### Supplementary Table 1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Protein** | **Target Sequence** | **Template Structures** | **Template Region** | **Template Sequence** | **Sequence Identity** | **Region** | **Coverage** |
| **PB2** | A/California/07/2009(H1N1) | 4wsbC | 1-482, 491-741 | A/little yellow-shouldered bat/Guatemala/060/2010  (H17N10) | 67% | 1-759 | 100% |
| **PB1** | 4wsbB | 1-194, 199-490, 492-647, 650-733, 736-754 | 79% | 1-757 | 100% |
| **PA** | 4wsbA | 1-185, 204-714 | 72% | 1-716 | 100% |
| **HA1** | 3m6sA | 1-322 | A/Darwin/2001/2009 (H1N1) | 99% | 1-326 | 99% |
| 3lzgA | 11-325 | A/California/04/2009(H1N1) | 99% |
| **HA2** | 3m6B | 1-170 | A/Darwin/2001/2009 (H1N1) | 98% | 1-175 | 100% |
| 3lzgB | 1-175 | A/California/04/2009(H1N1) | 98% |
| **NP** | 3ro5A | 22-71, 91-198, 212-429, 439-479, 485-497 | A/Wilson-Smith/1933 (H1N1) | 92% | 21-498 | 96% |
| 3ro5B | 22-83, 88-199, 214-246, 248-393404-428, 441-479, 486-491 | 92% |
| **NA** | 4b7QA | 83-350, 352-469 | A/California/07/2009(H1N1) | 100% | 83-469 | 83% |
| **M1** | 3md2A | 4-67, 77-85, 89-157 | A/California/04/2009 (H1N1) | 100% | 1-157 | 62% |
| 5cqeA | 1-71, 73-158 | A/Puerto Rico /8/34(H1N1) | 95% |
| **M2** | 2n70A | 18, 20-30, 32-49, 51-60 | A/Udorn/307/1972(H3N2) | 81% | 18-62 | 47% |
| 2kihA | 23-30, 32-49, 51-60 | 84% |
| 2l0jA | 22-49, 51-62 | 83% |
| **NS1** | 3m5rB | 79-203 | A/California/07/2009(H1N1) | 100% | 1-219 | 100% |
| 4opaB | 2-37, 41, 42-49, 85-203 | A/blue-winged teal/MN/993/1980(H6N6) | 84% |
| 3m8aA | 1-72 | A/California/07/2009(H1N1) | 100% |
| **NS2** | 1pd3 | 64-85, 87-103, 105-116 | A/Puerto Rico /8/1934(H1N1) | 96% | 64-114 | 42% |

Table S1: Overview of protein modeling for pH1N1 protein

This table provides detailed information about the homology modeling of all pH1N1 proteins.