**Supplementary Table 1. List of all significant genetic alterations observed in this study.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Platform** | **Test** | **Positive** | **Negative** | **Total** | **% Q1** | **Positive** | **Negative** | **Total** | **% Q2** | **Positive** | **Negative** | **Total** | **% Q3** | **Positive** | **Negative** | **Total** | **% Q4** | **p**  | **q** | **p** | **q** |
| **CNA** | CD74 | 6 | 727 | 733 | 0.80% | 2 | 728 | 730 | 0.30% | 1 | 772 | 773 | 0.10% | 0 | 785 | 785 | 0.00% | 0.02 | 0.39 | 0.01 | 0.32 |
|  | CD79A | 10 | 725 | 735 | 1.40% | 5 | 724 | 729 | 0.70% | 2 | 773 | 775 | 0.30% | 2 | 785 | 787 | 0.30% | 0.03 | 0.55 | 0.01 | 0.33 |
|  | CDK4 | 5 | 732 | 737 | 0.70% | 2 | 731 | 733 | 0.30% | 0 | 776 | 776 | 0.00% | 0 | 789 | 789 | 0.00% | 0.01 | 0.31 | 0.03 | 0.44 |
|  | CDX2 | 11 | 717 | 728 | 1.50% | 2 | 723 | 725 | 0.30% | 6 | 761 | 767 | 0.80% | 2 | 765 | 767 | 0.30% | 0.01 | 0.31 | 0.01 | 0.26 |
|  | CIC | 13 | 719 | 732 | 1.80% | 6 | 722 | 728 | 0.80% | 7 | 762 | 769 | 0.90% | 3 | 767 | 770 | 0.40% | 0.05 | 0.65 | 0.01 | 0.26 |
|  | CSF1R | 3 | 731 | 734 | 0.40% | 1 | 730 | 731 | 0.10% | 0 | 774 | 774 | 0.00% | 0 | 789 | 789 | 0.00% | 0.04 | 0.63 | 0.11 | 0.90 |
|  | ERBB2 | 15 | 716 | 731 | 2.10% | 4 | 719 | 723 | 0.60% | 8 | 763 | 771 | 1.00% | 1 | 772 | 773 | 0.10% | 0.00 | 0.08 | <0.001 | <0.05 |
|  | FGF19 | 18 | 708 | 726 | 2.50% | 12 | 706 | 718 | 1.70% | 8 | 747 | 755 | 1.10% | 5 | 751 | 756 | 0.70% | 0.02 | 0.45 | 0.00 | 0.20 |
|  | FGF3 | 26 | 667 | 693 | 3.80% | 14 | 668 | 682 | 2.10% | 12 | 695 | 707 | 1.70% | 9 | 683 | 692 | 1.30% | 0.01 | 0.31 | 0.00 | 0.18 |
|  | FGF4 | 16 | 707 | 723 | 2.20% | 10 | 708 | 718 | 1.40% | 5 | 753 | 758 | 0.70% | 4 | 754 | 758 | 0.50% | 0.01 | 0.31 | 0.00 | 0.20 |
|  | FGFR3 | 17 | 708 | 725 | 2.30% | 15 | 699 | 714 | 2.10% | 6 | 747 | 753 | 0.80% | 5 | 746 | 751 | 0.70% | 0.01 | 0.31 | 0.01 | 0.26 |
|  | FGFR4 | 9 | 706 | 715 | 1.30% | 3 | 705 | 708 | 0.40% | 4 | 741 | 745 | 0.50% | 0 | 751 | 751 | 0.00% | 0.01 | 0.31 | 0.00 | 0.10 |
|  | HMGA2 | 7 | 608 | 615 | 1.10% | 6 | 622 | 628 | 1.00% | 2 | 686 | 688 | 0.30% | 1 | 712 | 713 | 0.10% | 0.04 | 0.63 | 0.03 | 0.44 |
