**Supplementary Table S2 Mutational information of top nine genes and NRAS**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Patient ID | Gene | Exon | Base mutation | Change of protein | ref | alt | Mutation frequency | MSI | TMB(muts/Mb) |
| SZ20211109015PES-5 | *BRAF* | exon15 | c.1799T>A | p.V600E | A | T | 27.06 | MSI-H | 62.5 |
| SZ20211109015PES-5 | *TP53* | exon7 | c.707A>G | p.Y236C | T | C | 26.97 | MSI-H | 62.5 |
| SZ20211109015PES-5 | *TP53* | exon10 | c.993+2T>C | p.? | A | G | 22.89 | MSI-H | 62.5 |
| SZ20211109015PES-5 | *APC* | exon16 | c.3135G>T | p.Q1045H | G | T | 21 | MSI-H | 62.5 |
| SZ20201106024PES-7 | *APC* | exon16 | c.4012C>T | p.Q1338\* | C | T | 16.19 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *APC* | exon9 | c.904C>T | p.R302\* | C | T | 15.07 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *KRAS* | exon2 | c.38G>A | p.G13D | C | T | 14.61 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *FBXW7* | exon10 | c.1520T>C | p.M507T | A | G | 14.5 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *ATM* | exon29 | c.4402G>A | p.V1468I | G | A | 14.2 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *SYNE1* | exon55 | c.8657del | p.K2886Sfs\*8 | T | - | 12.38 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *LRP1B* | exon54 | c.8527C>T | p.R2843\* | G | A | 11.14 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *BRAF* | exon1 | c.95\_100del | p.G32\_A33del | CGGCGC | - | 24.66 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *SYNE1* | exon55 | c.8659T>G | p.L2887V | A | C | 0.86 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *SYNE1* | exon106 | c.19494G>T | p.E6498D | C | A | 0.83 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *SYNE1* | exon41 | c.5750A>G | p.N1917S | T | C | 1.39 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *SYNE1* | exon8 | c.484G>A | p.V162M | C | T | 2.1 | MSI-H | 36.84 |
| SZ20201106024PES-7 | *ATM* | exon13 | c.1974C>A | p.D658E | C | A | 1.71 | MSI-H | 36.84 |
| SZ20210203008TUT-5 | *ATM* | exon47 | c.6908del | p.K2303Rfs\*7 | A | - | 12.45 | MSI-H | 34.87 |
| SZ20210203008TUT-5 | *APC* | exon16 | c.4393\_4394dup | p.S1465Rfs\*9 | - | AG | 11.21 | MSI-H | 34.87 |
| SZ20210203008TUT-5 | *APC* | exon6 | c.637C>T | p.R213\* | C | T | 10.02 | MSI-H | 34.87 |
| SZ20210203008TUT-5 | *FBXW7* | exon6 | c.817del | p.S273Vfs\*24 | T | - | 9.7 | MSI-H | 34.87 |
| SZ20210203008TUT-5 | *PIK3CA* | exon2 | c.263G>A | p.R88Q | G | A | 9.58 | MSI-H | 34.87 |
| SZ20210203008TUT-5 | *LRP1B* | exon59 | c.9299dup | p.N3100Kfs\*6 | - | T | 9.46 | MSI-H | 34.87 |
| SZ20210203008TUT-5 | *PIK3CA* | exon3 | c.370C>T | p.P124S | C | T | 6.98 | MSI-H | 34.87 |
| SZ20210825015PES-1 | *APC* | exon16 | c.8140C>T | p.R2714C | C | T | 12.96 | MSI-H | 28.29 |
| SZ20210825015PES-1 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 12.83 | MSI-H | 28.29 |
| SZ20210825015PES-1 | *SYNE1* | exon41 | c.5675G>A | p.R1892H | C | T | 11.76 | MSI-H | 28.29 |
| SZ20210825015PES-1 | *APC* | exon16 | c.3734del | p.K1245Rfs\*20 | A | - | 13.16 | MSI-H | 28.29 |
| SZ20200922003PES-4 | *KRAS* | exon2 | c.35G>T | p.G12V | C | A | 12.42 | MSI-H | 11.84 |
| SZ20200922003PES-4 | *SYNE1* | exon135 | c.24345G>T | p.E8115D | C | A | 6.6 | MSI-H | 11.84 |
| SZ20200922003PES-4 | *BRAF* | exon15 | c.1799T>A | p.V600E | A | T | 6.56 | MSI-H | 11.84 |
| SZ20200922003PES-4 | *SYNE1* | exon14 | c.1347A>G | p.I449M | T | C | 4.8 | MSI-H | 11.84 |
| SZ20210313023TUT-e | *ATM* | exon29 | c.4397G>A | p.R1466Q | G | A | 24.76 | MSS | 9.21 |
| SZ20210313023TUT-e | *KRAS* | exon2 | c.35G>T | p.G12V | C | A | 19.15 | MSS | 9.21 |
| SZ20210313023TUT-e | *TP53* | exon7 | c.743G>A | p.R248Q | C | T | 14.45 | MSS | 9.21 |
| SZ20210313023TUT-e | *APC* | exon16 | c.4655\_4656del | p.E1552Gfs\*6 | AG | - | 8.57 | MSS | 9.21 |
