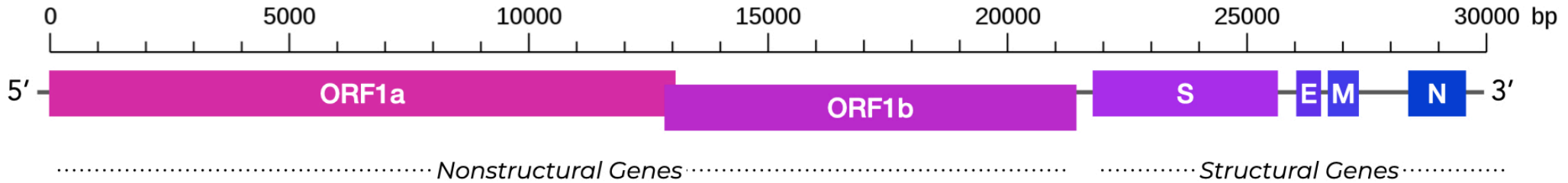


CoV Genome Organization: Coronaviruses have a ~30kb, positive sense RNA genome that encodes at least 20 proteins.



- ORF1a** ORF1a and ORF1b slightly overlap, encoding a total of **16 proteins** mostly involved in viral RNA synthesis
- ORF1b**
- S** The **spike protein** protrudes from the virion surface, and is essential for getting into the host cell
- E** The **envelope protein** is an integral membrane protein required for virion assembly and budding
- M** The **membrane protein** is the key organizer for virion assembly; essential for S protein function
- N** The **nucleocapsid protein** protects the RNA genome, and helps with transcription and assembly

