**Supplemental Material**

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| **Supplemental Table 1. Study design and patient eligibility criteria for KarMMa and MAMMOTH.** | | |
| **Characteristic** | **KarMMa** | **MAMMOTH** |
| **Number of patients** | **N = 128** | **N = 249** |
| Study design | Phase 2, open-label, multicenter (20 sites), single-arm clinical trial | Multicenter (14 sites) retrospective observational study |
| Actual study start date | Dec 13, 2017 | NA† |
| Primary completion date | Primary analysis based on data cutoff of Jan 14, 2020 | NA† |
| Study site locations | Canada, Europe (Belgium, France, Germany, Spain, Italy), and USA | US |
| Age, y | ≥18 | ND |
| ECOG PS | 0-1 | ND |
| Exposure to prior regimens | ≥3 prior antimyeloma regimens, including an immunomodulatory drug, a PI, and an anti-CD38 mAb | (Not an eligibility requirement) |
| Refractoriness to prior regimens | Refractory to last regimen of treatment | Refractory to daratumumab or isatuximab, administered alone or in combination, as the last line of treatment |
| Definition of refractoriness | Documented PD during or within 60 days (measured from the last dose) of completing treatment with the last antimyeloma drug regimen before study entry | Evidence of PD, defined by the IMWG Response Criteria, having progressed while on therapy or within 60 days after last dose of daratumumab or isatuximab |

†Study data were collected between January 2017 and June 2018 in MAMMOTH.

ECOG PS: Eastern Cooperative Oncology Group performance status; IMWG: International Myeloma Working Group; mAb: monoclonal antibody; NA: not applicable; ND: not determined; PD: progressive disease; PI: proteasome inhibitor.

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| **Supplemental Table 2. Summary of patient baseline characteristics in CC population from MAMMOTH with the ide-cel population from KarMMa before and after matching to the CC population from MAMMOTH.** | | | |
| **Characteristic** | **Observed data from KarMMa**  **(ide-cel treated)**  **N = 128** | **KarMMa data matched to MAMMOTH N = 67 (ESS)** | **Observed data from MAMMOTH  N = 249** |
| Age |  |  |  |
| Median (range), y | 60.5 (33–78) | 59.7 (38.0–77.3) | 65 (27–90) |
| ≥65 y, n (%) | 45 (35) | 21 (31) | ND |
| Race† |  |  |  |
| White, n (%) | 103 (80) | 53 (79) | 185 (74) |
| Black, n (%) | 6 (5) | 4 (6) | 38 (15) |
| Other, n (%) | 19 (15) | 10 (15) | 26 (10)‡ |
| Sex, male, n (%) | 76 (59) | 43 (64) | 135 (54) |
| Years from initial diagnosis, median (range) | 6.0 (1.0–17.9) | 4.5 (1.0–17.6) | 4.5 (0.4–19.4) |
| ISS stage at diagnosis, n (%)§ |  |  |  |
| Stage I | 26/66 (39) | 25 (37) | 63/212 (30) |
| Stage II | 22/66 (33) | 20 (30) | 80/212 (38) |
| Stage III | 18/66 (27) | 22 (33) | 69/212 (33) |
| Not evaluable | 62 | ND | 37 |
| Immunoglobulin subtype, n (%) |  |  |  |
| IgG | 79 (62) | 38 (57) | 130 (52) |
| IgA | 24 (19) | 15 (22) | 51 (20) |
| Light chain | 19 (15) | 11 (17) | 59 (24) |
| Other | 6 (5) | 3 (4) | 9 (4) |
| Exposure to prior anti-myeloma regimens |  |  |  |
| Prior lines, median (range) | 6 (3–16) | 4.7 (3–16) | 5 (2–17) |
| Bortezomib, n (%) | 125 (98) | ND | ND |
| Carfilzomib, n (%) | 97 (76) | ND | ND |
| Lenalidomide, n (%) | 128 (100) | ND | ND |
| Pomalidomide, n (%) | 116 (91) | ND | ND |
| Refractoriness to prior regimens, n (%) |  |  |  |
| Penta-refractory¶ | 50 (39) | 11 (16) | 63 (25) |
| Bortezomib | 78 (61) | 46 (69) | 172 (69) |
| Carfilzomib | 85 (66) | 31 (46) | 116 (47) |
| Ixazomib | 28 (22) | 12 (18) | 31 (12) |
| Thalidomide | 22 (17) | 9 (13) | 20 (8) |
| Lenalidomide | 97 (76) | 52 (78) | 193 (78) |
| Pomalidomide | 100 (78) | 44 (66) | 162 (65) |
| Elotuzumab | ND | ND | 29 (12) |
| Daratumumab | 109 (85) | 55 (82) | 230 (92) |
| Isatuximab | 13 (10) | 6 (9) | 19 (8) |
| Prior autologous stem cell transplantation, n (%) | 120 (94) | 61 (91) | 185 (74) |
| Chromosomal abnormality, n (%)§# | 45/111 (41) | 31 (46) | 71/229 (31) |

†Due to rounding, percentages do not always add up to 100.

‡There were 5 Hispanic patients and 21 patients of other races in MAMMOTH.

§Percentages are calculated relative to the number of evaluable patients.

¶Refractory to 1 anti-CD38 monoclonal antibody, 2 proteasome inhibitors, and 2 immunomodulatory drugs.

#t(4;14), t(14;16), or del17p.

CC: conventional care; ESS: effective sample size; ide-cel: idecabtagene vicleucel; ISS: International Staging System; ND: not determined.