| SZ20210313023TUT-e | *SYNE1* | exon117 | c.21325C>A | p.L7109M | G | T | 7.89 | MSS | 9.21 |
| SZ20211102010PES-f | *TP53* | exon7 | c.745A>T | p.R249W | T | A | 27.45 | MSS | 8.55 |
| SZ20211102010PES-f | *PIK3CA* | exon20 | c.2815G>A | p.D939N | G | A | 23.32 | MSS | 8.55 |
| SZ20210514039PES-0 | *ATM* | exon14 | c.2165\_2166del | p.L722Cfs\*15 | TG | - | 15.09 | MSS | 8.55 |
| SZ20210514039PES-0 | *KRAS* | exon2 | c.35G>T | p.G12V | C | A | 16.56 | MSS | 8.55 |
| SZ20210514039PES-0 | *ATM* | exon57 | c.8287C>T | p.R2763\* | C | T | 15.1 | MSS | 8.55 |
| SZ20211102010PES-f | *LRP1B* | exon30 | c.5081A>C | p.K1694T | T | G | 15.28 | MSS | 8.55 |
| SZ20211102010PES-f | *LRP1B* | exon91 | c.13796C>T | p.A4599V | G | A | 14.55 | MSS | 8.55 |
| SZ20200805013PES-3 | *TP53* | exon4 | c.365\_366del | p.V122Dfs\*26 | CA | - | 53.59 | MSS | 7.89 |
| SZ20200805013PES-3 | *LRP1B* | exon35 | c.5647T>C | p.Y1883H | A | G | 24 | MSS | 7.89 |
| SZ20200805013PES-3 | *APC* | exon15 | c.1934T>A | p.L645\* | T | A | 22.22 | MSS | 7.89 |
| SZ20200805013PES-3 | *APC* | exon16 | c.4463del | p.L1488Yfs\*19 | T | - | 21.17 | MSS | 7.89 |
| SZ20200805013PES-3 | *SYNE1* | exon52 | c.7910A>G | p.E2637G | T | C | 2.74 | MSS | 7.89 |
| SZ20220526038TUT-5 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 42.52 | MSS | 7.24 |
| SZ20220526038TUT-5 | *TP53* | exon6 | c.578A>G | p.H193R | T | C | 35.19 | MSS | 7.24 |
| SZ20201021007PES-9 | *APC* | exon16 | c.3983\_3987del | p.Q1328Pfs\*2 | CACAG | - | 29.93 | MSS | 7.24 |
| SZ20220526038TUT-5 | *APC* | exon16 | c.4666dup | p.T1556Nfs\*3 | - | A | 26.93 | MSS | 7.24 |
| SZ20201021007PES-9 | *KRAS* | exon2 | c.38G>A | p.G13D | C | T | 26.35 | MSS | 7.24 |
| SZ20201020023TUT-b | *APC* | exon16 | c.4348C>T | p.R1450\* | C | T | 24.56 | MSS | 7.24 |
| SZ20220526038TUT-5 | *SYNE1* | exon54 | c.8381C>T | p.T2794M | G | A | 24.34 | MSS | 7.24 |
| SZ20201020023TUT-b | *APC* | exon16 | c.3105del | p.Q1035Hfs\*2 | G | - | 22.96 | MSS | 7.24 |
| SZ20201020023TUT-b | *BRAF* | exon18 | c.2285C>T | p.A762V | G | A | 22.62 | MSS | 7.24 |
| SZ20201020023TUT-b | *SYNE1* | exon74 | c.12137C>T | p.T4046M | G | A | 20.85 | MSS | 7.24 |
| SZ20210911010PES-f | *TP53* | exon6 | c.613T>C | p.Y205H | A | G | 11.83 | MSS | 7.24 |
| SZ20210911010PES-f | *BRAF* | exon15 | c.1799T>A | p.V600E | A | T | 10.26 | MSS | 7.24 |
| SZ20210911010PES-f | *LRP1B* | exon64 | c.10063T>A | p.F3355I | A | T | 6.54 | MSS | 7.24 |
| SZ20201021007PES-9 | *FBXW7* | exon8 | c.1153C>T | p.R385C | G | A | 14.44 | MSS | 7.24 |
| SZ20220526038TUT-5 | *APC* | exon16 | c.2467del | p.S823Hfs\*4 | T | - | 12.5 | MSS | 7.24 |
| SZ20220526038TUT-5 | *LRP1B* | exon53 | c.8445A>T | p.K2815N | T | A | 8.74 | MSS | 7.24 |
| SZ20220526038TUT-5 | *SYNE1* | exon18 | c.1949A>G | p.K650R | T | C | 8.42 | MSS | 7.24 |
| SZ20220526038TUT-5 | *BRAF* | exon17 | c.2011C>T | p.R671\* | G | A | 3.07 | MSS | 7.24 |
| SZ20210717042PES-3 | *TP53* | exon7 | c.751dup | p.I251Nfs\*13 | - | T | 32.07 | MSS | 6.87 |
| SZ20210717042PES-3 | *APC* | exon16 | c.4216C>T | p.Q1406\* | C | T | 43.12 | MSS | 6.87 |
| SZ20200714002PES-d | *FBXW7* | exon9 | c.1319A>G | p.D440G | T | C | 23.67 | MSS | 6.58 |
| SZ20200714002PES-d | *APC* | exon16 | c.4466del | p.L1489Yfs\*18 | T | - | 20.32 | MSS | 6.58 |
| SZ20210904014PES-4 | *TP53* | exon8 | c.832C>T | p.P278S | G | A | 25.94 | MSS | 6.58 |
| SZ20210904014PES-4 | *LRP1B* | exon14 | c.2195T>G | p.V732G | A | C | 7.08 | MSS | 6.58 |
| SZ20210821028PES-e | *SYNE1* | exon38 | c.5121G>T | p.Q1707H | C | A | 14.01 | MSS | 6.58 |
| SZ20210821028PES-e | *LRP1B* | exon60 | c.9561A>C | p.R3187S | T | G | 8.14 | MSS | 6.58 |
| SZ20210821028PES-e | *SYNE1* | exon89 | c.16885G>A | p.E5629K | C | T | 23.69 | MSS | 6.58 |
