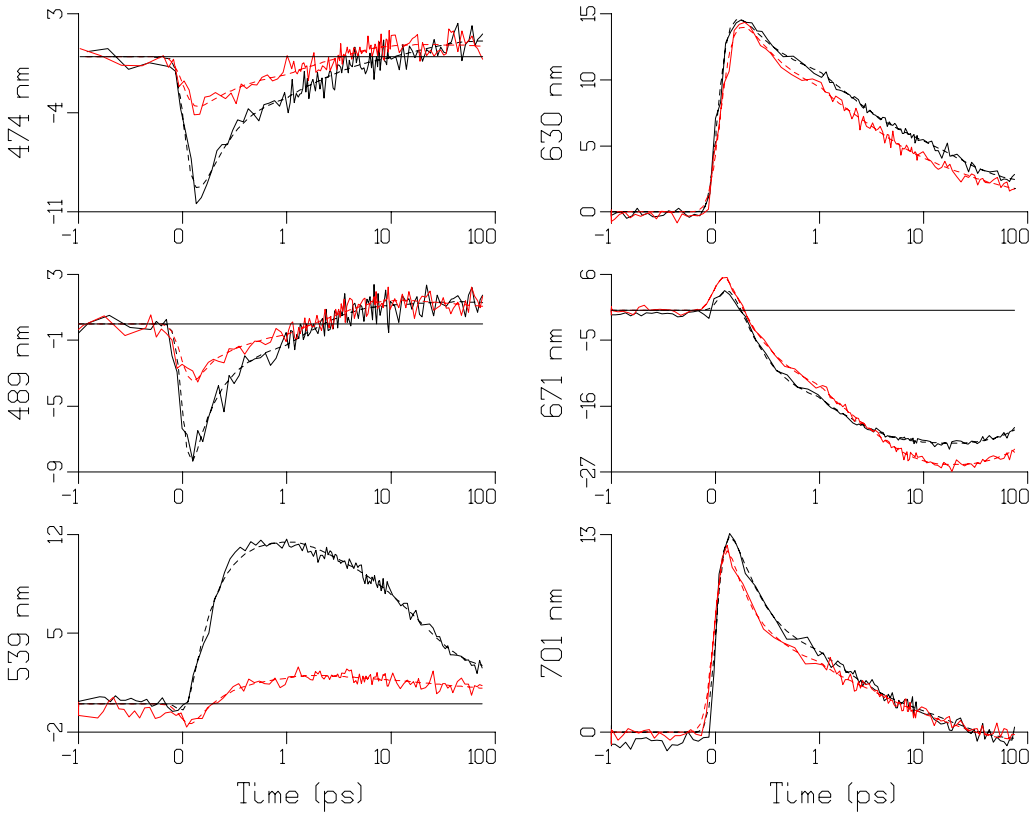
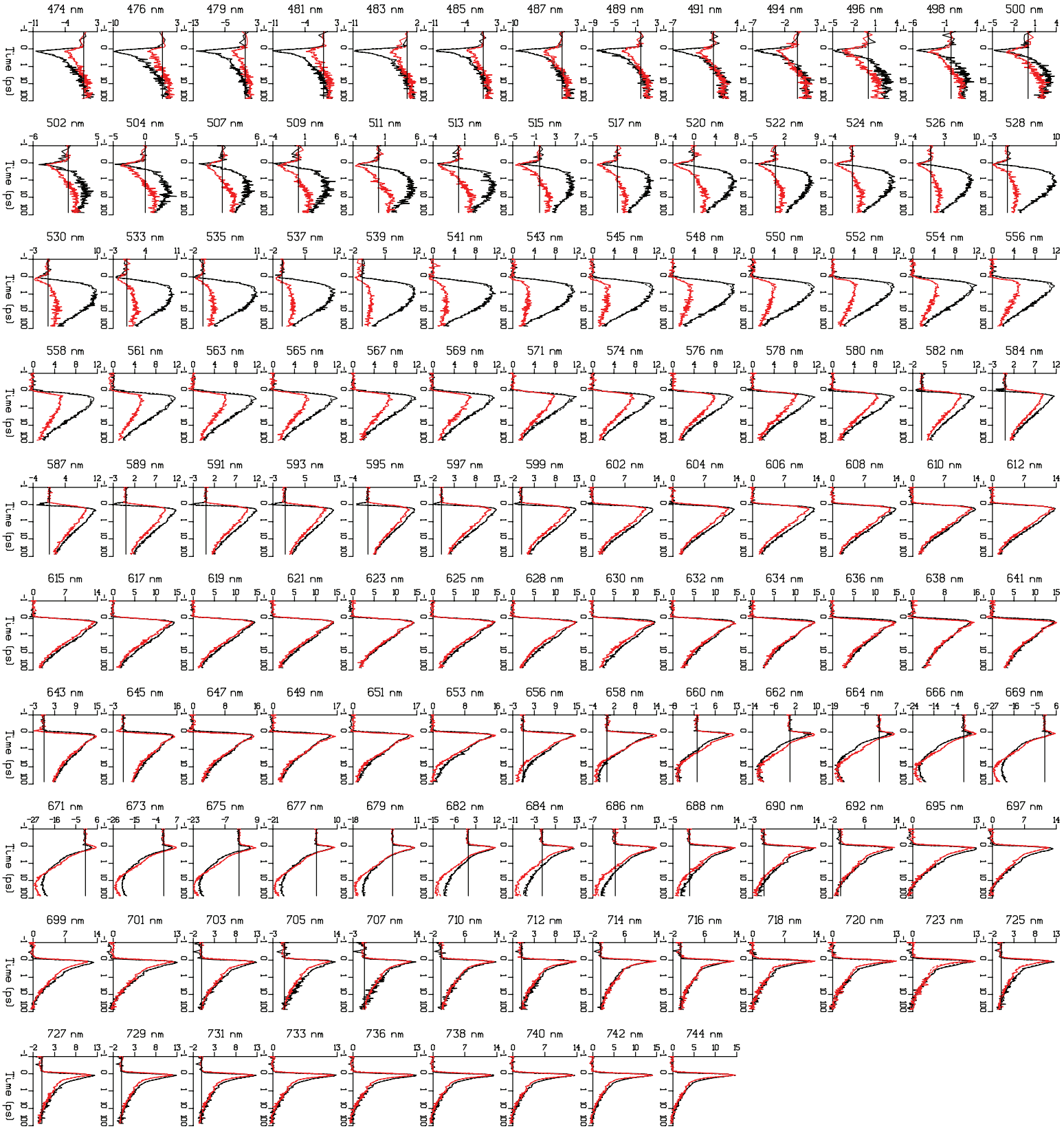


Figure S4 (next page). Raw data and fits at all wavelengths used for the target analysis. Raw data kinetics (solid lines) and fits resulting from the target analysis (dashed lines) are shown for the LHC complex excited at 540 nm (red) and 500 nm (black). The time axis is linear from -1 to 1 ps relative to the maximum of the instrument response, and logarithmic thereafter.


474 nm
476 nm
479 nm
481 nm
483 nm
485 nm
487 nm
489 nm
491 nm
494 nm
496 nm
498 nm
500 nm
502 nm
504 nm
507 nm
509 nm
511 nm
513 nm
515 nm
517 nm
520 nm
522 nm
524 nm
526 nm
528 nm
530 nm
533 nm
535 nm
537 nm
539 nm
541 nm
543 nm
545 nm
548 nm
550 nm
552 nm
554 nm
556 nm
558 nm
561 nm
563 nm
565 nm
567 nm
569 nm
571 nm
574 nm
576 nm
578 nm
580 nm
582 nm
584 nm
587 nm
589 nm
591 nm
593 nm
595 nm
597 nm
599 nm
602 nm
604 nm
606 nm
608 nm
610 nm
612 nm
615 nm
617 nm
619 nm
621 nm
623 nm
625 nm
628 nm
630 nm
632 nm
634 nm
636 nm
638 nm
641 nm
643 nm
645 nm
647 nm
649 nm
651 nm
653 nm
656 nm
658 nm
660 nm
662 nm
664 nm
666 nm
669 nm
671 nm
673 nm
675 nm
677 nm
679 nm
682 nm
684 nm
686 nm
688 nm
690 nm
692 nm
695 nm
697 nm
699 nm
701 nm
703 nm
705 nm
707 nm
710 nm
712 nm
714 nm
716 nm
718 nm
720 nm
723 nm
725 nm
727 nm
729 nm
731 nm
733 nm
736 nm
738 nm
740 nm
742 nm
744 nm
Time (ps)