

S2 Table. Changes in *PIK3CA* mutations between matched primary breast cancer and metastases

| No. | Metastasis site | Interval (Months) | Subtype | | | <i>PIK3CA</i> mutation | | |
|-----|-----------------|-------------------|-----------------------|-----------------|--------|------------------------|------------------|--------|
| | | | Primary breast cancer | Metastasis site | Status | Primary breast cancer | Metastasis site | Status |
| 1 | Brain | 68 | TNBC | TNBC | C | ND | E542K | D |
| 2 | Liver | 19 | Luminal B | Luminal A | D | ND | H1047R | D |
| 3 | Lung | 89 | Luminal B | Luminal A | D | ND | H1047R | D |
| 4 | Liver | 59 | Luminal A | Luminal A | C | H1047R | H1047R, E545D | D |
| 5 | Lung | 21 | Luminal A | Luminal B | D | C420R | ND | D |
| 6 | Brain | 40 | TNBC | TNBC | C | H1047R | ND | D |
| 7 | Lung | 37 | Luminal A | Luminal A | C | H1047R | ND | D |
| 8 | Liver | 0 | Luminal B | Unknown | - | E542K | E542K | C |
| 9 | Brain | 27 | Luminal B | Luminal B | C | E545K | E545K | C |
| 10 | Liver | 17 | Luminal B | Luminal A | D | E726K | E726K | C |
| 11 | Liver | 7 | Luminal A | Luminal B | D | H1047R | H1047R | C |
| 12 | Liver | 1 | Luminal A | Luminal B | D | H1047R | H1047R | C |
| 13 | Liver | 17 | Luminal B | Luminal B | C | H1047R | H1047R | C |
| 14 | Liver | 74 | Luminal B | Luminal B | C | H1047R | H1047R | C |
| 15 | Liver | 182 | Luminal B | Luminal B | C | H1047R | H1047R | C |
| 16 | Liver | 30 | Luminal A | Luminal A | C | H1047R | H1047R | C |
| 17 | Liver | 31 | Luminal B | TNBC | D | H1047R | H1047R | C |
| 18 | Liver | 104 | Luminal A | Luminal B | D | H1047R | H1047R | C |
| 19 | Brain | 55 | HER2 | HER2 | C | H1047R | H1047R | C |
| 20 | Lung | 43 | Luminal A | Luminal A | C | H1047R | H1047R | C |
| 21 | Lung | 52 | Luminal B | Luminal B | C | H1047R | H1047R | C |
| 22 | Lung | 45 | Luminal B | Luminal A | D | H1047R | H1047R | C |
| 23 | Lung | 83 | Luminal A | Luminal A | C | N345K | N345K | C |
| 24 | Liver | 0 | HER2 | HER2 | C | ND | ND | C |
| 25 | Liver | 73 | Luminal B | Luminal B | C | ND | ND | C |
| 26 | Liver | 50 | Luminal B | Unknown | - | ND | ND | C |
| 27 | Liver | 55 | TNBC | TNBC | C | ND | ND | C |
| 28 | Liver | 66 | Luminal B | Luminal B | C | ND | ND | C |
| 29 | Liver | 37 | Luminal A | Luminal A | C | ND | ND | C |
| 30 | Liver | 3 | Luminal B | Luminal B | C | ND | ND | C |

| | | | | | | | | |
|----|-------|-----|-----------|-----------|---|----|----|---|
| 31 | Liver | 66 | Luminal A | Luminal A | C | ND | ND | C |
| 32 | Liver | 39 | Luminal B | Luminal A | D | ND | ND | C |
| 33 | Liver | 70 | Luminal A | Luminal B | D | ND | ND | C |
| 34 | Liver | 106 | Luminal B | Luminal B | C | ND | ND | C |
| 35 | Liver | 24 | Luminal B | Luminal B | C | ND | ND | C |
| 36 | Brain | 15 | Luminal B | Luminal B | C | ND | ND | C |
| 37 | Brain | 43 | Luminal B | Luminal A | D | ND | ND | C |
| 38 | Brain | 34 | HER2 | HER2 | C | ND | ND | C |
| 39 | Brain | 54 | Luminal B | Luminal B | C | ND | ND | C |
| 40 | Brain | 23 | TNBC | Luminal A | D | ND | ND | C |
| 41 | Brain | 11 | HER2 | HER2 | C | ND | ND | C |
| 42 | Lung | 36 | Luminal B | Luminal B | C | ND | ND | C |
| 43 | Lung | 75 | TNBC | TNBC | C | ND | ND | C |
| 44 | Lung | 81 | HER2 | HER2 | C | ND | ND | C |
| 45 | Lung | 16 | Luminal B | Luminal B | C | ND | ND | C |
| 46 | Lung | 55 | Luminal A | Luminal B | D | ND | ND | C |
| 47 | Lung | 14 | Luminal B | Luminal B | C | ND | ND | C |
| 48 | Lung | 241 | Luminal A | Luminal B | D | ND | ND | C |
| 49 | Lung | 11 | HER2 | HER2 | C | ND | ND | C |

C, concordance; D, discordance; ND, not detected; TNBC, triple-negative breast cancer.