| SZ20210821028PES-e | *TP53* | exon7 | c.757A>C | p.T253P | T | G | 22.96 | MSS | 6.58 |
| SZ20210821028PES-e | *KRAS* | exon2 | c.38G>A | p.G13D | C | T | 22.23 | MSS | 6.58 |
| SZ20200714002PES-d | *TP53* | exon7 | c.733G>A | p.G245S | C | T | 19.24 | MSS | 6.58 |
| SZ20200714002PES-d | *KRAS* | exon4 | c.346A>C | p.N116H | T | G | 18.7 | MSS | 6.58 |
| SZ20200714002PES-d | *PIK3CA* | exon20 | c.3140A>G | p.H1047R | A | G | 18.35 | MSS | 6.58 |
| SZ20200725012PES-4 | *PIK3CA* | exon9 | c.1637A>G | p.Q546R | A | G | 17.89 | MSS | 6.58 |
| SZ20200725012PES-4 | *APC* | exon16 | c.4666dup | p.T1556Nfs\*3 | - | A | 15.35 | MSS | 6.58 |
| SZ20200714002PES-d | *BRAF* | exon15 | c.1742A>G | p.N581S | T | C | 15.11 | MSS | 6.58 |
| SZ20200725012PES-4 | *APC* | exon16 | c.3613del | p.S1205Afs\*60 | A | - | 13.51 | MSS | 6.58 |
| SZ20200725012PES-4 | *KRAS* | exon2 | c.38G>A | p.G13D | C | T | 12.2 | MSS | 6.58 |
| SZ20200725012PES-4 | *SYNE1* | exon51 | c.7640C>T | p.T2547M | G | A | 6.9 | MSS | 6.58 |
| SZ20200630003PES-8 | *TP53* | exon5 | c.535C>T | p.H179Y | G | A | 47.64 | MSS | 5.92 |
| SZ20220301016PES-a | *TP53* | exon6 | c.637C>T | p.R213\* | G | A | 44.05 | MSI-L | 5.92 |
| SZ20200924015PES-2 | *TP53* | exon8 | c.817C>T | p.R273C | G | A | 37.38 | MSS | 5.92 |
| SZ20220301016PES-a | *APC* | exon6 | c.637C>T | p.R213\* | C | T | 29.73 | MSI-L | 5.92 |
| SZ20200924015PES-2 | *APC* | exon16 | c.2122A>T | p.K708\* | A | T | 26.53 | MSS | 5.92 |
| SZ20201204001PES-3 | *FBXW7* | exon10 | c.1433C>T | p.S478F | G | A | 26.17 | MSS | 5.92 |
| SZ20200630003PES-8 | *KRAS* | exon2 | c.38G>A | p.G13D | C | T | 24.22 | MSS | 5.92 |
| SZ20200924015PES-2 | *APC* | exon16 | c.3935del | p.G1312Efs\*9 | G | - | 23.95 | MSS | 5.92 |
| SZ20200924015PES-2 | *FBXW7* | exon4 | c.592C>T | p.R198\* | G | A | 23.26 | MSS | 5.92 |
| SZ20200924015PES-2 | *KRAS* | exon2 | c.34G>A | p.G12S | C | T | 22.9 | MSS | 5.92 |
| SZ20200924015PES-2 | *FBXW7* | exon10 | c.1427G>A | p.S476N | C | T | 22.74 | MSS | 5.92 |
| SZ20200924015PES-2 | *PIK3CA* | exon8 | c.1255\_1263del | p.H419\_P421del | ACACTGTCC | - | 22.69 | MSS | 5.92 |
| SZ20201204001PES-3 | *KRAS* | exon2 | c.34G>T | p.G12C | C | A | 22.34 | MSS | 5.92 |
| SZ20200630003PES-8 | *APC* | exon16 | c.4233del | p.S1411Rfs\*4 | T | - | 20.48 | MSS | 5.92 |
| SZ20201204001PES-3 | *APC* | exon10 | c.994C>T | p.R332\* | C | T | 18.68 | MSS | 5.92 |
| SZ20201204001PES-3 | *APC* | exon16 | c.3602del | p.S1201Yfs\*64 | C | - | 17.58 | MSS | 5.92 |
| SZ20200630003PES-8 | *APC* | exon14 | c.1653\_1654dup | p.S552Cfs\*7 | - | TG | 17.45 | MSS | 5.92 |
| SZ20220301016PES-a | *SYNE1* | exon35 | c.4672T>G | p.L1558V | A | C | 15.62 | MSI-L | 5.92 |
| SZ20220301016PES-a | *APC* | exon11 | c.1354\_1355del | p.V452Sfs\*7 | TG | - | 14.95 | MSI-L | 5.92 |
| SZ20201204001PES-3 | *PIK3CA* | exon10 | c.1633G>A | p.E545K | G | A | 13.08 | MSS | 5.92 |
| SZ20201204001PES-3 | *APC* | exon16 | c.4666dup | p.T1556Nfs\*3 | - | A | 12.27 | MSS | 5.92 |
| SZ20200630003PES-8 | *PIK3CA* | exon14 | c.2176G>A | p.E726K | G | A | 6.67 | MSS | 5.92 |
| SZ20220301016PES-a | *NRAS* | CDS | Amplification | 7.20  | 　 | 　 | 　 | MSI-L | 5.92 |
| SZ20210825027PES-9 | *APC* | exon7 | c.681\_688dup | p.R230Pfs\*66 | - | CATACTTC | 3.9 | MSS | 5.34 |
| SZ20210825027PES-9 | *TP53* | exon5 | c.535C>A | p.H179N | G | T | 11.07 | MSS | 5.34 |
| SZ20210825027PES-9 | *TP53* | exon4 | c.332T>C | p.L111P | A | G | 9.6 | MSS | 5.34 |
| SZ20210825027PES-9 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 4.87 | MSS | 5.34 |
| SZ20201031026PES-b | *APC* | exon16 | c.4201del | p.I1401Lfs\*14 | A | - | 70.97 | MSS | 5.26 |
| SZ20211221339TUT-e | *TP53* | exon8 | c.817C>T | p.R273C | G | A | 61.23 | MSS | 5.26 |
| SZ20210323011PES-0 | *FBXW7* | exon10 | c.1552A>C | p.N518H | T | G | 47.56 | MSI-L | 5.26 |
