**Table S1. HA protein sequences of H1N1 influenza vaccines for strains recommended by the WHO from 2011 to 2020**

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| --- | --- | --- | --- |
| Strain | Subtype | Protein | GISAID Accession |
| A/California/7/2009 | H1N1 | HA | EPI1593569 |
| A/Christchurch/16/2010 | H1N1 | HA | EPI280344 |
| A/Michigan/45/2015 | H1N1 | HA | EPI1349891 |
| A/Brisbane/02/2018 | H1N1 | HA | EPI1312566 |
| A/Guangdong-Maonan/SWL1536/2019 | H1N1 | HA | EPI1542573 |
| A/Victoria/2570/2019 | H1N1 | HA | EPI1801565 |
| A/Wisconsin/588/2019 | H1N1 | HA | EPI1661758 |
| A/Hawaii/70/2019 | H1N1 | HA | EPI1617983 |