**SUPPLEMENTAL FIGURE LEGENDS**

**SUPPLEMENTAL FIGURE 1: PFS and OS for Total Alterations ≥6 versus <6 Groups**

**Panel A:** Progression-free survival (PFS) is shown for 69 patients treated with checkpoint inhibitor-based immunotherapy. Comparison groups are those with ≥6 total ctDNA alterations (in blue) versus <6 total ctDNA alterations (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients who are still progression free at the designated time; they were censored at that point.

**Panel B:** Overall survival (OS) is shown for 69 patients treated with checkpoint inhibitor-based immunotherapy. Comparison groups are those with ≥6 total ctDNA alterations (in blue) versus <6 total ctDNA alterations (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients still alive at the designated time; they were censored at that point.

**SUPPLEMENTAL FIGURE 2: Landmark Analyses of PFS at 2 Months for Responders and Non-Responders, Total Alterations ≥6 versus <6 Groups**

**Panel A:** A 2-month landmark study for PFS is shown for 16 patients treated with checkpoint inhibitor-based immunotherapy who had ≥6 total ctDNA alterations. Comparison groups are those who achieved response (CR or PR) (in blue) versus those who did not achieve response (SD or PD) (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients who are still progression free at the designated time; they were censored at that point.

**Panel B:** A 2-month landmark study for PFS is shown for 25 patients treated with checkpoint inhibitor-based immunotherapy who had <6 total ctDNA alterations. Comparison groups are those who achieved response (CR or PR) (in blue) versus those who did not achieve response (SD or PD) (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients who are still progression free at the designated time; they were censored at that point.

**Panel C:** A 2-month landmark study for PFS is shown for 15 patients treated with checkpoint inhibitor-based immunotherapy who had achieved response (CR or PR). Comparison groups are those with ≥6 total ctDNA alterations (in blue) versus <6 total ctDNA alterations (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients who are still progression free at the designated time; they were censored at that point.

**Panel D:** A 2-month landmark study for PFS is shown for 26 patients treated with checkpoint inhibitor-based immunotherapy who had not achieved response (SD or PD). Comparison groups are those with ≥6 total ctDNA alterations (in blue) versus <6 total ctDNA alterations (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients who are still progression free at the designated time; they were censored at that point.

**SUPPLEMENTAL FIGURE 3: Landmark Analyses at 2 Months for OS in Responders and Non-Responders, Total Alterations ≥6 versus <6 Groups**

**Panel A:** A 2-month landmark study for OS is shown for 19 patients treated with checkpoint inhibitor-based immunotherapy who had ≥6 total ctDNA alterations. Comparison groups are those who achieved response (CR or PR) (in blue) versus those who did not achieve response (SD or PD) (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients still alive at the designated time; they were censored at that point.

**Panel B:** A 2-month landmark study for OS is shown for 35 patients treated with checkpoint inhibitor-based immunotherapy who had <6 total ctDNA alterations. Comparison groups are those who achieved response (CR or PR) (in blue) versus those who did not achieve response (SD or PD) (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients still alive at the designated time; they were censored at that point.

**Panel C:** A 2-month landmark study for OS is shown for 15 patients treated with checkpoint inhibitor-based immunotherapy who had achieved response (CR or PR). Comparison groups are those with ≥6 total ctDNA alterations (in blue) versus <6 total ctDNA alterations (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients still alive at the designated time; they were censored at that point.

**Panel D:** A 2-month landmark study for OS is shown for 39 patients treated with checkpoint inhibitor-based immunotherapy who had not achieved response (SD or PD). Comparison groups are those with ≥6 total ctDNA alterations (in blue) versus <6 total ctDNA alterations (in red). Data is calculated by method of Kaplan Meier, with log-rank p values. Course 1, day 1 of first immunotherapy represents starting point. Tick marks represent patients still alive at the designated time; they were censored at that point.