

Table S1. Kinetics of ASAP-family GEVIs following transmembrane voltage steps. Related to Table 1.

| | ASAP1 | ASAP2s | ASAP2f R414Q | ASAP3 | ASAP3-Kv |
|--|------------|------------|--------------|-------------|------------|
| <i>Depolarization (–80 to +20 mV) at 33°C</i> | | | | | |
| τ_{fast} (ms) | ND | 1.5 ± 0.1 | ND | 0.94 ± 0.06 | ND |
| τ_{slow} (ms) | ND | 7.8 ± 1.1 | ND | 7.2 ± 1.5 | ND |
| % fast | ND | 67 ± 2 | ND | 72 ± 1 | ND |
| <i>Return from 1-ms depolarization (+20 to –80 mV) at 33°C</i> | | | | | |
| τ_{fast} (ms) | ND | 2.1 ± 0.4 | ND | 1.5 ± 0.1 | ND |
| τ_{slow} (ms) | ND | 7.1 ± 1.6 | ND | 6.3 ± 0.4 | ND |
| % fast | ND | 53 ± 10 | ND | 60 ± 3 | ND |
| <i>Depolarization (–70 to +30 mV) at 23°C</i> | | | | | |
| τ_{fast} (ms) | 2.4 ± 0.2 | 7.0 ± 0.1 | 8.4 ± 0.2 | 3.7 ± 0.1 | 2.6 ± 0.2 |
| τ_{slow} (ms) | 72 ± 2 | 79 ± 4 | 78 ± 3 | 48 ± 4 | 26 ± 3 |
| % fast | 70 ± 3 | 77 ± 3 | 79 ± 3 | 81 ± 1 | 76 ± 1 |
| <i>Return from depolarization (+30 to –70 mV) at 23°C</i> | | | | | |
| τ_{fast} (ms) | 2.1 ± 0.4 | 16.7 ± 0.6 | 16.2 ± 0.8 | 16.0 ± 0.3 | 22.6 ± 0.6 |
| τ_{slow} (ms) | 75 ± 2 | 116 ± 11 | 115 ± 9 | 102 ± 2 | 93 ± 13 |
| % fast | 53 ± 5 | 65 ± 4 | 74 ± 4 | 81 ± 1 | 84 ± 3 |
| <i>Hyperpolarization (–70 to –100 mV) at 23°C</i> | | | | | |
| τ_{fast} (ms) | 10.5 ± 1.0 | 13.8 ± 2.0 | 12.7 ± 1.5 | 6.8 ± 0.2 | 9.0 ± 0.4 |
| τ_{slow} (ms) | 78 ± 2 | 88 ± 11 | 74 ± 2 | 96 ± 2 | 79 ± 2 |
| % fast | 40 ± 3 | 49 ± 2 | 40 ± 2 | 61 ± 1 | 59 ± 0.2 |
| <i>Return from hyperpolarization (–100 to –70 mV) at 23°C</i> | | | | | |
| τ_{fast} (ms) | 7.0 ± 0.2 | 12.6 ± 2.0 | 11.8 ± 1.5 | 5.2 ± 0.3 | 5.4 ± 0.2 |
| τ_{slow} (ms) | 77 ± 2 | 110 ± 22 | 85 ± 4 | 93 ± 5 | 69 ± 2 |
| % fast | 50 ± 3 | 54 ± 2 | 53 ± 2 | 67 ± 1 | 66 ± 1 |
| <i>Return from 1-ms depolarization (+20 to –80 mV) at 33°C</i> | | | | | |
| τ_{fast} (ms) | ND | 2.1 ± 0.4 | ND | 1.5 ± 0.1 | ND |
| τ_{slow} (ms) | ND | 7.1 ± 1.6 | ND | 6.3 ± 0.4 | ND |
| % fast | ND | 53 ± 10 | ND | 60 ± 3 | ND |

Kinetics were measured in response to 500-ms voltage steps unless otherwise indicated. Values at 23°C are mean ± SEM from 4 (ASAP1), 4 (ASAP2f 414Q), 9 (ASAP2s), 12 (ASAP3), or 6 (ASAP3-Kv) HEK293 cells. Values at 33°C are mean ± SEM from 7 (ASAP2s) or 16 (ASAP3) CHO cells. ND, not determined.