Structural basis for full-length chemerin recognition and signaling through chemerin receptor 1

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Supplemental information

Figure S1-S7

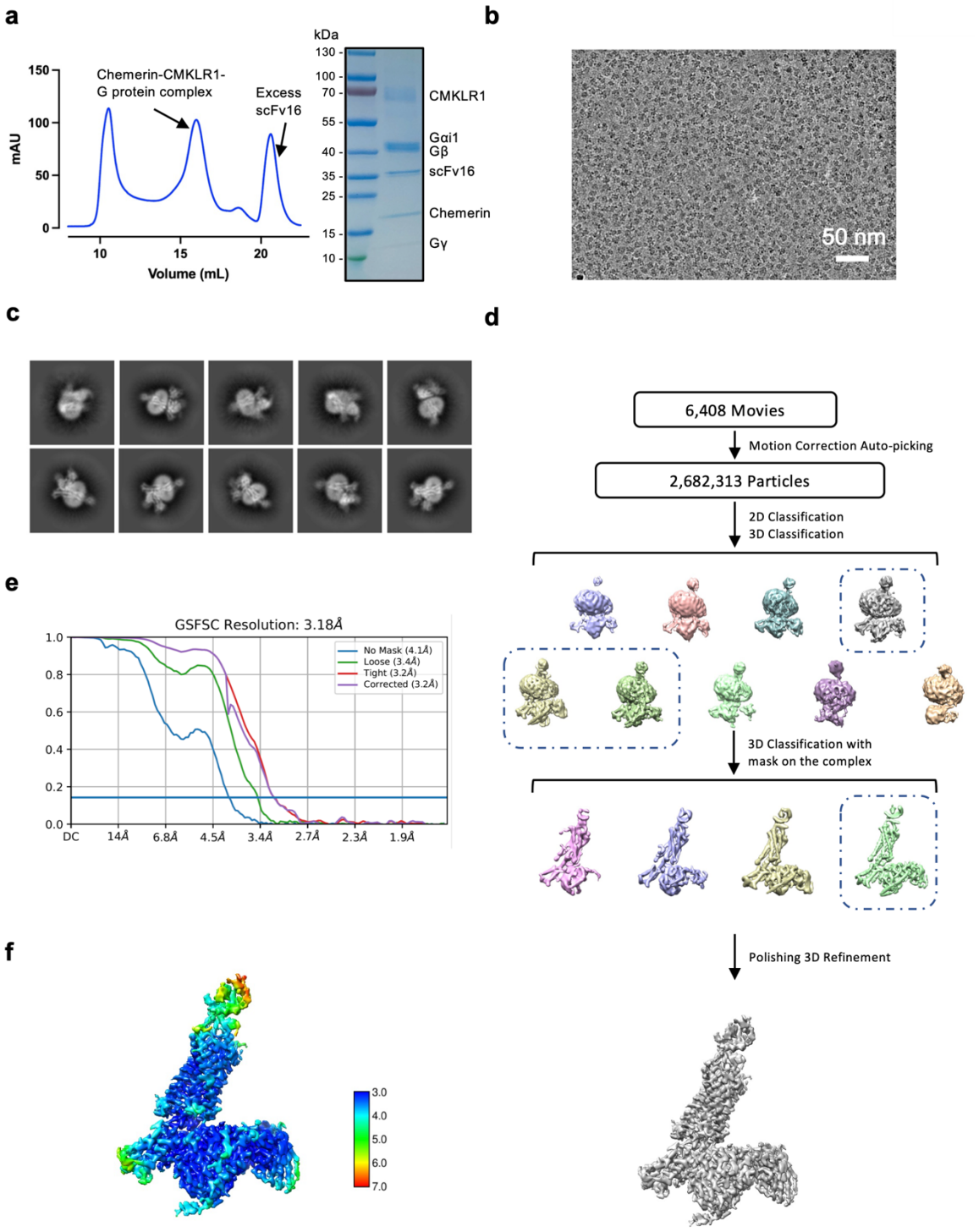

Fig. S1 Purification and cryo-EM data processing of the chemerin-CMKLR1-Gi complex.

a, Size-exclusion chromatography profile and SDS–PAGE analysis of the chemerin-CMKLR1-Gi complex bound with chemerin. **b,** Representative micrograph after motion correction and dose weighting. **c,** 2D class averages of the CMKLR1-Gi complex bound with chemerin. **d,** Workflow of cryo-EM data processing using cryoSPARC. **e,** Gold standard Fourier shell correlation (FSC) curve indicates overall nominal resolution at 3.18 Å. **f,** local resolution map.

