

S4 Table. EM Data Collection and Map/Model Refinement Parameters.

| Complex | BG505.v4.1 + RM20F | BG505.v5.2 + RM20J | BG505.v5.2 + RM20E1 + PGT122 |
|---|--------------------|--------------------|------------------------------|
| Microscope | Titan Krios | Talos Arctica | Talos Arctica |
| Voltage, kV | 300 | 200 | 200 |
| Detector | Gatan K2 Sumit | Gatan K2 Sumit | Gatan K2 Sumit |
| Recording Mode | Counting | Counting | Counting |
| Magnification | 29,000 | 36,000 | 36,000 |
| Moive micrograph pixel size, Å | 1.03 | 1.15 | 1.15 |
| Dose rate, e ⁻ /[(camera pixel)*s] | 8.833 | 6.004 | 5.656 |
| No. of frames per moive micrograph | 24 | 44 | 48 |
| Frame exposure time, ms | 250 | 250 | 250 |
| Movie micrograph exposure time, s | 6 | 11 | 12 |
| Total dose, e ⁻ /Å ² | 50.0 | 49.9 | 51.3 |
| Defocus range, µm | 1.3 to 2.8 | 1.0 to 3.5 | 1.0 to 2.5 |
| No. of movie micrographs | 1055 | 553 | 579 |
| No. of molecular projection images in map | 91212 | 26327 | 17010 |
| Symmetry | C3 | C3 | C1 |
| Map resolution (FSC 0.143) | 4.25 | 3.88 | 4.42 |
| Map sharpening B-factor, Å ² | -174.7 | -112.6 | -81.2 |
| No. of atoms in deposited model | 19962 | 19785 | 21768 |
| MolProbit score | 1.16 | 1.38 | 0.97 |
| Cβ Outliers (%) | 0.00 | 0.00 | 0.00 |
| Rotamer Outliers (%) | 0.15 | 0.72 | 0.13 |
| Rama Outliers (%) | 0.65 | 1.29 | 0.20 |
| Clashscore | 1.75 | 2.12 | 0.97 |
| EMRinger score | 2.02 | 2.71 | 1.82 |
| Privateer | pass | pass | pass |
| EMDB | EMD-21246 | EMD-21257 | EMD-21232 |
| PDB ID | 6VN0 | 6VO1 | 6VLR |