

# A Conserved Interaction with the Chromophore of Fluorescent Proteins

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**Table S1.** Data used in Figures 2A and 4A.

PDB Code	$d$ (Å)	$\theta$ (°)	$\xi$ (°)	PDB Code	$d$ (Å)	$\theta$ (°)	$\xi$ (°)
1OXD	2.86	94.49	140.65	3DQE	2.84	93.45	137.34
1OXE	2.85	94.51	140.75	3DQF	2.79	92.35	139.09
2DUG	3.00	104.57	149.78	3DQH	2.82	94.79	139.68
1Q4A	2.92	100.30	143.78	2B3P	2.89	99.14	141.66
1Q4B	3.00	100.38	144.83	2DUH	3.01	98.63	145.59
2ZO6	2.92	104.92	145.55	2DUE	3.02	95.15	144.30
1Q4E	2.94	99.03	144.15	2DUI	3.03	97.92	142.34
2HJO	2.90	97.94	142.44	1KYS	2.92	94.97	143.38
2O24	2.85	96.21	142.96	3CBE	2.90	99.18	147.94
2HRS	2.86	97.55	142.18	3CD1	2.90	99.46	145.02
2H6V	2.88	94.51	141.78	2GW3	2.88	101.73	148.76
2FWQ	2.88	97.12	140.83	2GW3	2.87	101.79	149.37
3I19	2.83	93.69	141.33	3CB9	2.92	100.07	146.17
3DQC	2.69	89.69	143.13	1KYP	3.05	94.84	144.77
2G6E	2.80	90.79	146.50	3EVP	2.91	97.81	143.83
3DQD	2.78	94.24	140.18	2WSN	2.87	94.97	140.28
1YJF	2.96	95.50	145.20	2WSO	2.85	96.70	142.19
3DQI	2.73	94.80	143.66	2QT2	2.93	99.68	140.76
3DQL	2.72	96.07	146.71	3LA1	2.90	94.04	142.71
3DQK	2.91	93.02	141.41	2AI5	2.94	93.75	140.40
2HCG	2.79	97.26	150.82	2AWK	2.95	95.90	139.15
3DQ9	2.78	95.11	139.53	2QZ0	2.97	101.97	141.27
3DQM	2.78	93.53	143.00	2WUR	2.92	97.09	142.28
3DQU	2.89	91.27	139.39	2OTE	2.91	99.97	155.80
2HQZ	2.87	98.69	142.85	2OTE	2.89	100.11	158.24
3DQ4	2.83	92.55	141.08	3LVC	3.16	98.37	146.95
3DQ7	2.87	95.21	141.64	3LVC	3.15	97.22	146.13
3DQN	2.81	91.53	139.20	1XMZ	3.16	97.50	126.49
3DQA	2.80	95.87	144.53	1XMZ	3.12	97.75	129.82

**Table S2.** Data used in Figures 2B and 4B.

PDB Code	$d$ (Å)	$\theta$ (°)	$\xi$ (°)	PDB Code	$d$ (Å)	$\theta$ (°)	$\xi$ (°)
1RMM	2.85	98.98	144.73	3GJ1	2.82	94.18	140.88
1OXF	2.83	91.85	139.87	3GJ1	2.92	97.74	139.71
1RMO	2.88	94.28	139.42	3GJ1	3.00	94.54	140.33
1QYQ	2.90	85.55	143.30	3GJ1	2.90	95.88	145.48
1JBY	2.79	102.82	150.09	1HCJ	2.99	98.95	141.35
1EMA	2.80	107.22	141.47	1HCJ	3.00	96.13	142.76
1Q4D	2.98	100.01	144.83	1HCJ	2.99	96.30	140.41
2ZO7	2.94	105.58	145.13	1HCJ	2.90	93.39	141.38
1Q4C	2.97	101.52	146.01	2QLE	3.06	101.76	144.61
2DUF	2.90	101.91	146.58	2QLE	2.96	97.53	140.35
2HPW	3.02	97.36	135.50	2QLE	2.98	99.72	145.69
2HGD	2.92	96.89	143.73	2QLE	3.04	94.40	142.19
1JBZ	2.91	102.41	143.40	1W7S	2.96	99.61	141.52
3GEX	2.79	92.43	140.22	1W7S	2.95	99.79	142.70
2O29	2.88	94.81	145.04	1W7S	2.92	99.74	145.48
1Q73	2.95	99.53	144.26	1W7S	2.93	99.74	142.54
2O2B	2.82	96.06	144.13	1W7T	2.96	97.67	140.81
2H9W	2.88	97.08	141.85	1W7T	2.98	99.53	142.25
2H9W	3.03	95.41	144.01	1W7T	2.90	97.62	143.26
1S6Z	2.85	85.53	150.85	1W7T	2.96	98.79	143.15
2AWM	2.88	92.92	133.54	1W7U	2.97	96.81	142.81
3DQ1	2.80	93.36	143.16	1W7U	2.94	97.55	142.63
3DPW	2.95	93.32	136.50	1W7U	2.98	99.65	142.59
2AWL	3.03	92.86	135.13	1W7U	2.99	97.32	142.31
1Z1Q	2.95	97.79	139.94	2IOV	2.82	99.39	143.97
3DPZ	2.84	95.11	138.96	2IOV	2.93	99.45	141.26
3DQ5	2.86	95.35	140.45	2IOV	2.86	100.59	146.80
3DQ2	2.90	94.03	140.81	2IOV	2.84	99.14	145.33
3DQ6	2.86	94.99	138.13	2VVH	2.77	99.09	149.09
3DQ8	2.66	101.76	146.52	2VVH	2.75	100.38	149.45
1YJ2	2.85	92.75	143.91	2VVH	2.83	100.22	146.41
3DQJ	2.73	95.90	143.22	2VVH	2.78	100.14	148.96
3DQO	2.79	91.20	137.36	2POX	2.93	96.80	139.78
3DQ3	2.88	94.84	138.86	2POX	2.87	95.40	142.16
3DPX	2.90	94.52	141.99	2POX	2.85	94.92	142.57
2QU1	2.79	95.12	143.10	2POX	2.89	97.38	142.76
3G9A	2.95	99.46	142.75	2IE2	2.91	101.81	145.38
3EK7	2.97	96.24	143.74	2IE2	2.91	102.76	147.31
2OTB	2.80	104.52	155.71	2IE2	2.90	102.07	143.72
2OTB	2.79	106.77	159.72	2IE2	2.93	102.08	146.13
2AHA	2.83	99.64	141.68	2IE2	2.87	103.53	149.58
2AHA	2.92	104.99	149.17	2IE2	2.88	101.99	147.26
2DD7	3.12	96.11	145.31	3LVA	2.91	97.16	143.73
2DD7	3.10	96.85	146.57	3LVA	2.97	96.42	141.33

