Supplementary table 1. Summary of structural and functional properties of YFV proteins.

Flavivirus Proteins	Type of Protein and/or Sequence Elements	Functions	Interaction with Host/Viral proteins or nucleotide sequences	Functional relation to the Immune system	References
Capsid	14-kDa Capsid protein	• Packing the viral RNA • Nucleocapsid core (1)			(1) [1]
prM	25-kDa type I membrane protein	• To inhibit the preactivation of E protein during the transport from ER to the trans-Golgi network (1)			(1) [2]
M	8-kDa type I membrane protein	• To protect the viral particle • To form 1:1 complex with E protein (1)			(1) [3]
E protein	52-kDa type I membrane protein	• Attachment to target cells • Interaction with surface receptors • Fusion of the viral particle with endosomal membrane (1)		• Immunogenic region to induce neutralizing antibodieds response (2)	(1) [4] (2) [5]
NS1	48-kDa Multifunctional glycoprotein (monomer, dimer (membrane-bound protein, mNS1), and a hexamer (secreted protein, sNS1))	• Localized in the intracellular membranes or at the cell surface (1) • Viral replication (2) • Cofactor for NS5 (3) • Remodelling the ER membrane for vesicle packets (VPs) (3) • To trigger the endothelial permeability (4)	• C4 and C1s (Complement) (5) • STAT3 beta (8)	• To activate the TLR and inhibit the complement system (immune invasion) (6, 7)	(1) [6] (2) [7] (3) [8] (4) [9] (5) [10] (6) [11] (7) [12] (8) [13]

NS2A	22-25-kDa Integral hydrophobic membrane protein	• Replication complex (1) • Assembly (1, 2) • The N-terminus is processed by membrane-bound host protease in the ER and C-terminus by NS2B-NS3 viral protease (3) • To enhance membrane permeability (5)	• Interaction with the 3'UTR of the viral RNA (4) • NS4A, NS3, and NS5 (4) •		(1) [14] (2) [15] (3) [16] (4) [17] (5) [18]
NS2B	14-kDa integral membrane protein	• Cofactor for protease activity of NS3 (1)	• NS3 (1)		(1) [19]
NS3	69-kDa multifunctional protein • RNA triphosphatase (RTPase) • Nucleoside 5′ triphosphatase (NTPase) • RNA helicase • Serine protease	• Replication complex (1) • Protease activity (with NS2B) (1)	• NS2B (1)		(1) [20]
NS4A	16-kDa integral membrane protein	• Remodeling the ER membrane for vesicle packets (VPs) (1) • Replication complex (2)	• Viral dsRNA (3) • NS1, NS2A, and NS5 (3)	• Autophagy (4)	(1) [21] (2) [22] (3) [23] (4) [24]
NS4B	30-kDa integral membrane protein	• Cleaved by peptide 2K (1) • Remodelling the ER membrane for vesicle packets (VPs) (2) • Helicase activity of NS3 (3)	• NS3, NS1, and NS4A (1) • STING (5)	• Suppression the α/β interferon signaling (4) • To inhibit RIG-1 by STING binding (5)	(1) [25] (2) [20] (3) [26] (4) [27] (5) [28]

NS5	105-kDa multifunctional protein • Methyltransferesase • Guanylyltransferase • RNA-dependent RNA polymerases (RdRp)	• Replication complex (1) • Capping the nascent viral RNA (1)	• NS2A, NS3, and NS4A (1) • STAT2 (2)	• Inhibitor of IFN-I signal pathway (2)	(1) [20] (2) [29]

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