# Text-Only Report (3D-Coronavirus-NEW)

5/15/2020 9:04:24 AM

## Three D (3D-Coronavirus-NEW)

### **Title:**

Coronavirus &amp COVID-19 Structure

### **Instruction Text:**

Click each virus component to learn more about it.

### **Hotspot 1 Title:**

Spicule (S)

### **Hotspot 1 Text:**

It is a membrane glycoprotein that is fundamental for the viral entry into the host cell. It is a huge molecule, being composed of 1,250 amino acids.

The chains are associated in trimers, constituting the spicules that give the virus its characteristic Corona form. It's one of the proteins capable of generating an immune response. Like other fusion proteins, it can change shape allowing the fusion of viral and cell membranes

### **Hotspot 2 Title:**

Protein Matrix (M)

### **Hotspot 2 Text:**

It is another integral membrane protein that protrudes little to the outside and it is the most abundant.

It is involved in the assembly of the viral envelope from intracellular membranes such as the Golgi apparatus, and in the inclusion of the capsid that packs the genome.

### **Hotspot 3 Title:**

Hemagglutinin esterase (HE)

### **Hotspot 3 Text:**

A protein with enzymatic activity that binds to the sialic acid of mucosal cells cutting it off.

It is not present in all types of coronavirus. It is a dimer that facilitates detachment of the virus from the sialic acid-rich epithelium.

### **Hotspot 4 Title:**

Membrane protein (E)

### **Hotspot 4 Text:**

A small polypeptide of about 76 amino acids capable of assembling into pentameters that form pores in the lipid membrane, with cation-selective activity.

In SARS it is not essential for replication but its absence greatly attenuates the virus.

In the infected cell, it is located near the nucleus and on the cell surface.