|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Protein** | **No. of amino acids** | **Instability index** | **Aliphatic index** | **GRAVY** | **Antigenicity** | | **Allergenicity** | **Cellular localization** | | | **Secondary structure** | | | |
| **VaxiJen** | **ANTIGENPro** | **Outside** | **TMhelix** | **Inside** | **Alpha helix** | **Extended Strand** | **Beta turn** | **Random coil** |
| CDA1 | 470 | 32.96(Stable) | 79.36 | 0.054 | 0.8745 | 0.932177 | No | 1-449 | 450-469 | 470 | 28.51 | 11.28 | 2.98 | 57.23 |
| CDA2 | 455 | 31.58(Stable) | 70.79 | -0.199 | 0.6190 | 0.945144 | 1-455 | - | - | 29.23 | 10.77 | 4.40 | 55.60 |
| CDA3 | 412 | 33.65(Stable) | 79.08 | -0.125 | 0.6012 | 0.884516 | 1-412 | - | - | 36.65 | 14.32 | 4.37 | 44.66 |
| MP88 | 388 | 25.68(Stable) | 64.02 | -0.091 | 0.8947 | 0.964643 | 1-364 | 365-387 | 388 | 23.45 | 17.53 | 5.67 | 53.35 |

**Physicochemical, immunological and structural characterization of antigens**