

**TABLE E2.** Characteristics of patients with peripheral blood KIT p.D816V missense variant arranged according to BST level

| Patient No. | Sex | Age | Culprit history | BST Grade* | BST   |         |         | KIT p.D816V % positive alleles | CVD comorbidity | Time to onset of symptoms (min) | Skin symptoms | Unconsciousness | First-line therapy      | Previous anaphylaxis       | Relaps after finishing previous VIT | Initiated VIT | Skin lesions† | Bone marrow assessment |
|-------------|-----|-----|-----------------|------------|-------|---------|---------|--------------------------------|-----------------|---------------------------------|---------------|-----------------|-------------------------|----------------------------|-------------------------------------|---------------|---------------|------------------------|
|             |     |     |                 |            | level | slgE i1 | slgE i3 |                                |                 |                                 |               |                 |                         |                            |                                     |               |               |                        |
| 1           | M   | 64  | Honeybee        | III        | 1.72  | 3.18    | 0.91    | 0.004                          | Yes             | 0-10                            | No            | No              | Ah, CS                  | Unknown                    | No VIT                              | Yes           | No            | Rejected               |
| 2           | F   | 68  | Unk. Hym        | IV         | 3.27  | 2.73    | 48.2    | 0.003                          | Yes             | 0-10                            | Yes           | No              | CS                      | LLR                        | No VIT                              | Yes           | No            | Rejected               |
| 3           | M   | 66  | Vespinae spp    | IV         | 3.39  | 6.54    | 3.43    | 0.001                          | Yes             | 0-10                            | Yes           | No              | CS, Epi                 | IV (10y ago)               | No VIT                              | Rejected      | No            | Rejected               |
| 4           | M   | 25  | Unk. Hym        | IV         | 3.84  | <0.35   | 36.9    | 0.011                          | No              | 11-30                           | Yes           | No              | CS, Epi                 | No                         | No VIT                              | Yes           | No            | Rejected               |
| 5           | M   | 51  | Unk. Hym        | IV         | 3.99  | 0.43    | <0.35   | 0.003                          | No              | 0-10                            | Yes           | No              | Unknown                 | No                         | No VIT                              | Yes           | No            | Rejected               |
| 6           | M   | 48  | Unk. Hym        | IV         | 4     | 9.07    | 3.06    | 0.007                          | Yes             | 0-10                            | Unknown       | Yes             | Ah, CS, Epi             | No                         | No VIT                              | Yes           | No            | Rejected               |
| 7           | F   | 43  | Honeybee        | IV         | 4.56  | 23.5    | <0.35   | 0.002                          | No              | 0-10                            | Yes           | Yes             | Ah, CS, Epi             | No                         | No VIT                              | Yes           | No            | Rejected               |
| 8           | M   | 69  | Unk. Hym        | IV         | 4.72  | <0.35   | 12.8    | 0.003                          | Yes             | 0-10                            | Yes           | No              | Ah, CS                  | No                         | No VIT                              | Yes           | No            | Rejected               |
| 9           | M   | 36  | Vespinae spp    | III        | 4.81  | 0.55    | 20      | 0.002                          | No              | 0-10                            | Yes           | No              | Ah, CS                  | II (11y ago), III (3y ago) | No VIT                              | Yes           | No            | Rejected               |
| 10          | M   | 36  | Vespinae spp    | III        | 4.93  | 2.89    | 12.8    | 0.001                          | No              | 11-30                           | Yes           | No              | Unknown                 | No                         | No VIT                              | Yes           | No            | Rejected               |
| 11          | M   | 59  | Vespinae spp    | III        | 5.13  | 0.91    | 1.49    | 0.001                          | Yes             | 0-10                            | Yes           | No              | Ah, CS, Epi             | No                         | No VIT                              | Yes           | No            | Rejected               |
| 12          | M   | 34  | Honeybee        | IV         | 5.13  | 24.8    | 0.98    | 0.013                          | No              | 0-10                            | No            | Yes             | Unknown                 | Unknown                    | No VIT                              | Yes           | No            | Rejected               |
| 13          | F   | 56  | Honeybee        | IV         | 5.53  | 0.86    | <0.35   | 0.009                          | No              | 0-10                            | No            | Yes             | Unknown                 | LLR                        | No VIT                              | Yes           | No            | Rejected               |
| 14          | F   | 73  | Honeybee        | IV         | 5.58  | 30.2    | 2.89    | 0.023                          | Yes             | 11-30                           | Yes           | No              | Ah, CS, Epi             | II (15y ago)               | No VIT                              | Rejected      | No            | Rejected               |
| 15          | M   | 53  | Vespinae spp    | IV         | 5.62  | 0.78    | 2.61    | 0.007                          | Yes             | 0-10                            | No            | Yes             | Ah, CS, Epi, Intubation | No                         | No VIT                              | Yes           | No            | Rejected               |
| 16          | F   | 51  | Unk. Hym        | IV         | 5.86  | 0.42    | 1.02    | 0.032                          | Yes             | 0-10                            | No            | Yes             | Unknown                 | IV (11y ago)               | Yes (YJ VIT 2009-13)                | Yes           | No            | Rejected               |