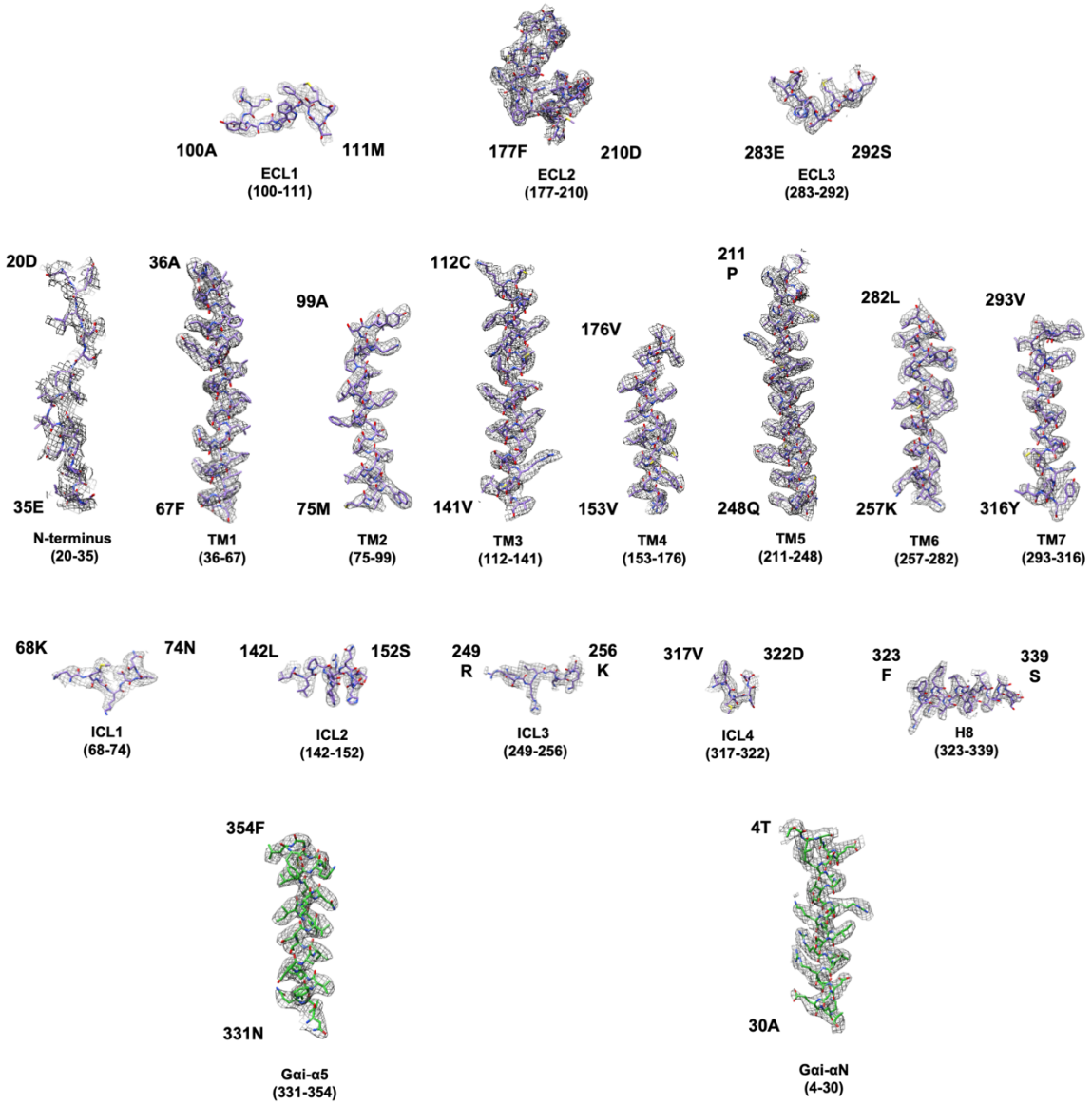

Fig. S2 Representative density maps for the structural model of CMKLR1 complex.

