**S1 Table.** Phanta chromophore contacts

|  |  |  |
| --- | --- | --- |
| **Chromophore atom** | **Interacting protein atom(s)** | **Nature of interaction(s)** |
| **Methionine moiety** |
| N1 | Ala60 O, Thr58 O | H-bond |
|  | Ala60 C | vdw |
| Cα1 | Asn65 N | vdw |
| Cβ1 | Thr58 O | vdw |
| Cγ1 | Gln38 Oε1/Cδ/Nε2 | vdw |
| S1 | Gln38 Oε1, Glu211 N | H-bond |
| C1 | Leu209 O, Gln38 Cδ/Cγ | vdw |
| **Imidazolinone moiety** |
| C4 | Pro59 O, Asn65 N | vdw |
| N2 | Pro59 O, Glu211 Oε1/Oε2 | H-bond |
|  | Pro59 C, Glu211 C | vdw |
|  | Glu211 O1, Gln38 N2, Asn65 O/N | H2O(260) mediated H-bond |
| Cα2 | Pro58 C, Glu211 C | vdw |
| C2 | Pro59 O/C, Arg91 C/N, Asn64 N | vdw  |
| O2 | Arg91 NH1/NH2, Pro59 O, Asn64 N | H-bond |
|  | Arg91 C | vdw |
|  | Trp89 N1, Asn65 N, Arg66 N | H2O(123) mediated H-bond |
| N3 | Asn69 N, Pro63 O | H-bond |
|  | Glu211 O1, Gln38 N2, Asn65 O/N | H2O(260) mediated H-bond |
| **Glycyl moiety** |
| Cα3 | Asn65 N, Ala60 O | vdw |
| C3 | Asn65 C3, Trp89 N1 | vdw |
| O3 | Trp89 N1 | H-bond |
|  | Trp89 N1, Asn65 N, Arg66 N | H2O(123) mediated H-bond |
|  | Ser105 O, Ala60 O | H2O(257) mediated H-bond |
| **4-hydroxyphenyl-methylene moiety** |
| Cβ2 | Glu221 Oε2, Arg66 Cz | vdw |
| Cγ2 | Glu221 Oε2 | vdw |
| Cδ1 | Glu221 Oε2, Pro59 C | vdw |
| Cδ2 | – |  |
| Cε1 | Ile195 C1/C2 | vdw |
| Cε2 | Gln193 C, Met159 S/C | vdw |
| C | Gln193 C, Met159 S/C, Ser142 Oγ | vdw |
| OH | Met159 S/C | vdw |
|  | Ser142 Oγ | H-bond |
|  | Glu140 O | H2O(247) mediated H-bond |