|  | HSP90AB1 | 7 | 722 | 729 | 1.00% | 0 | 725 | 725 | 0.00% | 2 | 770 | 772 | 0.30% | 0 | 785 | 785 | 0.00% | 0.00 | 0.08 | 0.01 | 0.22 |
|  | MYC | 20 | 716 | 736 | 2.70% | 19 | 714 | 733 | 2.60% | 10 | 766 | 776 | 1.30% | 5 | 784 | 789 | 0.60% | 0.00 | 0.21 | 0.00 | 0.10 |
|  | NSD3 | 5 | 445 | 450 | 1.10% | 5 | 491 | 496 | 1.00% | 2 | 536 | 538 | 0.40% | 0 | 551 | 551 | 0.00% | 0.03 | 0.55 | 0.02 | 0.37 |
|  | PDCD1 | 17 | 714 | 731 | 2.30% | 14 | 715 | 729 | 1.90% | 7 | 761 | 768 | 0.90% | 4 | 772 | 776 | 0.50% | 0.01 | 0.31 | 0.00 | 0.16 |
|  | PER1 | 8 | 694 | 702 | 1.10% | 1 | 684 | 685 | 0.10% | 1 | 735 | 736 | 0.10% | 2 | 746 | 748 | 0.30% | 0.02 | 0.38 | 0.06 | 0.67 |
|  | RARA | 5 | 455 | 460 | 1.10% | 0 | 502 | 502 | 0.00% | 3 | 538 | 541 | 0.60% | 1 | 553 | 554 | 0.20% | 0.04 | 0.63 | 0.10 | 0.90 |
|  | TNFRSF14 | 15 | 719 | 734 | 2.00% | 7 | 724 | 731 | 1.00% | 4 | 770 | 774 | 0.50% | 1 | 786 | 787 | 0.10% | 0.00 | 0.08 | <0.0001 | <0.05 |
| **NGS** | BRAF | 6 | 732 | 738 | 0.80% | 10 | 732 | 742 | 1.30% | 17 | 764 | 781 | 2.20% | 5 | 797 | 802 | 0.60% | 0.03 | 0.53 | 0.66 | 1.00 |
|  | GNAS | 4 | 744 | 748 | 0.50% | 10 | 735 | 745 | 1.30% | 17 | 766 | 783 | 2.20% | 29 | 773 | 802 | 3.60% | 0.00 | 0.02 | 0.00 | 0.01 |
|  |  LOH | 49 | 232 | 281 | 17.40% | 48 | 186 | 234 | 20.50% | 27 | 206 | 233 | 11.60% | 26 | 215 | 241 | 10.80% | 0.01 | 0.29 | 0.03 | 0.46 |
|  | MITF | 0 | 723 | 723 | 0.00% | 8 | 707 | 715 | 1.10% | 5 | 764 | 769 | 0.70% | 1 | 794 | 795 | 0.10% | 0.00 | 0.19 | 1.00 | 1.00 |
|  | MSH2 | 1 | 734 | 735 | 0.10% | 5 | 727 | 732 | 0.70% | 2 | 772 | 774 | 0.30% | 0 | 795 | 795 | 0.00% | 0.04 | 0.63 | 0.48 | 1.00 |
|  | NF2 | 1 | 739 | 740 | 0.10% | 4 | 738 | 742 | 0.50% | 0 | 778 | 778 | 0.00% | 0 | 799 | 799 | 0.00% | 0.01 | 0.31 | 0.48 | 1.00 |
|  | TP53 | 604 | 131 | 735 | 82.20% | 584 | 147 | 731 | 79.90% | 582 | 180 | 762 | 76.40% | 567 | 213 | 780 | 72.70% | 0.00 | 0.02 | <0.0001 | q<0.05 |
|  | KRAS | 657 | 75 | 732 | 89.80% | 651 | 86 | 737 | 88.30% | 698 | 76 | 774 | 90.20% | 691 | 90 | 781 | 88.50% | 0.57 | 0.96 | 0.43 | 1.00 |