| SZ20200819011PES-6 | *TP53* | exon5 | c.532del | p.H178Tfs\*69 | G | - | 44.59 | MSI-H | 5.26 |
| SZ20201001023PES-6 | *APC* | exon16 | c.4348C>T | p.R1450\* | C | T | 44.47 | MSS | 5.26 |
| SZ20201001023PES-6 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 40.64 | MSS | 5.26 |
| SZ20210323011PES-0 | *TP53* | exon5 | c.518dup | p.R174Efs\*7 | - | A | 39.64 | MSI-L | 5.26 |
| SZ20201031026PES-b | *TP53* | exon5 | c.523\_524delinsTT | p.R175F | G | A | 38.24 | MSS | 5.26 |
| SZ20211221339TUT-e | *BRAF* | exon6 | c.722C>T | p.T241M | G | A | 37.52 | MSS | 5.26 |
| SZ20201001023PES-6 | *TP53* | exon7 | c.672+1G>C | p.? | C | G | 36.52 | MSS | 5.26 |
| SZ20201031026PES-b | *KRAS* | exon2 | c.35G>T | p.G12V | C | A | 33.98 | MSS | 5.26 |
| SZ20210408008PES-b | *TP53* | exon5 | c.473G>A | p.R158H | C | T | 33.31 | MSS | 5.26 |
| SZ20211221339TUT-e | *BRAF* | exon11 | c.1406G>C | p.G469A | C | G | 32.09 | MSS | 5.26 |
| SZ20200930005PES-0 | *TP53* | exon7 | c.742C>T | p.R248W | G | A | 24.46 | MSS | 5.26 |
| SZ20201031026PES-b | *SYNE1* | exon16 | c.1631A>T | p.E544V | T | A | 24.32 | MSS | 5.26 |
| SZ20200930005PES-0 | *APC* | exon16 | c.3340C>T | p.R1114\* | C | T | 23.45 | MSS | 5.26 |
| SZ20210323011PES-0 | *APC* | exon16 | c.4666dup | p.T1556Nfs\*3 | - | A | 22.5 | MSI-L | 5.26 |
| SZ20210323011PES-0 | *APC* | exon16 | c.2626C>T | p.R876\* | C | T | 20.41 | MSI-L | 5.26 |
| SZ20210323011PES-0 | *KRAS* | exon3 | c.173C>T | p.T58I | G | A | 19.87 | MSI-L | 5.26 |
| SZ20210914027PES-8 | *TP53* | exon6 | c.637C>T | p.R213\* | G | A | 52.95 | MSS | 5.26 |
| SZ20210914027PES-8 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 39.3 | MSS | 5.26 |
| SZ20210914027PES-8 | *APC* | exon12 | c.1548+2T>C | p.? | T | C | 29.65 | MSS | 5.26 |
| SZ20210914027PES-8 | *APC* | exon16 | c.4384\_4385insG | p.k1462Rfs\*7 | - | G | 26.85 | MSS | 5.26 |
| SZ20200930005PES-0 | *KRAS* | exon2 | c.35G>T | p.G12V | C | A | 18.37 | MSS | 5.26 |
| SZ20201204012PES-d | *TP53* | exon5 | c.524G>A | p.R175H | C | T | 15.91 | MSS | 5.26 |
| SZ20201204012PES-d | *LRP1B* | exon13 | c.2017G>A | p.V673M | C | T | 14.33 | MSS | 5.26 |
| SZ20201204012PES-d | *APC* | exon16 | c.3922A>T | p.K1308\* | A | T | 13.57 | MSS | 5.26 |
| SZ20201204012PES-d | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 13.14 | MSS | 5.26 |
| SZ20201204012PES-d | *APC* | exon9 | c.847C>T | p.R283\* | C | T | 12.53 | MSS | 5.26 |
| SZ20200819011PES-6 | *APC* | exon16 | c.4033G>T | p.E1345\* | G | T | 11.75 | MSI-H | 5.26 |
| SZ20200825013TUT-7 | *TP53* | exon8 | c.904\_911dup | p.K305Gfs\*43 | - | GTGCTCCC | 10.89 | MSS | 5.26 |
| SZ20200930005PES-0 | *APC* | exon16 | c.4233del | p.S1411Rfs\*4 | T | - | 10.77 | MSS | 5.26 |
| SZ20201031026PES-b | *TP53* | exon4 | c.134\_140del | p.L45Rfs\*76 | GGGGACA | - | 9.54 | MSS | 5.26 |
| SZ20200825013TUT-7 | *KRAS* | exon2 | c.35G>C | p.G12A | C | G | 8.08 | MSS | 5.26 |
| SZ20201204012PES-d | *SYNE1* | exon28 | c.3515G>A | p.R1172H | C | T | 3.33 | MSS | 5.26 |
| SZ20210323011PES-0 | *APC* | exon16 | c.3084T>A | p.S1028R | T | A | 0 | MSI-L | 5.26 |
| SZ20200904005PES-1 | *TP53* | exon10 | c.1051A>T | p.K351\* | T | A | 68.82 | MSS | 4.61 |
| SZ20220304023PET-a | *TP53* | exon6 | c.637C>T | p.R213\* | G | A | 55.7 | MSS | 4.61 |
| SZ20200904005PES-1 | *APC* | exon16 | c.3927\_3931del | p.E1309Dfs\*4 | AAAAG | - | 50.63 | MSS | 4.61 |
| SZ20220304023PET-a | *APC* | exon16 | c.2183dup | p.N728Kfs\*6 | - | A | 41.67 | MSS | 4.61 |
| SZ20200912026PES-5 | *TP53* | exon5 | c.524G>A | p.R175H | C | T | 39.48 | MSI-L | 4.61 |
| SZ20211126054PES-f | *TP53* | exon8 | c.856G>A | p.E286K | C | T | 35.86 | MSS | 4.61 |
| SZ20200904005PES-1 | *SYNE1* | exon122 | c.22279G>A | p.E7427K | C | T | 30.91 | MSS | 4.61 |
| SZ20201117005PES-9 | *TP53* | exon6 | c.586del | p.R196Efs\*51 | G | - | 28.63 | MSS | 4.61 |
