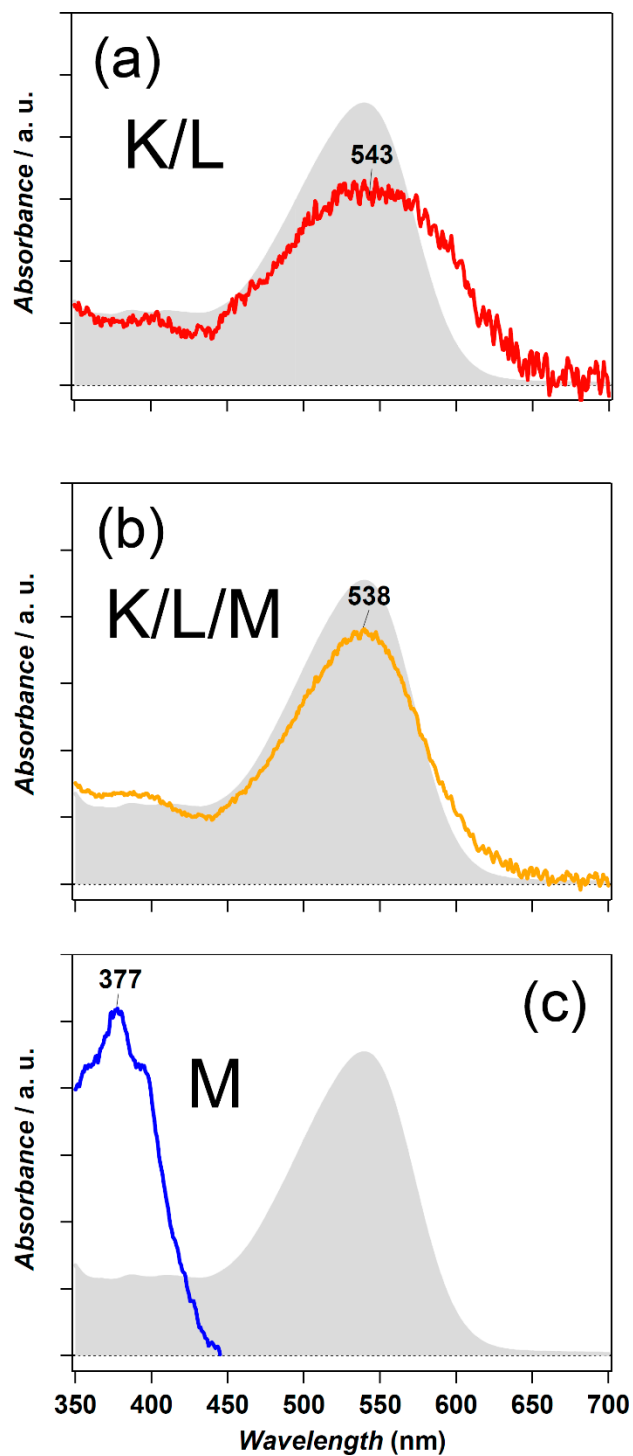
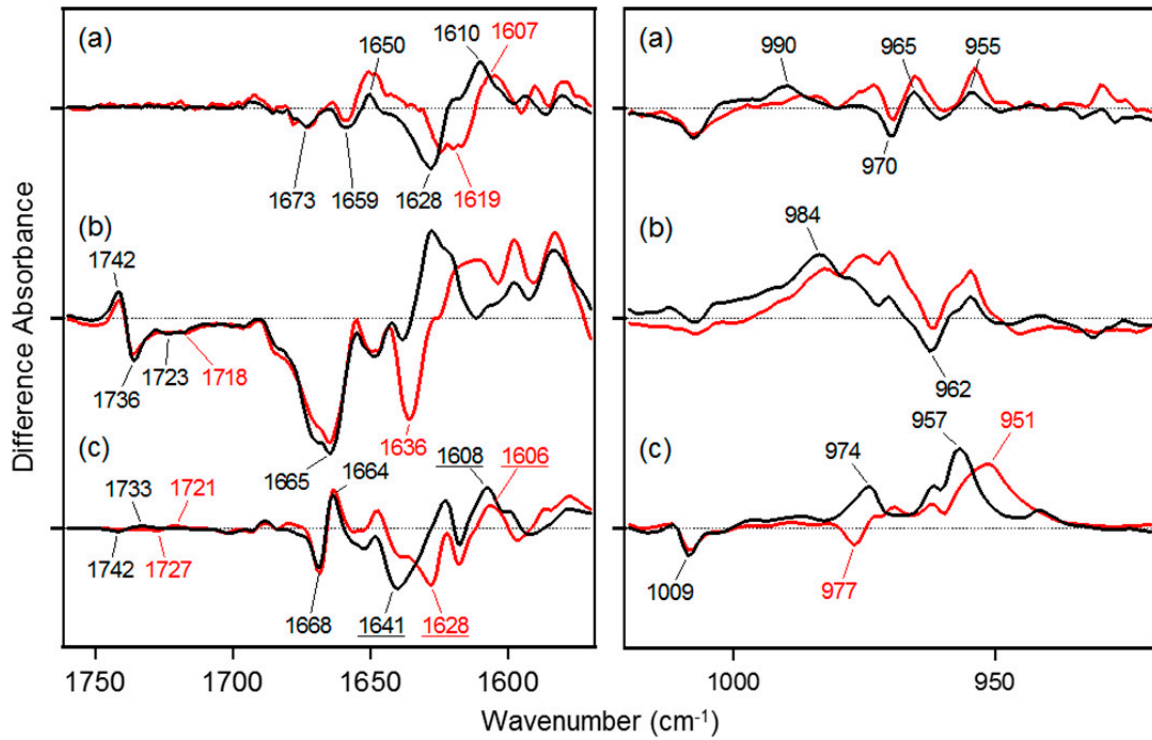


Supplementary Figure S1. Amino acid sequences of BR, *GtCCR1*, *GtCCR2*, *GtCCR3*, and *GtCCR4*. The numbering scheme corresponds to the position in BR.



Supplementary Figure S2. Calculated absorption spectra of each intermediate shown in the scheme in Figure 2c.



Supplementary Figure S3. Difference FTIR spectra of *GtCCR4* (a), *C1C2* (b), and *BR* (c) in the 1760-1570 and 1020-920 cm⁻¹ region. These figures are enlarged from Figure 4.

Residue number of BR	20	49	50	53	83	85	86	89	90	93	118	119	122	138	141	142	145	182	185	186	189	208	212	213	215	216	217
Residue number of GtCCR4	46	83	84	87	114	116	117	120	121	124	142	143	150	166	169	170	173	214	217	218	221	238	242	243	245	246	247
Residue number of C1C2	98	125	126	129	160	162	163	166	167	170	198	199	202	217	220	221	224	262	265	266	269	288	292	293	295	296	297
BR	M	V	P	A	Y	D	W	T	T	L	M	I	G	W	S	T	M	W	Y	P	W	F	D	V	A	K	V
GtCCR4	L	V	N	A	Y	D	Y	T	C	L	L	F	C	F	G	C	F	W	Y	P	W	T	D	V	A	K	S
C1C2	T	V	A	E	Y	E	W	T	C	I	T	I	G	F	G	L	G	W	F	P	F	H	D	L	S	K	N

Supplementary Figure S4. Twenty seven residues within 5 Å from the chromophore in the structure of BR, and the corresponding residues in *GtCCR4* and C1C2.