

Figure S1:

SRII_k minus SRII difference spectra of the wild type (a), T204A (b), T204S (c), T204C (d), Y174F (e), T79A (f) and N105D (g), and BR_k minus BR difference spectra of the wild type (h) and BR-T (i) in the 1790-810 cm⁻¹ region. The chromophore molecule is the unlabeled (Left) and C₁₄-D labeled (Right) retinal. One division of the y-axis corresponds to 0.01 absorbance unit.

(Left) Vertical amplitudes are normalized by the bands of Asn105 at 1704 (-)/1700(+) cm⁻¹ for (a)-(f), while those in (g)-(i) were normalized to the wild type SRII (a) by the C-C stretch at 1204 (-) cm⁻¹.

(Right) Vertical amplitudes are normalized by the bands of Asn105 at 1704 (-)/1700 (+) cm⁻¹ for (a)-(f). On the other hand, spectral comparison of the C₁₄-D labeled retinal is not as simple for N105D SRII (g), BR (h) and BR-T (i). We normalized these spectra to those of unlabeled retinal (Left) by use of the band of Asp105 at 1743 (-)/1738(+) cm⁻¹ (g), amide I band at 1639 (-)/1623 (+) cm⁻¹ (h) and amide I band at 1640 (-)/1623 (+) cm⁻¹ (i).

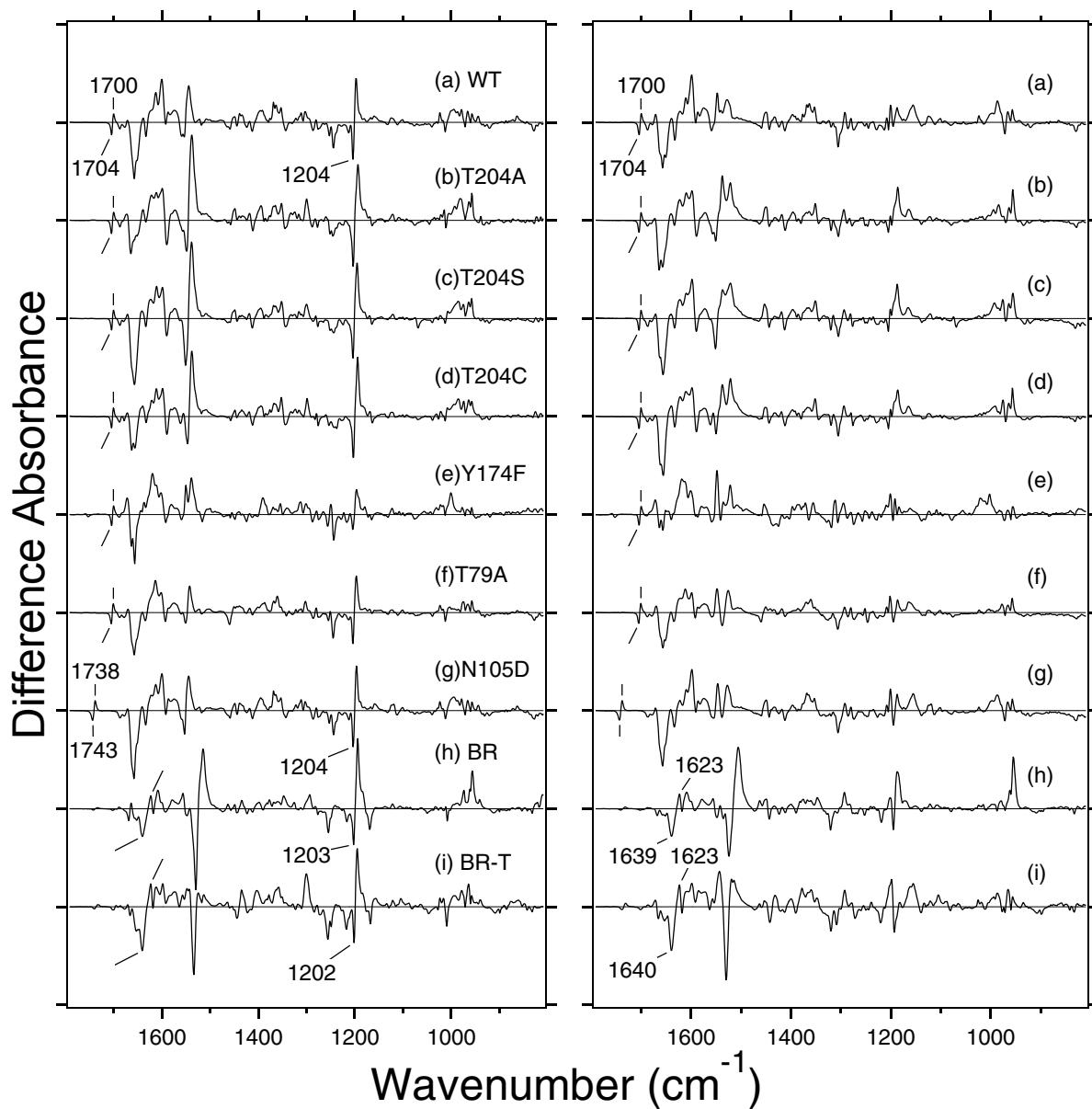


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