| SZ20200904005PES-1 | *SYNE1* | exon133 | c.23980C>T | p.R7994C | G | A | 28.43 | MSS | 4.61 |
| SZ20220712043FPT-e | *FBXW7* | exon11 | c.1750G>T | p.E584\* | C | A | 26.61 | MSS | 4.61 |
| SZ20211209009PES-5 | *TP53* | exon5 | c.524G>A | p.R175H | C | T | 24.79 | MSS | 4.61 |
| SZ20200912026PES-5 | *NRAS* | exon3 | c.182A>G | p.Q61R | T | C | 24.74 | MSI-L | 4.61 |
| SZ20211126054PES-f | *FBXW7* | exon6 | c.825\_829dup | p.R277Tfs\*22 | - | TGATG | 24.23 | MSS | 4.61 |
| SZ20211209009PES-5 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 20.6 | MSS | 4.61 |
| SZ20200912026PES-5 | *APC* | exon16 | c.4666dup | p.T1556Nfs\*3 | - | A | 19.33 | MSI-L | 4.61 |
| SZ20210925025PES-e | *APC* | exon16 | c.3586del | p.S1196Hfs\*69 | T | - | 10.36 | MSS | 4.61 |
| SZ20210925025PES-e | *ATM* | exon52 | c.7763C>G | p.P2588R | C | G | 29.86 | MSS | 4.61 |
| SZ20210521022TUT-e | *TP53* | exon5 | c.401T>G | p.F134C | A | C | 68.91 | MSS | 4.61 |
| SZ20210521022TUT-e | *KRAS* | exon2 | c.35G>T | p.G12V | C | A | 37.97 | MSS | 4.61 |
| SZ20211126054PES-f | *APC* | exon14 | c.1660C>T | p.R554\* | C | T | 19.11 | MSS | 4.61 |
| SZ20211126054PES-f | *FBXW7* | exon10 | c.1505C>T | p.S502L | G | A | 19.09 | MSS | 4.61 |
| SZ20200904005PES-1 | *LRP1B* | exon11 | c.1598G>T | p.G533V | C | A | 19.03 | MSS | 4.61 |
| SZ20200912026PES-5 | *FBXW7* | exon8 | c.1153C>T | p.R385C | G | A | 18.8 | MSI-L | 4.61 |
| SZ20220304023PET-a | *LRP1B* | exon36 | c.5861G>A | p.R1954K | C | T | 14.1 | MSS | 4.61 |
| SZ20220712043FPT-e | *TP53* | exon7 | c.743G>A | p.R248Q | C | T | 14.06 | MSS | 4.61 |
| SZ20211209009PES-5 | *APC* | exon16 | c.4348C>T | p.R1450\* | C | T | 13.45 | MSS | 4.61 |
| SZ20220712043FPT-e | *APC* | exon16 | c.4099C>T | p.Q1367\* | C | T | 13.41 | MSS | 4.61 |
| SZ20201117005PES-9 | *FBXW7* | exon4 | c.592C>T | p.R198\* | G | A | 13.06 | MSS | 4.61 |
| SZ20211023021PES-2 | *FBXW7* | exon3 | c.430C>T | p.R144\* | G | A | 12.51 | MSS | 4.61 |
| SZ20211126054PES-f | *APC* | exon16 | c.4031C>G | p.S1344\* | C | G | 12.3 | MSS | 4.61 |
| SZ20211209009PES-5 | *APC* | exon10 | c.1269G>A | p.W423\* | G | A | 11.46 | MSS | 4.61 |
| SZ20210430033FPT-4 | *APC* | exon16 | c.4115dup | p.P1373Tfs\*2 | - | C | 8.06 | MSS | 4.61 |
| SZ20200904005PES-1 | *SYNE1* | exon103 | c.19057A>G | p.K6353E | T | C | 7.98 | MSS | 4.61 |
| SZ20211023021PES-2 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 7.32 | MSS | 4.61 |
| SZ20210430033FPT-4 | *TP53* | exon7 | c.740A>T | p.N247I | T | A | 6.91 | MSS | 4.61 |
| SZ20220712043FPT-e | *LRP1B* | exon77 | c.11716A>C | p.N3906H | T | G | 5.81 | MSS | 4.61 |
| SZ20201117005PES-9 | *APC* | exon16 | c.2397T>A | p.Y799\* | T | A | 5.77 | MSS | 4.61 |
| SZ20211023021PES-2 | *APC* | exon16 | c.4048A>T | p.K1350\* | A | T | 5.31 | MSS | 4.61 |
| SZ20210430033FPT-4 | *LRP1B* | exon33 | c.5374T>A | p.W1792R | A | T | 5.16 | MSS | 4.61 |
| SZ20220726052TUT-c | *LRP1B* | exon2 | c.157G>T | p.D53Y | C | A | 82.76 | MSS | 3.95 |
| SZ20220726052TUT-c | *TP53* | exon6 | c.376-1G>T | p.? | C | A | 67.27 | MSS | 3.95 |
| SZ20220726052TUT-c | *TP53* | exon5 | c.376\_381del | p.Y126\_S127del | GGAGTA | - | 63.64 | MSS | 3.95 |
| SZ20211211031PPS-b | *TP53* | exon7 | c.733G>A | p.G245S | C | T | 57.2 | MSS | 3.95 |
| SZ20211211031PPS-b | *APC* | exon16 | c.4189G>T | p.E1397\* | G | T | 56.02 | MSS | 3.95 |
| SZ20201031025PES-0 | *TP53* | exon7 | c.742C>T | p.R248W | G | A | 50.27 | MSS | 3.95 |
| SZ20220726052TUT-c | *APC* | exon16 | c.3523C>T | p.Q1175\* | C | T | 44.79 | MSS | 3.95 |
| SZ20211109018PES-2 | *TP53* | exon6 | c.376-1G>A | p.? | C | T | 44.12 | MSS | 3.95 |
| SZ20210331005PES-a | *APC* | exon16 | c.3940del | p.R1314Gfs\*7 | A | - | 35.71 | MSS | 3.95 |