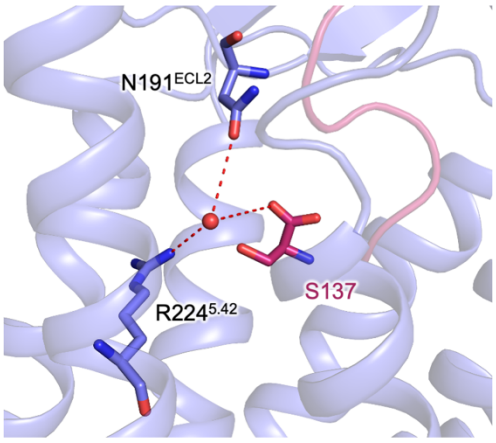

Fig. S3 Water-engaged hydrogen bond network between S137^{chemerin} and the receptor. The water molecule is shown as a red sphere. Hydrogen bonds are highlighted in red dashed lines.

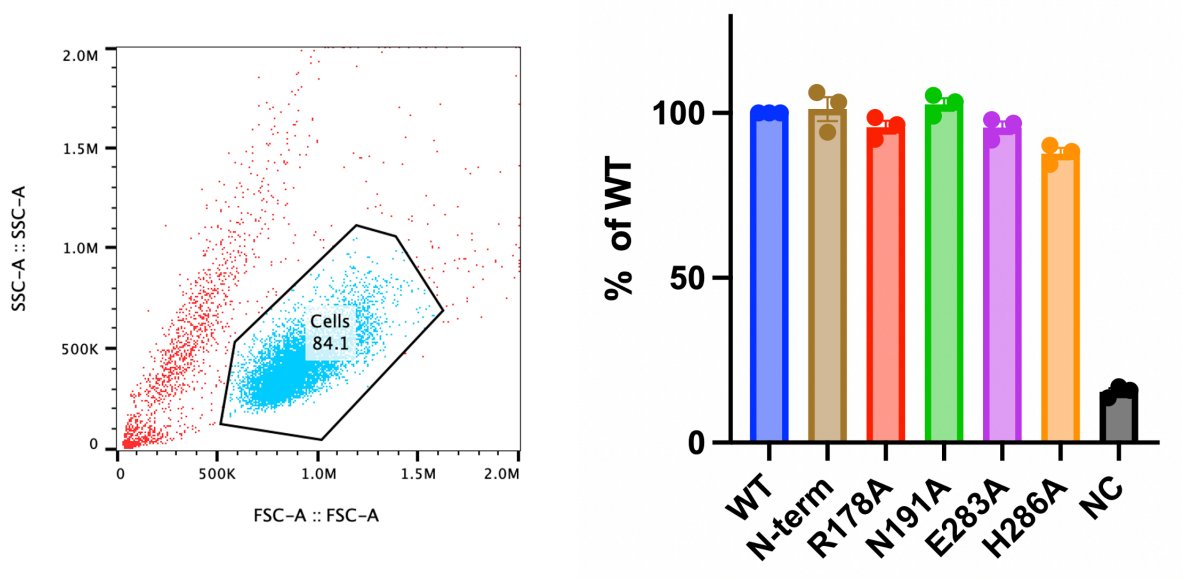

Fig. S4 Cell surface expression of CMKLR1 and its mutants.
HEK293T cells were transfected with FLAG-tagged WT or mutant CMKLR1 for 24 h at 37°C. The cells were then incubated with an APC-conjugated CMKLR1 antibody for 30 min on ice. Cells were subjected to flow cytometry with gating on cell population (left panel). The fluorescence signals on the cell surface were quantified (right panel). Data shown are means ± SEM from n=3 independent experiments. *, $p < 0.05$.

