

Table 1: Variable residues and conserved residues of NSP2 identified using ConSurf server (Celniker et al., 2013; Ashkenazy et al., 2010; Berezin et al., 2004).

Residues*	NSP2
Conserved	MET1-CYS6, CYS8-ASP15, TYR17, PHE19-ASN23, LEU25-ILE27, ALA29-LYS34, LYS38, ASP39, ASP41-ILE47, TYR49-ALA52, PRO54, GLN56, PHE57, LYS59-THR63, ASP65-SER67, GLY69, ASN71, GLU73, PHE77, LYS79-ALA81, CYS85-LEU88, SER90, THR94, GLN95, LEU102, SER103, SER107, HIS110, GLU112, ASN113, VAL115, ARG117, ASN120, GLN122, ASP123, LEU125-SER128, LEU131, LEU132, ILE138-ILE140, GLU145-THR149, THR151-VAL158, GLN160, ASN161, PHE164-TRP167, LEU169, TYR171, HIS174, LEU176, PRO178, ILE179, ASP181, ASN183, PHE184, GLU186, LYS188, THR190, ASN192, GLU193, LYS195, PRO196, SER198, GLU204, GLU208-ASN214, ALA217, ILE219-ARG227, LYS230-VAL234, ASN236-VAL241, ALA243, ASN248, LYS250, PHE257, LEU260-ARG263, ILE265, GLN267, ASN268, TYR270, ALA271, PHE272, SER274-MET276, GLN278, ASN280, CYS285, LYS286, LEU288-LYS292, LYS294, PHE300, GLY302, SER304, ARG307, LYS308, ASP310-SER313, GLY316
Variable	LYS18, ASN24, VAL35-LYS37, ILE48, PRO55, LYS58, ASN64, PHE72, THR74, ILE75, THR78, MET82, ILE84, LEU91-VAL93, ALA96-ASN100, ARG104, ILE116, LYS118, PRO121, LYS129, ASP130, LEU133-THR136, GLY141-SER143, ALA162, LYS168, THR170, GLU173, GLN175, ILE185, LEU191, VAL200-LYS203, LEU205, VAL206, LYS215, VAL218, VAL229, PHE245, SER247, VAL249, THR251-ASP256, ASN258, THR273, THR281, LEU282, VAL284, ARG287, MET293, GLU296, LYS297, PRO299, VAL315, VAL317

* Variable residues (grades 1-3) and conserved residue (grades 7-9)

Table 2: Secondary structures conservation of NSP2 identified using ConSurf server (Celniker et al., 2013; Ashkenazy et al., 2010; Berezin et al., 2004).

NTD	Conserved residues	CTD	Conserved residues
β 1 (residues 2-4)	2-4	β 5 (residues 156-161)	156-158, 160, 161
β 2 (residues 7-13)	8-13	β 6 (residues 163-169)	164-167, 169
β 3 (residues 16-22)	17, 19-22	β 7 (residues 186-192)	186, 188, 190, 192
α 1 (residues 24-30)	25-27, 29, 30	α 7 (residues 199-212)	204, 208-212
α 2 (residues 76-89)	77, 79-81, 85-88	β 8 (residues 217-219)	217, 219
α 3 (residues 95-103)	95, 102, 103	β 9 (residues 226-229)	226, 227
β 4 (residues 104-106)	-	α 8 (residues 234-247)	234, 236-241, 243
α 4 (residues 108-118)	110, 112, 113, 115, 117	α 9 (residues 267-275)	267, 268, 270, 271, 272, 274
α 5 (residues 125-126)	125-126	α 10 (residues 282-290)	285, 286, 288-290
α 6 (residues 130-140)	131, 132, 138-140	α 12 (residues 303-311)	304, 307, 308, 310, 311

Table 3: Ligand Binding Sites predicted by SITEHOUND server (Hernandez et al., 2009).

Site *	Residues in ligand binding site of NSP2	Site volume (Å ³)
3	Asn113, Ile116, Arg117, Asn120, Gln122- Ile124, Thr149, Glu153- Ile157, Trp167, Thr170	63
5	Met1, Ser107, His110, Glu153, Leu169, Tyr171, Ile179, Phe184, Glu186, Lys188, His225, Arg227, His237, Arg240	44
7	Tyr231, Val234, Ala235, Trp266-Asn268, Leu289- Met293	38
8	Ala5, Pro10, Asp41-Phe43, Pro54, Gln56, Phe57, Val98-Asn100, Leu102, Ser103	37
9	Lys28, Leu31, Thr32, Asn62, Thr63, Met70-Thr74	33

*The numbering of the sites is according to the rank obtained from SITEHOUND.

Table 4: Novel Binding Sites identified in NSP2.

Site	Residues in putative binding site
1	Leu25-Ile27, Met30
2	Phe22, Ala26, Ala29 and Met30
3	Ile146-Thr148, Thr151
4	Lys59, Asn62-Asn64, Asn66
5	Arg210, Lys301-Thr305