| SZ20211202013PES-f | *APC* | exon7 | c.646-1G>A | p.? | G | A | 34.21 | MSS | 3.95 |
| SZ20211010012PES-e | *TP53* | exon6 | c.659A>G | p.Y220C | T | C | 30.85 | MSS | 3.95 |
| SZ20211202013PES-f | *TP53* | exon6 | c.586C>T | p.R196\* | G | A | 29.72 | MSS | 3.95 |
| SZ20211109018PES-2 | *APC* | exon10 | c.1258T>G | p.C420G | T | G | 27.8 | MSS | 3.95 |
| SZ20211109018PES-2 | *APC* | exon10 | c.1254\_1257del | p.E418Dfs\*35 | AACC | - | 25.92 | MSS | 3.95 |
| SZ20210331005PES-a | *TP53* | exon8 | c.853G>A | p.E285K | C | T | 23.94 | MSS | 3.95 |
| SZ20211010012PES-e | *APC* | exon16 | c.3927\_3931del | p.E1309Dfs\*4 | AAAAG | - | 22 | MSS | 3.95 |
| SZ20210210032PES-2 | *TP53* | exon5 | c.524G>A | p.R175H | C | T | 20.2 | MSS | 3.95 |
| SZ20211202013PES-f | *KRAS* | exon2 | c.34G>T | p.G12C | C | A | 20.19 | MSS | 3.95 |
| SZ20211010012PES-e | *PIK3CA* | exon21 | c.3140A>G | p.H1047R | A | G | 19.33 | MSS | 3.95 |
| SZ20210824034TUT-b | *TP53* | exon7 | c.725G>T | p.C242F | C | A | 74.83 | MSS | 3.95 |
| SZ20210824034TUT-b | *APC* | exon16 | c.4099C>T | p.Q1367\* | C | T | 40.85 | MSS | 3.95 |
| SZ20210824034TUT-b | *APC* | exon10 | c.1268G>A | p.W423\* | G | A | 37.61 | MSS | 3.95 |
| SZ20210824036PES-7 | *KRAS* | exon2 | c.38G>A | p.G13D | C | T | 11.03 | MSS | 3.95 |
| SZ20210824036PES-7 | *TP53* | exon7 | c.757A>C | p.T253P | T | G | 9.9 | MSS | 3.95 |
| SZ20210805013PES-b | *TP53* | exon4 | c.272G>A | p.W91\* | C | T | 48.83 | MSI-L | 3.95 |
| SZ20210805013PES-b | *KRAS* | exon2 | c.35G>C | p.G12A | C | G | 37.2 | MSI-L | 3.95 |
| SZ20210805013PES-b | *APC* | exon16 | c.3927\_3931del | p.E1309Dfs\*4 | AAAAG | - | 46.37 | MSI-L | 3.95 |
| SZ20210622016PES-c | *KRAS* | exon2 | c.38G>A | p.G13D | C | T | 17.38 | MSS | 3.95 |
| SZ20210622016PES-c | *TP53* | exon6 | c.637C>T | p.R213\* | G | A | 30.89 | MSS | 3.95 |
| SZ20210622016PES-c | *APC* | exon16 | c.4348C>T | p.R1450\* | C | T | 23.37 | MSS | 3.95 |
| SZ20210605010PES-0 | *BRAF* | exon15 | c.1799T>A | p.V600E | A | T | 35.26 | MSS | 3.95 |
| SZ20210605010PES-0 | *TP53* | exon8 | c.844C>T | p.R282W | G | A | 27.06 | MSS | 3.95 |
| SZ20211109018PES-2 | *APC* | exon7 | c.712del | p.Q238Kfs\*55 | C | - | 17.2 | MSS | 3.95 |
| SZ20211118002PES-4 | *APC* | exon16 | c.4142dup | p.L1382Tfs\*4 | - | C | 16.15 | MSS | 3.95 |
| SZ20211118002PES-4 | *SYNE1* | exon93 | c.17611C>T | p.R5871C | G | A | 13.42 | MSS | 3.95 |
| SZ20211118002PES-4 | *KRAS* | exon2 | c.35G>T | p.G12V | C | A | 12.95 | MSS | 3.95 |
| SZ20211202013PES-f | *SYNE1* | exon146 | c.26060G>T | p.R8687L | C | A | 12.88 | MSS | 3.95 |
| SZ20211118002PES-4 | *PIK3CA* | exon21 | c.3203dup | p.N1068Kfs\*5 | - | A | 12.51 | MSS | 3.95 |
| SZ20211118002PES-4 | *APC* | exon16 | c.3916G>T | p.E1306\* | G | T | 10.12 | MSS | 3.95 |
| SZ20211010012PES-e | *TP53* | exon5 | c.559G>A | p.G187S | C | T | 5.47 | MSS | 3.95 |
| SZ20211211031PPS-b | *SYNE1* | exon52 | c.7921C>A | p.Q2641K | G | T | 5.05 | MSS | 3.95 |
| SZ20211211031PPS-b | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 1.65 | MSS | 3.95 |
| SZ20211211031PPS-b | *APC* | exon6 | c.532-1G>A | p.? | G | A | 0 | MSS | 3.95 |
| SZ20201031025PES-0 | *SYNE1* | exon41 | c.6043G>T | p.E2015\* | C | A | 0 | MSS | 3.95 |
| SZ20200319008PES-f | *TP53* | exon5 | c.451C>G | p.P151A | G | C | 55.42 | MSS | 3.82 |
| SZ20200319008PES-f | *APC* | exon9 | c.933+2T>C | p.? | T | C | 48.99 | MSS | 3.82 |
| SZ20210209019PES-a | *TP53* | exon5 | c.423\_431dup | p.V143\_Q144insHPV | - | TGCACAGGG | 20.49 | MSS | 3.82 |
| SZ20210209019PES-a | *LRP1B* | exon8 | c.1081C>T | p.R361\* | G | A | 10.08 | MSS | 3.82 |
| SZ20200319008PES-f | *PIK3CA* | exon9 | c.1633G>A | p.E545K | G | A | 9.15 | MSS | 3.82 |
| SZ20200409001PES-9 | *TP53* | exon6 | c.559+2T>C | p.? | A | G | 42.95 | MSS | 3.48 |
