

CheckMyMetal(CMM) report for PDB code: 7aap

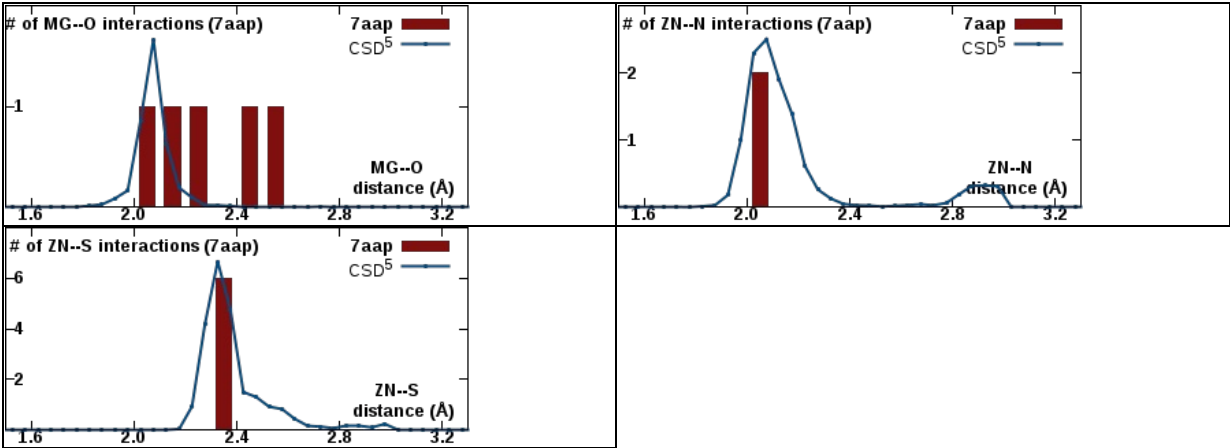
PDB title: Nsp7-nsp8-nsp12 sars-cov2 rna-dependent rna polymerase in complex with template:primer dsrna and favipiravir-rtp (2.6Å)

Warning: Valence and nVECSUM parameters should be interpreted with great care due to potential cation-pi interactions observed around A:1002; and the presence of multi-nuclear metal clusters around P:101

ID	Res.	Metal	Occupancy	B factor (env.) ¹	Ligands	Valence ²	nVECSUM ³	Geometry ^{1,4}	gRMSD(°) ¹	Vacancy ¹	Bidentate	Alt. metal
A:1001	ZN	Zn	1	N/A	N ₁ S ₃	2	0.049	Tetrahedral	6.7°	0	0	
A:1002	ZN	Zn	1	N/A	N ₁ S ₃	2.1	0.074	Tetrahedral	10.4°	0	0	
A:1003	MG	Mg	1	N/A		N/A	N/A	Free	N/A	N/A	N/A	
A:1004	MG	Mg	1	N/A	O ₄	0.9	0.34	Octahedral	9.8°	33%	0	Ca
P:101	MG	Mg	1	N/A	O ₁	0.12	1	Poorly Coordinated	N/A	N/A	0	
Legend:			Not applicable	Outlier	Borderline	Acceptable						

Column	Description
Occupancy	Occupancy of ion under consideration
B factor (env.) ¹	Metal ion B factor, with valence-weighted environmental average B factor in parenthesis
Ligands	Elemental composition of the coordination sphere
Valence ²	Summation of bond valence values for an ion binding site. Valence accounts for metal-ligand distances
nVECSUM ³	Summation of ligand vectors, weighted by bond valence values and normalized by overall valence. Increase when the coordination sphere is not symmetrical due to incompleteness.
Geometry ^{1,4}	Arrangement of ligands around the ion, as defined by the NEIGHBORHOOD algorithm
gRMSD(°) ¹	R.M.S. Deviation of observed geometry angles (L-M-L angles) compared to ideal geometry, in degrees
Vacancy ¹	Percentage of unoccupied sites in the coordination sphere for the given geometry
Bidentate	Number of residues that form a bidentate interaction instead of being considered as multiple ligands
Alt. metal	A list of alternative metal(s) is proposed in descending order of confidency, assuming metal environment is accurately determined. This feature is still experimental. It requires user discrimination and cannot be blindly accepted

Metal-ligand distance distributions for pdb7aap.ent in comparison with CSD



(1) Zheng H, Chordia MD, Cooper DR, Chruszcz M, Müller P, Sheldrick GM, Minor W (2014) *Nature Protocols*, 9(1), 156-70.
(2) Brown ID (2009) *Chem. Rev.*, 109, 6858-6919.
(3) Müller P, Köpke S, Sheldrick GM (2003) *Acta Crystallogr. D Biol. Crystallogr.*, 59, 32-37.
(4) Kuppuraj G, Dudev M, Lim C (2009) *J. Phys. Chem. B*, 113, 2952-2960.
(5) CSD: Cambridge Structural Database
Maintained by: Heping Zheng <dust@iwonka.med.virginia.edu>

Citing CheckMyMetal (CMM):
Validation of metal-binding sites in macromolecular structures with the CheckMyMetal web server. Zheng,H., Chordia,M.D., Cooper,D.R., Chruszcz,M., Müller,P., Sheldrick,G.M., Minor,W. (2014) *Nature Protocols*, 9(1), 156-70.