2QLG	2.81	108.76	154.31	2OKW	2.92	100.90	146.39
2QLG	2.79	108.57	159.26	2OKW	3.02	103.44	146.79
1GFL	2.98	101.84	145.12	2OKW	2.95	106.11	148.14
1GFL	2.92	103.85	145.98	2OKW	3.01	100.54	144.28
1KYR	2.92	94.09	142.96	2OKW	2.99	102.56	145.49
1QYF	2.99	94.91	141.84	2OKW	2.97	103.90	148.00
3CD9	2.91	99.63	143.98	2RH7	2.91	97.00	141.26
2QRF	3.19	98.41	145.25	2RH7	3.11	103.07	140.22
2DDC	2.87	98.97	144.18	2RH7	3.01	102.82	146.44
2DDC	2.86	97.81	143.00	2RH7	2.87	96.18	143.29
1XSS	2.83	101.22	144.20	2ICR	2.90	107.33	140.87
1XSS	2.82	102.17	145.60	2ICR	2.96	109.40	143.60
2DDD	2.83	98.81	147.90	2ICR	2.98	106.12	141.05
2DDD	2.83	99.46	147.67	2ICR	3.00	108.74	143.51
2GW4	2.90	100.29	148.77	2G6Y	3.09	96.32	134.64
2GW4	2.89	100.30	148.45	2G6Y	3.08	95.40	133.65
3AI4	2.91	94.54	141.85	2G6Y	3.08	96.98	133.02
1JC1	2.77	95.74	134.55	2G6Y	3.10	93.76	131.67
1JC1	3.02	97.75	134.23	2C9I	2.94	103.22	151.29
1JC1	2.94	103.05	147.83	2C9I	2.96	105.53	152.14
1H6R	2.94	97.09	137.62	2C9I	2.92	105.75	154.68
1H6R	2.96	98.18	139.68	2C9I	2.99	104.57	154.30
1H6R	2.90	96.75	138.79	2C9I	3.15	110.89	154.22
3EVU	3.01	94.85	142.78	2C9I	2.89	102.89	152.86
3LVD	3.02	99.28	145.28	2C9I	3.01	108.47	154.32
3LVD	2.98	98.48	142.44	2C9I	2.92	103.37	154.44
3GJ2	2.93	95.65	141.39	2GX2	2.82	103.39	149.16
3GJ2	2.73	94.94	142.33	2GX2	2.78	101.23	147.82
3GJ2	3.02	94.35	138.68	2GX2	2.86	99.75	142.03
3GJ2	2.87	96.54	139.90	2GX2	2.80	102.36	148.60
2GX0	2.84	99.33	144.06	2GX2	2.87	102.73	144.52
2GX0	2.83	99.03	144.13	2GX2	2.85	102.14	146.43
2GX0	2.78	96.93	144.20	2GX2	2.78	102.56	148.05
2GX0	2.79	98.92	146.60	2GX2	2.83	101.95	145.18
1ZUX	2.89	105.92	153.93	2GX2	2.87	100.80	141.12
1ZUX	2.85	104.32	151.01	2GX2	2.82	104.57	150.39
1ZUX	2.86	103.16	149.62	2GX2	2.84	102.30	147.29
1ZUX	2.89	104.66	151.39	2GX2	2.83	103.14	149.29

