

KL1 KL2 KL3 KL4 KL5 KL6 KL7 KL8 KL9 KL10 KL11 KL12 KL13 KL14 KL15 KL16 KL19 KL20 KL21 KL22 KL23 KL24 KL25 KL27 KL28 KL30 KL32 KL35 KL36 KL38 KL39 KL46 KL47 KL48 KL51 KL52 KL54 KL55 KL56 KL57 KL60 KL61 KL62 KL63 KL64 KL69 KL103 KL111 KL116 KL122 KL125 KL127 KL140 KL142 KL143 KL146 KL153 KL169

### KASPAH-REF Isolates

### Sequence Clusters (SCs)

## GWAS prediction

### Active proteins based on manual prediction

**Active based on GWAS prediction**

## Lytic proteins