| SZ20200409001PES-9 | *APC* | exon16 | c.4348C>T | p.R1450\* | C | T | 40.57 | MSS | 3.48 |
| SZ20200409001PES-9 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 29.4 | MSS | 3.48 |
| SZ20211216001TUT-1 | *FBXW7* | exon9 | c.1181T>A | p.V394D | A | T | 58.95 | MSS | 3.29 |
| SZ20211216001TUT-1 | *APC* | exon16 | c.4216C>T | p.Q1406\* | C | T | 52.49 | MSS | 3.29 |
| SZ20211216001TUT-1 | *TP53* | exon8 | c.814G>A | p.V272M | C | T | 52.23 | MSS | 3.29 |
| SZ20210327004PES-6 | *TP53* | exon8 | c.833C>T | p.P278L | G | A | 52.19 | MSS | 3.29 |
| SZ20200904004PES-0 | *SYNE1* | exon133 | c.23980C>T | p.R7994C | G | A | 47.47 | MSS | 3.29 |
| SZ20210327004PES-6 | *APC* | exon16 | c.2008A>T | p.K670\* | A | T | 45.7 | MSS | 3.29 |
| SZ20210402004PES-6 | *TP53* | exon8 | c.844C>T | p.R282W | G | 　 | 42 | MSS | 3.29 |
| SZ20211216001TUT-1 | *KRAS* | exon2 | c.35G>T | p.G12V | C | A | 38.26 | MSS | 3.29 |
| SZ20200904004PES-0 | *APC* | exon16 | c.3927\_3931del | p.E1309Dfs\*4 | AAAAG | - | 36.71 | MSS | 3.29 |
| SZ20201205008PES-e | *APC* | exon16 | c.4012C>T | p.Q1338\* | C | T | 30.08 | MSS | 3.29 |
| SZ20200904004PES-0 | *TP53* | exon10 | c.1051A>T | p.K351\* | T | A | 28.51 | MSS | 3.29 |
| SZ20201205008PES-e | *TP53* | exon7 | c.743G>A | p.R248Q | C | T | 26.06 | MSS | 3.29 |
| SZ20200825017PES-c | *TP53* | exon5 | c.527G>T | p.C176F | C | A | 21.72 | MSS | 3.29 |
| SZ20210211010PES-3 | *APC* | exon16 | c.3845C>G | p.S1282\* | C | G | 19.4 | MSS | 3.29 |
| SZ20201205008PES-e | *PIK3CA* | exon10 | c.1633G>A | p.E545K | G | A | 16.48 | MSS | 3.29 |
| SZ20210211010PES-3 | *TP53* | exon6 | c.612\_620del | p.E204\_L206del | TCCAAATAC | - | 15 | MSS | 3.29 |
| SZ20200825012PES-1 | *TP53* | exon5 | c.527G>T | p.C176F | C | A | 14.57 | MSS | 3.29 |
| SZ20200825017PES-c | *APC* | exon16 | c.4463del | p.L1488Yfs\*19 | T | - | 10.47 | MSS | 3.29 |
| SZ20211112010TUT-c | *TP53* | exon7 | c.700T>A | p.Y234N | A | T | 9.36 | MSS | 3.29 |
| SZ20200528004PES-c | *TP53* | exon7 | c.743G>A | p.R248Q | C | T | 8.84 | MSI-L | 3.29 |
| SZ20200528004PES-c | *PIK3CA* | exon9 | c.1633G>A | p.E545K | G | A | 7.73 | MSI-L | 3.29 |
| SZ20211112010TUT-c | *KRAS* | exon2 | c.34G>T | p.G12C | C | A | 7.03 | MSS | 3.29 |
| SZ20200825012PES-1 | *APC* | exon16 | c.4463del | p.L1488Yfs\*19 | T | - | 6.45 | MSS | 3.29 |
| SZ20211112010TUT-c | *LRP1B* | exon12 | c.1933T>C | p.S645P | A | G | 5.99 | MSS | 3.29 |
| SZ20211120009PES-4 | *KRAS* | exon2 | c.35G>C | p.G12A | C | G | 5.72 | MSS | 3.29 |
| SZ20211120009PES-4 | *SYNE1* | exon140 | c.25259G>A | p.R8420H | C | T | 5.64 | MSS | 3.29 |
| SZ20200528004PES-c | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 5.44 | MSI-L | 3.29 |
| SZ20200528004PES-c | *APC* | exon16 | c.4391\_4394del | p.E1464Vfs\*8 | AGAG | - | 4.72 | MSI-L | 3.29 |
| SZ20211120009PES-4 | *PIK3CA* | exon10 | c.1624G>A | p.E542K | G | A | 3.96 | MSS | 3.29 |
| SZ20200318003PES-3 | *TP53* | exon7 | c.743G>A | p.R248Q | C | T | 26.68 | MSI-H | 3.05 |
| SZ20200318002PES-f | *TP53* | exon7 | c.743G>A | p.R248Q | C | T | 23.18 | MSS | 3.05 |
| SZ20200318003PES-3 | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 17.41 | MSI-H | 3.05 |
| SZ20200318002PES-f | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 11.17 | MSS | 3.05 |
| SZ20201120003PES-3 | *TP53* | exon5 | c.524G>A | p.R175H | C | T | 66.19 | MSS | 2.63 |
| SZ20201030019PES-1 | *KRAS* | exon4 | c.436G>A | p.A146T | C | T | 60.5 | MSS | 2.63 |
| SZ20201120003PES-3 | *APC* | exon16 | c.4464\_4465dup | p.L1489Yfs\*19 | - | TA | 53.53 | MSS | 2.63 |
| SZ20200926017PES-4 | *TP53* | exon6 | c.578A>T | p.H193L | T | A | 44.94 | MSS | 2.63 |
| SZ20201030019PES-1 | *APC* | exon16 | c.4588G>T | p.E1530\* | G | T | 43.62 | MSS | 2.63 |
| SZ20210316003PES-e | *TP53* | exon5 | c.524G>A | p.R175H | C | T | 37.38 | MSS | 2.63 |