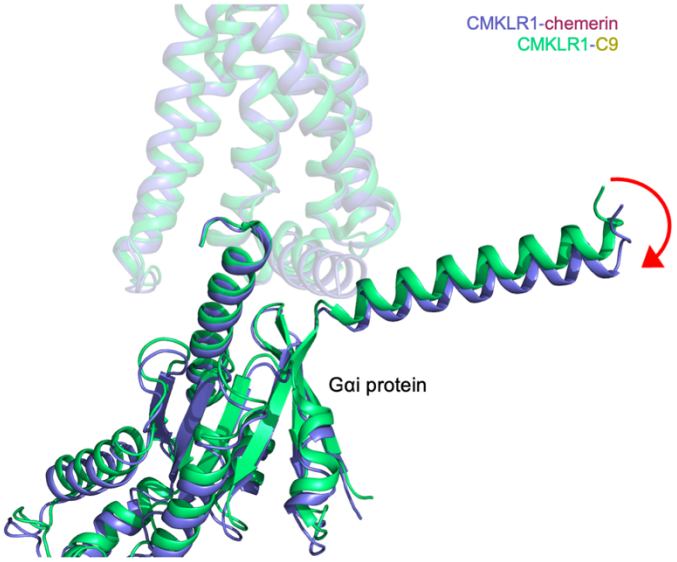

Fig. S5 Comparison for Gαi protein binding to chemerin- and C9-bound CMKLR1. Gαi protein bound to the chemerin-CMKLR1 complex is shown in purple, and Gαi protein bound to the C9-CMKLR1 complex is shown in green.

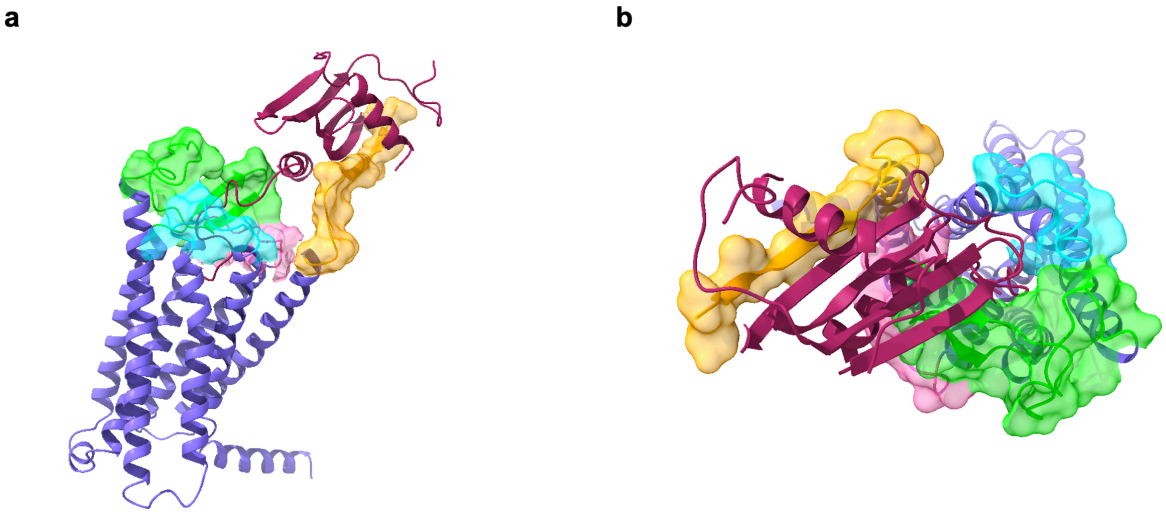

Fig. S6 Structural engagement of CMKLR1 extracellular loops to chemerin binding . **a,** Side view of the chemerin-CMKLR1 structure. N-terminus of CMKLR1 is shown as yellow surface, extracellular loop 1 (ECL1) is shown as dark pink surface, ECL2 is shown as green surface and ECL3 is shown as cyan surface. **b,** Extracellular top view of **a**.

