VARIANTS of TYPE IV (9 mutations)

```
MT040335 GX-P5L    GCUUUAACUUU-UUACAAAUCCCAGGUAG-CAAAACCAACCAACUCUCGAUCUCUUGUAGAUCUGUUCUCUAAACGAACUUUAAAA 2020
MT040333 GX-P4L    GCUUUAACUUU-UUACAAAUCCCAGGUAG-CAAAACCAACCAACUCUCGAUCUCUUGUAGAUCUGUUCUCUAAACGAACUUUAAAA 2020
MT040334 GX-P1E    GCUUUAACUUU-UUACAAAUCCCAGGUAG-CAAAACCAACCAACUCUCGAUCUCUUGUAGAUCUGUUCUCUAAACGAACUUUAAAA 2020
MT072864 GX-P2V                UCCCAGGUAG-CAAAACCAACCAACUCUCGAUCUCUUGUAGAUCUGUUCUCUAAACGAACUUUAAAA 2020
MT040336 GX-P5E    GCUUUAACUUU-UUACAAAUCCCAGGUAG-CAAAACCAACCAACUCUCGAUCUCUUGUAGAUCUGUUCUCUAAACGAACUUUAAAA 2020

MT324062 Type III AUUAAAGGUUUAUACCU--UCCC-AGGUAACAAA-CCAACCAACUUUCGAUCUCUUGUAGAUCUGUUCUCUAAACGAACUUUAAAA 2020
```

NC_045512 (Wuhan HU_1) **Type III**

```
MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEVLSEARQHLKDGTCGLVEVEKGVLPQLEQPYVFIKRSDARTAPHGHVMVELVAELEGIQYGRSGETLGVLVPHVGEIPVAY
RKVLLRKNGNKGAGGHSYGADLKSFDLGDELGTDPYEDFQENWNTKHSSGVTRELMRELNGG
```

Variants of TYPE IV (16 mutations)

MT040334 Pangolin GX-P1E

```
MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEALSEARQHLLDGTCGIIDVEKGVLPQLEQPYVFVKRSDARTAPHGHVMVELVAELDGVQYGRSGETLGVLVPHVGETPVAY
RKILLRKNGNKGAGGHSFGIDLKSYDLGDELGTDPIDDFQVNWNTKHGSGVTRELMRELNGG
```

MT040335 Pangolin PCoV_GX-P5L

```
MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEALSEARQHLLDGTCGIIDVEKGVLPQLEQPYVFVKRSDARTAPHGHVMVELVAELDGVQYGRSGETLGVLVPHVGETPVAY
RKILLRKNGNKGAGGHSFGIDLKSYDLGDELGTDPIDDFQVNWNTKHGSGVTRELMRELNGG
```

MT0728.1 PCoV_GX_P2V

```
MESLVPGFNEKTHVQLSLPVLQVRDVLVRGFGDSVEEALSEARQHLLDGTCGIIDVEKGVLPQLEQPYVFVKRSDARTAPHGHVMVELVAELDGVQYGRSGETLGVLVPHVGETPVAY
RKILLRKNGNKGAGGHSFGIDLKSYDLGDELGTDPIDDFQVNWNTKHGSGVTRELMRELNGG
```