**Supplementary file 5. Conformational changes for the entire Mfd-EC complexes.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | L2(adp) | C1(ATP) | C2(ATP) | C3(adp) | C4(ADP) | C5(ATP) |
|  | align | rms\_cur | align | rms\_cur | align | rms\_cur | align | rms\_cur | align | rms\_cur | align | rms\_cur |
| L1(atp) | 0.747(3143) | 35.736(4286) | 0.851(3177) | 42.301(4282) | 1.119(3071) | 44.219(4283) | 1.934(3025) | 46.889(4278) | 1.631(3034) | 44.535(4283) | 1.185(3061) | 44.162(4284) |
| L2(adp) |  | 0.534(3135) | 19.00(4306) | 1.037(3033) | 22.844(4299) | 1.521(2977) | 24.626(4302) | 1.269(3009) | 23.003(4309) | 0.879(3066) | 24.152(4306) |
| C1(ATP) |  |  | 0.967(3034) | 6.839(4303) | 1.450(2957) | 10.137(4302) | 1.067(2937) | 9.960(4307) | 0.788(3033) | 11.428(4308) |
| C2(ATP) |  |  |  | 2.127(3247) | 5.428(4303) | 0.458(2928) | 4.699(4302) | 0.793(2926) | 7.738(4301) |
| C3(adp) |  |  |  |  | 2.765(4186) | 3.736(4303) | 2.905(3540) | 6.433(4302) |
| C4(ADP) |  |  |  |  |  | 0.633(3071) | 4.491(4307) |