| 17          | M   | 54  | Vespinae spp    | IV         | 6.01  | <0.35   | 1.7     | 0.041                          | Yes             | 0-10                            | Unknown       | Yes             | Ah, CS, Epi             | II (21y ago)               | No VIT                              | Yes           | No            | ISM                    |
| 18          | M   | 65  | Honeybee        | IV         | 6.12  | 3.71    | <0.35   | 0.004                          | Yes             | 0-10                            | No            | Yes             | Ah, CS                  | No                         | No VIT                              | Yes           | No            | Rejected               |
| 19          | F   | 58  | Vespinae spp    | IV         | 6.32  | <0.35   | 0.75    | 0.020                          | No              | 0-10                            | No            | Yes             | Ah, CS, Epi             | IV (9y ago)                | Yes (YJ VIT 2011-15)                | Yes           | No            | Rejected               |
| 20          | M   | 48  | Unk. Hym        | IV         | 6.97  | <0.35   | 6.7     | 0.015                          | No              | 11-30                           | Yes           | No              | Ah, CS                  | IV (2y ago)                | No VIT                              | Yes           | No            | Rejected               |
| 21          | M   | 44  | Vespinae spp    | IV         | 7.11  | 3.79    | <0.35   | 0.003                          | No              | 0-10                            | No            | Yes             | Epi                     | II (10y ago)               | No VIT                              | Yes           | No            | Rejected               |
| 22          | F   | 62  | Unk. Hym        | IV         | 7.29  | <0.35   | 1.75    | 0.002                          | Yes             | 0-10                            | Unknown       | No              | Epi                     | Unknown                    | No VIT                              | Yes           | No            | Rejected               |
| 23          | M   | 60  | Vespinae spp    | IV         | 7.97  | 0.41    | 2.57    | 0.008                          | No              | 0-10                            | Yes           | No              | Unknown                 | IV (10y ago)               | No VIT                              | Yes           | No            | Rejected               |
| 24          | M   | 67  | Vespinae spp    | IV         | 8.61  | <0.35   | 16.1    | 0.071                          | Yes             | 0-10                            | No            | Yes             | Ah, CS, Epi             | IV (5y ago)                | No VIT                              | Yes           | No            | Rejected               |
| 25          | M   | 33  | Honeybee        | IV         | 8.83  | 2.87    | <0.35   | 0.013                          | No              | 0-10                            | Unknown       | Yes             | Ah, CS, Epi             | No                         | No VIT                              | Yes           | No            | Rejected               |
| 26          | F   | 68  | Vespinae spp    | IV         | 8.9   | 0.39    | 6.95    | 0.004                          | Yes             | 0-10                            | No            | Yes             | Ah, CS,Epi              | No                         | No VIT                              | Yes           | No            | Rejected               |
| 27          | F   | 65  | Vespinae spp    | IV         | 9.5   | <0.35   | 93.3    | 0.215                          | No              | 0-10                            | No            | Yes             | CS                      | No                         | No VIT                              | Yes           | No            | Rejected               |
| 28          | M   | 36  | Vespinae spp    | IV         | 10.3  | 0.38    | 5.48    | 0.025                          | No              | 0-10                            | Yes           | No              | Ah, CS, Epi             | No                         | No VIT                              | Yes           | No            | Rejected               |
| 29          | F   | 73  | Honeybee        | IV         | 13    | 1.68    | <0.35   | 0.160                          | Yes             | 0-10                            | No            | Yes             | Unknown                 | IV (4y ago)                | No VIT                              | Yes           | No            | Rejected               |
| 30          | F   | 58  | Vespinae spp    | IV         | 16.1  | <0.35   | 2.2     | 0.009                          | No              | 11-30                           | Yes           | Yes             | Unknown                 | No                         | No VIT                              | Yes           | No            | ISM                    |
| 31          | F   | 39  | Vespinae spp    | IV         | 16.5  | 3.73    | 2.61    | 0.013                          | No              | 11-30                           | No            | Yes             | Ah, CS, Epi             | No                         | No VIT                              | Yes           | No            | Rejected               |
| 32          | M   | 51  | Honeybee        | IV         | 18.4  | 0.37    | <0.35   | 0.060                          | No              | 0-10                            | Unknown       | Yes             | Ah, CS, Epi             | IV (12y ago)               | Yes (HB VIT 2007-17)                | Yes           | No            | ISM                    |
| 33          | M   | 59  | Vespinae spp    | IV         | 19.4  | 5.26    | 16.6    | 0.016                          | Yes             | 0-10                            | Unknown       | No              | Ah, CS                  | IV (9y ago)                | Yes (YJ VIT 2011-16; HB 2013-18)    | Yes           | No            | ISM                    |
| 34‡         | F   | 55  | Vespinae spp    | IV         | 26.4  | 3.26    | 0.74    | 0.004                          | No              | 0-10                            | No            | Yes             | Ah, CS, Epi             | IV (16y ago)               | Yes (YJ VIT 2004-09)                | Yes           | No            | ISM                    |

Ah, Antihistamines (intravenous administration); CS, corticosteroids (intravenous administration); CVD, cardiovascular disease; Epi, Epinephrine; HB, Honeybee; ISM, indolent systemic mastocytosis; Unk. Hym, unknown Hymenoptera insect; VIT, venom immunotherapy; YJ, yellow jacket.

\*Grades were assigned according to the Mueller grading system.<sup>E7</sup>

†Exhibited outside acute episode.

‡This individual has HαT (TPSAB1 genotype αα/β).