| SZ20201030019PES-1 | *PIK3CA* | exon10 | c.1633G>A | p.E545K | G | A | 32.69 | MSS | 2.63 |
| SZ20210316003PES-e | *KRAS* | exon2 | c.34G>T | p.G12C | C | A | 26.56 | MSS | 2.63 |
| SZ20201020008PES-2 | *TP53* | exon8 | c.892G>T | p.E298\* | C | A | 25.58 | MSS | 2.63 |
| SZ20200909020PES-1 | *TP53* | exon4 | c.319T>G | p.Y107D | A | C | 19.39 | MSS | 2.63 |
| SZ20210929011PES-a | *TP53* | exon7 | c.742C>T | p.R248W | G | A | 20.2 | MSS | 2.63 |
| SZ20210929011PES-a | *APC* | exon16 | c.4348C>T | p.R1450\* | C | T | 20.06 | MSS | 2.63 |
| SZ20210731026TUT-2 | *TP53* | exon8 | c.859G>T | p.E287\* | C | A | 37.14 | MSS | 2.63 |
| SZ20210731026TUT-2 | *APC* | exon16 | c.3880C>T | p.Q1294\* | C | T | 26.33 | MSS | 2.63 |
| SZ20201020008PES-2 | *APC* | exon16 | c.2700\_2701del | p.Q901Gfs\*10 | CT | - | 18.35 | MSS | 2.63 |
| SZ20201120003PES-3 | *ATM* | exon7 | c.680C>T | p.S227L | C | T | 18.17 | MSS | 2.63 |
| SZ20201205005PES-a | *SYNE1* | exon112 | c.20572G>T | p.V6858F | C | A | 14.03 | MSS | 2.63 |
| SZ20211105009PES-5 | *TP53* | exon8 | c.817C>T | p.R273C | G | A | 12.68 | MSI-L | 2.63 |
| SZ20211105009PES-5 | *APC* | exon15 | c.1829A>G | p.D610G | A | G | 12.66 | MSI-L | 2.63 |
| SZ20211105009PES-5 | *APC* | exon16 | c.4348C>T | p.R1450\* | C | T | 12.38 | MSI-L | 2.63 |
| SZ20210305002PES-1 | *TP53* | exon6 | c.376-1G>A | p.? | C | T | 5.29 | MSS | 2.63 |
| SZ20201020008PES-2 | *LRP1B* | exon10 | c.1446G>A | p.M482I | C | T | 4.76 | MSS | 2.63 |
| SZ20210305002PES-1 | *PIK3CA* | exon8 | c.1404A>T | p.K468N | A | T | 1.1 | MSS | 2.63 |
| SZ20201120003PES-3 | *KRAS* | exon2 | Amplification | 4.20  | 　 | 　 | 　 | MSS | 2.63 |
| SZ20210310015FPT-6 | *TP53* | exon7 | c.733G>A | p.G245S | C | T | 69.44 | MSS | 1.97 |
| SZ20200411005PES-9 | *TP53* | exon8 | c.673-1G>A | p.? | C | T | 30.84 | MSS | 1.97 |
| SZ20211027018PES-0 | *TP53* | exon5 | c.403T>C | p.C135R | A | G | 28.21 | MSS | 1.97 |
| SZ20211110025PES-e | *APC* | exon16 | c.4147dup | p.M1383Nfs\*3 | - | A | 28 | MSS | 1.97 |
| SZ20200411005PES-9 | *APC* | exon16 | c.4135G>T | p.E1379\* | 　 | 　 | 26.54 | MSS | 1.97 |
| SZ20211027018PES-0 | *APC* | exon16 | c.4108A>T | p.K1370\* | A | T | 24.81 | MSS | 1.97 |
| SZ20211110025PES-e | *TP53* | exon8 | c.818G>T | p.R273L | C | A | 21.46 | MSS | 1.97 |
| SZ20211102012PES-b | *TP53* | exon7 | c.711G>A | p.M237I | C | T | 20.23 | MSS | 1.97 |
| SZ20210727023TUT-f | *APC* | exon16 | c.3196dup | p.R1066Kfs\*15 | - | A | 33.98 | MSS | 1.97 |
| SZ20210727023TUT-f | *APC* | exon9 | c.933+2T>C | p.? | T | C | 32.4 | MSS | 1.97 |
| SZ20211028006PES-1 | *TP53* | exon8 | c.818G>T | p.R273L | C | A | 18.37 | MSS | 1.97 |
| SZ20211028006PES-1 | *APC* | exon16 | c.4147dup | p.M1383Nfs\*3 | - | A | 17.65 | MSS | 1.97 |
| SZ20211102012PES-b | *APC* | exon16 | c.4473del | p.F1491Lfs\*16 | T | - | 16.64 | MSS | 1.97 |
| SZ20211102012PES-b | *APC* | exon12 | c.1495C>T | p.R499\* | C | T | 12.44 | MSS | 1.97 |
| SZ20201114002PES-2 | *TP53* | exon5 | c.376T>G | p.Y126D | A | C | 10.27 | MSS | 1.97 |
| SZ20201114002PES-2 | *KRAS* | exon2 | c.99T>G | p.D33E | A | C | 5.95 | MSS | 1.97 |
| SZ20201114002PES-2 | *PIK3CA* | exon3 | c.440G>A | p.C147Y | G | A | 2.91 | MSS | 1.97 |
| SZ20201114002PES-2 | *SYNE1* | exon23 | c.2630C>T | p.T877I | G | A | 2.12 | MSS | 1.97 |
| SZ20220418023TUT-f | *KRAS* | exon2 | c.35G>A | p.G12D | C | T | 7.51 | MSS | 1.32 |
| SZ20220418023TUT-f | *KRAS* | exon5 | c.482G>A | p.R161Q | C | T | 7.11 | MSS | 1.32 |
| SZ20220418023TUT-f | *APC* | exon8 | c.802G>T | p.E268\* | G | T | 4.24 | MSS | 1.32 |
| SZ20220418023TUT-f | *APC* | exon16 | c.5498G>C | p.R1833T | G | C | 2.12 | MSS | 1.32 |

TMB, Tumor mutational burden. MSI, microsatellite instability. MSS, microsatellite-stable. MSI-L, low microsatellite instability. MSI-H, high microsatellite instability.