**Supplementary file 1.** Crystallization statistics for PLC-γ1.

|  |  |  |
| --- | --- | --- |
|  | **native** | **Gd3+-derivative*a*** |
| **Data collection** |  |  |
| wavelength (Å) | 1.0000 | 1.7115 |
| space group | P212121 | P212121 |
| unit cell dimensions |  |  |
|  a, b, c (Å) | 70.8, 82.4, 228.3 | 71.1, 83.4, 232.3 |
|  , ,  (deg.) | 90.0, 90.0, 90.0 | 90.0, 90.0, 90.0 |
| resolution (Å) | 41.23-2.46 (2.50-2.46) | 49.04-2.98 (3.04-2.98) |
| unique reflections | 49,443 (2,380) | 51,779 (2,158) |
| Rmerge***b*** | 12.3 (69.2) | 9.9 (78.8) |
| <I/>***c*** | 16.9 (3.3) | 12.6 (1.3) |
| completeness (%) | 99.9 (97.2) | 95.6 (80.3) |
| redundancy | 8.1 (6.8) | 4.3 (3.3) |
| CC1/2 | 99.7 (79.5) | 99.6 (59.7) |
|  |  |  |
| **Refinement*e*** |  |  |
| resolution (Å) | 41.23-2.46 |  |
| no. of reflections(working set/test set) | 45,911/3,526 |  |
| R/Rfree***d*** | 20.2/24.5 |  |
| no. non-hydrogen atoms |  |  |
|  protein | 8,598 |  |
|  water | 246 |  |
|  Ca2+ ion | 1 |  |
|  Na+ ion | 1 |  |
| RMSD |  |  |
|  bond lengths (Å) | 0.003 |  |
|  bond angles (deg.) | 0.600 |  |
| average B factor (Å2) |  |  |
|  protein | 37.8 |  |
|  water | 32.3 |  |
|  Ca2+ ion | 42.4 |  |
|  Na+ ion | 56.6 |  |
| Ramachandran plot (%) |  |  |
|  favored | 96.5 |  |
|  allowed | 3.5 |  |
|  disallowed | 0 |  |

Numbers in parentheses refer to data for the highest-resolution shell. Each dataset was collected from a single crystal.

***a***: Merging statistics were calculated with Friedel mates treated separately.

***b***: Rmerge = 100|I-<I>|/I, where *I* is the integrated intensity of a measured reflection.

***c***: <I/> is the mean signal-to-noise ratio, where *I* is the integrated intensity of a measured reflection and  is the estimated error in the measurement.

***d***: R = 100|Fo-Fc|/Fo, where *Fo* and *Fc* are the observed and calculated structure factor amplitudes, respectively. Rfree is calculated as R using 7% of the total reflections that were randomly excluded from refinement.

***e***: Refinement was performed with riding hydrogens.