variant group. The receptor-binding gene region

appears to be very similar to that of the SARS-

CoV and it is believed that the same receptor

would be used for cell entry. |7

4.1 Virion structure and its

genome

Coronaviruses are structurally enveloped,

belonging to the positive-strand RNA viruses

category that has the largest known genomes of

RNA. The structures of the coronavirus are

more spherical in shape, but their structure has

the potential to modify their morphology in

response to environmental conditions, being

pleomorphic. The capsular membrane which

represents the outer envelope usually has

glycoprotein projection and covers the nucleus,

comprising a matrix protein containing a

positive-strand RNA. Since the structure

possesses 5'-capped and 3'-polyadenylated

ends, it remains identical to the cellular

mRNAs.'® The structure is comprised of

hemagglutinin esterase (HE) (present only in

some beta-coronaviruses), spike (S), small

membrane (E), membrane (M) and nucleocapsid

(N), as shown (Figure 1). The envelope

containing glycoprotein is responsible for

attachment to the host cell, which possesses the

primary anti-genic epitopes mainly those