

## Supplementary Figure 1 | Comparison between structural models of sperm whale Alpha-1 AR and hmDRD1.

**a**, Structural model of the sperm whale Alpha-1 AR, as determined by AlphaFold. The ICL2 region, ranging from residue 3.50 to 4.44, is colored blue. To emphasize the proximity of the ICL2 region to helix V and VI, residues in the corresponding helices that lie within 7 Å of any residue in the ICL2 region are represented as sticks. **b**, Superimposition of the hmDRD1 (green) and the sperm whale Alpha-1 AR (wheat) models. **c**, Close-up view of the aligned structures. Residues corresponding to the insertion site of LightR and LightG (3.50 and 4.44 respectively 5.63 and 6.33) are represented as sticks. The distance between  $C_{\alpha}$  atoms of the hmDRD1 and sperm whale Alpha-1 AR are listed in the table.