**Supplementary Table 1: Description of patients and samples analysed in this study for *TERT* promoter and *BRAF* mutations**

|  |  |  |
| --- | --- | --- |
|  | **n (*TERT*)** | **n (*BRAF*)** |
| **Number of patients with analysed primary tumours** | 79 | 85a |
| **Number of patients with analysed recurrences** | 7 | 7 |
| **Number of patients with analysed locoregional metastases** | 32 | 32 |
| **Number of patients with analysed distant metastases** | 6 | 6 |
| **Number of patients with an analysed primary tumour and at least one analysed metastasis (locoregional or distant)** | 27b | 34a,b |

aSeven patients had the *BRAF* status previously evaluated in the primary tumour with cobas® 4800, at HDS. Also, *BRAF* status was not determine in a non-metastatic case, and therefore the difference between the number of known *BRAF* and *TERT* statuses is six for primary tumours but seven for paired samples.

bNo patient had simultaneously locoregional and visceral metastases.

**Supplementary Table 2: Frequency of *TERTp*+ and *BRAF*+ mutations, by sample and mutation type**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Gene** | **Type of mutation** | **Primary tumours** | **Recurrences** | **Locoregional metastases** | **Distant metastases** |
| ***TERTmut*** | Total | n=7920/79(25%) | n=73/7(43%) | n=36b9/36(25%) | n=63/6(50%) |
| -124C>T | n=5(25%) | n=1(33%) | 0 | n=1(33%) |
| -146C>T | n=13(65%) | n=2(67%) | n=8(89%) | n=2(67%) |
| -124/125CC>TT | n=1(5%) | 0 | n=1(11%) | 0 |
| -138/139CC>TT | n=1(5%) | 0 | 0 | 0 |
| ***BRAFmut*** | Total | n=8424/84(28%) | n=73/7(43%) | n=36b10/36(28%) | n=62/6(33%) |
| V600a | n=4 (17%) | 0 | 0 | 0 |
| V600E | n=15 (62%) | n=3 (100%) | n=8 (80%) | n=1 (50%) |
| V600K | n=5 (21%) | 0 | n=2(20%) | n=1 (50%) |

aPatients that had only the *BRAF* status previously evaluated with cobas® 4800, at HDS.

bSome patients had simultaneously nodal and in-transit metastases.

**Supplementary Table 3: Clinicopathological features and their relationship with *BRAF*+ mutational status**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Clinicopathological features** | **All melanomas** | ***BRAF*** **WT** | ***BRAF+* mutated** | **p-value** |
| Number of cases (%) | 90 | 63 (70) | 27 (30) | - |
| Mean age (±SD) | 62 (±17.1) | 66 (±17.3) | 53 (±13.2) | **<0.01** |
| Sex [n (%)]FemaleMale | 53 (59)37 (41) | 36 (57)27 (43) | 17 (63)10 (37) | 0.64 |
| Location [n (%)]Head and NeckTrunkMembers | 14 (16)38 (43)36 (41) | 10 (17)24 (39)27 (44) | 4 (15)14 (52)9 (33) | 0.55 |
| Histological Subtype [n (%)]SSMNodularLMM*In situ* | 34 (44)31 (40)7 (9)5 (7) | 21 (40)19 (37)7 (13)5 (10) | 13 (52)12 (48)0 (0)0 (0) | 0.07 |
| Mean thickness [mm (range)] | 3.80 (0.23-21) | 3.94 (0.23-19) | 3.63 (0.50-21) | 0.78 |
| Breslow index [n (%)]≤1mm>1mm | 28 (37)48 (63) | 23 (45)28 (55) | 5 (20)20 (80) | 0.06 |
| Epidermal ulceration [n (%)]AbsentPresent | 53 (66)27 (34) | 40 (71)16 (29) | 13 (54)11 (46) | 0.20 |
| Mitotic rate [n (%)]<1/mm2≥1/mm2 | 28 (36)50 (64) | 23 (43)31 (57) | 5 (21)19 (79) | 0.08 |
| Growth phase [n (%)]RadialVertical | 17 (26)49 (74) | 14 (33)29 (67) | 3 (13)20 (87) | 0.14 |
| AJCC stage [n (%)]≤II>III | 43 (48)47 (52) | 36 (57)27 (43) | 7 (26)20 (74) | **0.01** |
| *TERTp+* mutational status [n (%)]WTMut | 63 (70)27 (30) | 47 (75)16 (25) | 13 (48)14 (52) | **0.03** |