**Table S3.** Data used in Figures 2C and 4C.

PDB Code	$d$ (Å)	$\theta$ (°)	$\xi$ (°)	PDB Code	$d$ (Å)	$\theta$ (°)	$\xi$ (°)
1EMG	2.85	98.78	137.43	2G6X	3.15	101.39	139.25
1BFP	2.93	107.89	140.88	2G6X	3.16	100.60	137.19
1MYW	2.96	94.95	135.97	1EMC	3.11	90.20	132.82
1EMB	2.97	107.05	140.27	1EMC	2.79	95.05	139.59
2EMN	2.91	88.15	147.30	1EMC	2.98	98.51	132.72
1C4F	2.80	103.05	146.80	1EMC	3.03	94.07	137.24
2HGY	3.01	97.97	149.08	2DD9	3.05	94.89	144.65
1EMM	2.97	86.18	146.62	2DD9	3.05	93.02	143.05
1HUY	2.97	95.91	137.08	2DD9	3.03	93.84	145.30
1EML	2.86	99.00	146.66	2DD9	2.98	93.69	147.76
1EMK	3.04	90.81	140.94	1B9C	2.89	99.12	137.89
2G16	2.99	105.00	151.41	1B9C	2.85	96.20	140.51
2Q57	2.87	99.46	145.53	1B9C	2.88	95.08	126.90
1F09	2.75	108.20	136.51	1B9C	2.91	107.96	142.32
1Z1P	2.93	94.91	144.75	2B3Q	2.88	96.95	142.05
1F0B	2.75	106.13	140.92	2B3Q	2.89	97.82	142.83
1EMF	3.00	89.21	148.01	2B3Q	3.04	98.92	139.57
1RRX	2.96	97.82	143.12	2B3Q	2.90	98.44	142.76
2Q6P	2.88	99.17	144.37	2BTJ	2.80	98.07	147.24
1MOU	2.93	104.20	148.98	2BTJ	2.84	98.19	147.54
2EMD	3.04	96.22	140.90	2BTJ	2.81	99.83	149.22
3EKH	2.95	97.13	145.81	2BTJ	2.82	97.41	146.96
2OKY	3.11	97.81	135.77	2VVI	2.79	99.97	156.21
2OKY	3.18	99.28	141.86	2VVI	2.76	98.56	151.28
2AH8	2.88	106.63	148.44	2VVI	2.75	94.81	147.29
2AH8	3.06	102.13	136.74	2VVI	2.76	98.50	154.24
2OJK	2.92	100.10	143.23	2VVJ	2.87	94.97	146.33
2OJK	2.93	103.69	141.96	2VVJ	2.85	96.00	145.71
2PXS	2.97	96.90	133.83	2VVJ	2.85	96.64	145.94
2PXS	3.07	105.56	137.81	2VVJ	2.88	97.48	147.21
2PXS	2.87	98.89	138.79	2G3O	3.07	95.57	132.93
2PXS	3.00	105.27	139.90	2G3O	3.13	86.12	122.72
1JC0	3.05	98.76	134.13	2G3O	3.19	92.33	127.36
1JC0	2.96	104.45	147.04	2G3O	3.21	93.70	124.75
1JC0	2.92	110.87	152.19	2G3O	3.17	95.30	128.63
2PXW	3.01	103.51	139.54	2G3O	3.16	93.80	123.62
2PXW	3.03	100.69	136.20	2VZX	2.87	101.22	147.57
2PXW	3.08	102.57	140.79	2VZX	2.83	98.71	147.90
2PXW	3.02	101.17	140.31	2VZX	2.89	100.29	145.52
3K1K	2.94	104.27	144.42	2VZX	2.70	102.17	155.83
3K1K	2.91	98.27	144.31	2VZX	2.78	103.44	155.53
3O77	2.84	85.84	135.13	2VZX	2.83	103.65	152.06
3EVR	2.90	96.22	146.64	2VZX	2.91	101.98	147.68
2G6X	3.06	92.68	126.26	2VZX	2.89	101.88	146.51

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2G6X      3.11    97.14    129.24

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**Table S4.** Data used in Figures 2D and 4D.

PDB Code	$d$ (Å)	$\theta$ (°)	$\xi$ (°)
1CV7	2.97	88.73	149.57
1EME	3.03	101.58	146.01
1KP5	3.09	106.94	142.65
1KP5	3.12	105.51	142.20
1RM9	3.05	92.43	125.31
1XA9	3.19	100.67	131.42
1XAE	3.02	87.93	128.62
1XAE	2.93	89.77	127.61
1YFP	2.84	95.94	136.38
1YFP	2.84	95.93	136.30
2EMO	3.13	120.11	146.43
2YFP	2.81	98.96	134.01
3EK4	2.86	95.37	139.26
3EK8	3.05	97.62	142.97
3EKJ	2.85	99.45	152.42
3EVV	2.93	97.69	142.74
3O78	2.72	97.48	141.91
3O78	2.61	99.80	142.31
3OGO	2.94	97.80	145.88
3OGO	2.82	95.77	146.98
3OGO	2.83	99.29	147.53
3OGO	2.89	99.35	148.48
1RMP	3.15	100.58	143.52