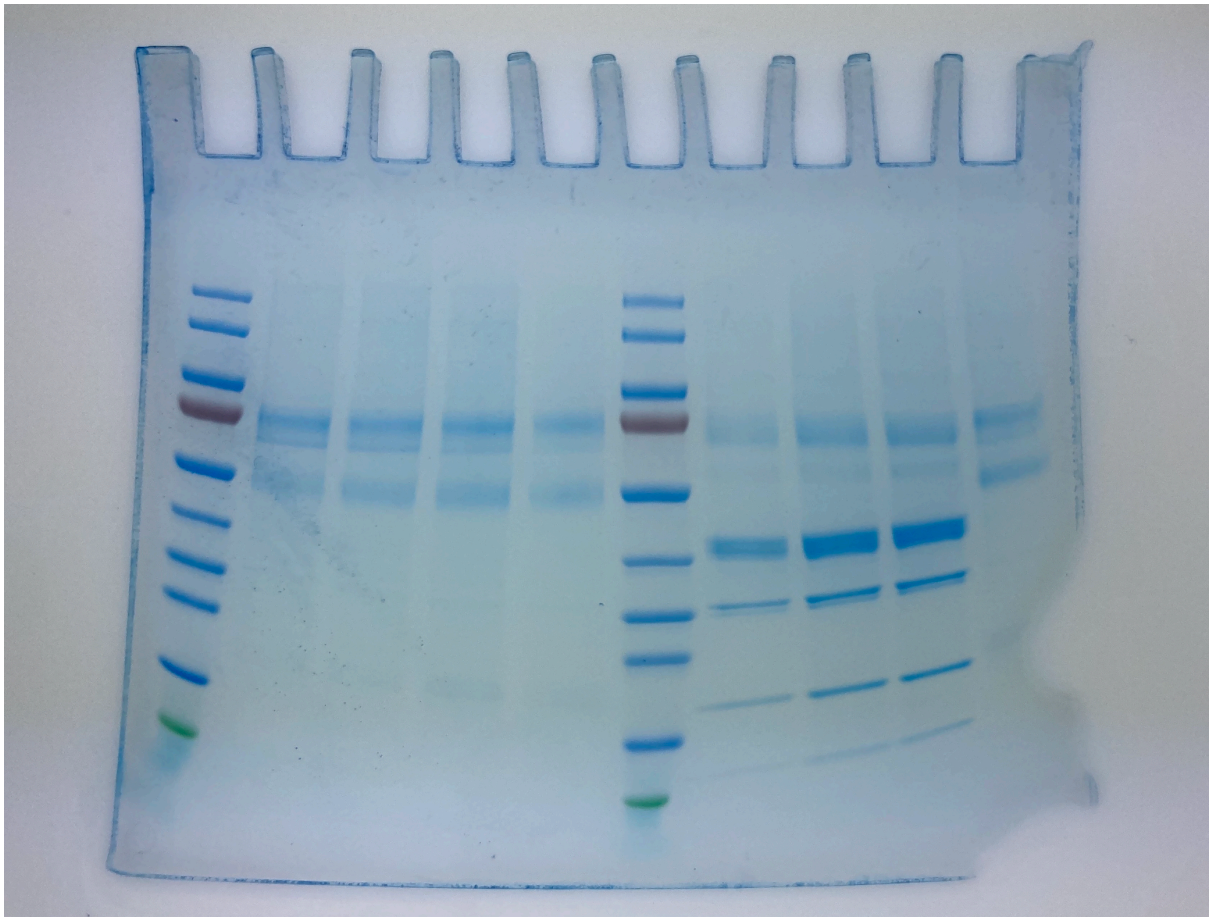

Fig. S7 Uncropped gel of SDS-PAGE image in Fig. S1a.