**Supplementary Table 4**: Genotyping and statistical results for microsatellite

| | Polymorphism | variable | At least one $[CA]_{14}$ | Absence of $[CA]_{14}$ | p-value | Test | At least one $[CA]_{\geq 21}$ | Absence of $[CA]_{\geq 21}$ | p-value | Test |
|---|---|---|---|---|---|---|---|---|---|---|
| **Stage at Diagnosis** | microsatellite | 0 | 42 (74%) | 15 (26%) | | | 40 (70%) | 17 (30%) | | |
| | microsatellite | I | 383 (79%) | 101 (21%) | | | 321 (66%) | 163 (34%) | | |
| | microsatellite | II | 175 (77%) | 52 (23%) | | | 146 (64%) | 81 (36%) | | |
| | microsatellite | III | 129 (80%) | 32 (20%) | | | 100 (62%) | 61 (38%) | | |
| | microsatellite | IV | 7 (78%) | 2 (22%) | 0,68 | Trend | 7 (78%) | 2 (22%) | 0,32 | Trend |
| **Current Stage** | microsatellite | 0 | 41 (75%) | 14 (26%) | | | 39 (71%) | 16 (29%) | | |
| | microsatellite | I | 329 (79%) | 87 (21%) | | | 274 (66%) | 142 (34%) | | |
| | microsatellite | II | 117 (77%) | 36 (24%) | | | 95 (62%) | 58 (38%) | | |
| | microsatellite | III | 163 (78%) | 46 (22%) | | | 135 (65%) | 74 (35%) | | |
| | microsatellite | IV | 101 (81%) | 24 (19%) | 0,68 | Trend | 82 (66%) | 43 (34%) | 0,6 | Trend |
| **Thickness** | microsatellite | in situ | 42 (74%) | 15 (26%) | | | 40 (70%) | 17 (30%) | | |
| | microsatellite | <1.01 | 244 (79%) | 64 (21%) | | | 203 (66%) | 105 (34%) | | |
| | microsatellite | 1.01 - 2.00 | 206 (79%) | 56 (21%) | | | 171 (65%) | 91 (35%) | | |
| | microsatellite | 2.01 - 4.00 | 116 (76%) | 36 (24%) | | | 102 (67%) | 50 (33%) | | |
| | microsatellite | >4.00 | 93 (80%) | 24 (21%) | 0,88 | Trend | 76 (65%) | 41 (35%) | 0,76 | Trend |
| **Clark Level** | microsatellite | I = in situ | 42 (74%) | 15 (26%) | | | 40 (70%) | 17 (30%) | | |
| | microsatellite | II | 83 (79%) | 22 (21%) | | | 70 (67%) | 35 (33%) | | |
| | microsatellite | III | 115 (79%) | 31 (21%) | | | 91 (62%) | 55 (38%) | | |
| | microsatellite | IV | 366 (79%) | 97 (21%) | | | 312 (67%) | 151 (33%) | | |
| | microsatellite | V | 47 (70%) | 20 (30%) | 0,92 | Trend | 44 (66%) | 23 (34%) | 0,92 | Trend |
| **Tumor Infiltrating Lymphocytes** | microsatellite | absent | 166 (85%) | 30 (15%) | | | 129 (66%) | 67 (34%) | | |
| | microsatellite | non-brisk | 300 (79%) | 82 (22%) | | | 251 (66%) | 131 (34%) | | |
| | microsatellite | brisk | 23 (77%) | 7 (23%) | 0,08 | Trend | 21 (70%) | 9 (30%) | 0,8 | Trend |
| **Number of Moles** | microsatellite | none | 193 (79%) | 52 (21%) | | | 156 (64%) | 89 (36%) | | |
| | microsatellite | few | 379 (78%) | 107 (22%) | | | 318 (65%) | 168 (35%) | | |
| | microsatellite | moderate | 126 (78%) | 35 (22%) | | | 109 (68%) | 52 (32%) | | |
| | microsatellite | many | 30 (77%) | 9 (23%) | 0,8 | Trend | 26 (67%) | 13 (33%) | 0,44 | Trend |
| **Number of Freckles** | microsatellite | 1 = none | 358 (78%) | 100 (22%) | | | 309 (68%) | 149 (33%) | | |
| | microsatellite | 2 | 183 (79%) | 49 (21%) | | | 137 (59%) | 95 (41%) | | |
| | microsatellite | 3 | 129 (77%) | 38 (23%) | | | 111 (67%) | 56 (34%) | | |
| | microsatellite | 4 | 50 (78%) | 14 (22%) | | | 40 (63%) | 24 (38%) | | |
| | microsatellite | 5 | 14 (82%) | 3 (18%) | | | 12 (71%) | 5 (29%) | | |
| | microsatellite | 6 = many | 6 (100%) | 0 (0%) | 0,68 | Trend | 5 (83%) | 1 (17%) | 0,76 | Trend |
| **Phenotypic Index** | microsatellite | 1 = low risk | 19 (54%) | 16 (46%) | | | 31 (89%) | 4 (11%) | | |
| | microsatellite | 2 | 158 (78%) | 46 (23%) | | | 139 (68%) | 65 (32%) | | |
| | microsatellite | 3 | 237 (79%) | 65 (22%) | | | 190 (63%) | 112 (37%) | | |
| | microsatellite | 4 | 260 (82%) | 56 (18%) | | | 197 (62%) | 119 (38%) | | |
| | microsatellite | 5 = high risk | 79 (77%) | 24 (23%) | 0,04 | Trend | 69 (67%) | 34 (33%) | 0,08 | Trend |
| **Sex** | microsatellite | F | 327 (80%) | 82 (20%) | | | 260 (64%) | 149 (36%) | | |
| | microsatellite | M | 429 (77%) | 126 (23%) | 0,36 | Fisher | 370 (67%) | 185 (33%) | 0,32 | Fisher |
| **Family History** | microsatellite | N | 630 (79%) | 171 (21%) | | | 523 (65%) | 278 (35%) | | |
| | microsatellite | Y | 119 (77%) | 36 (23%) | 0,6 | Fisher | 102 (66%) | 53 (34%) | 0,92 | Fisher |
| **Multiple Primary** | microsatellite | N | 641 (78%) | 178 (22%) | | | 533 (65%) | 286 (35%) | | |
| | microsatellite | Y | 114 (79%) | 30 (21%) | 0,92 | Fisher | 96 (67%) | 48 (33%) | 0,76 | Fisher |

| | Polymorphism | variable | At least one $[CA]_{14}$ | Absence of $[CA]_{14}$ | p-value | Test | At least one $[CA]_{\geq 21}$ | Absence of $[CA]_{\geq 21}$ | p-value | Test |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dysplastic Nevus** | microsatellite | N | 414 (80%) | 106 (20%) | | | 336 (65%) | 184 (35%) | | |
| | microsatellite | Y | 159 (76%) | 51 (24%) | 0,28 | Fisher | 142 (68%) | 68 (32%) | 0,48 | Fisher |
| **Ulceration** | microsatellite | absent | 403 (78%) | 112 (22%) | | | 340 (66%) | 175 (34%) | | |
| | microsatellite | present | 142 (78%) | 40 (22%) | 1 | Fisher | 120 (66%) | 62 (34%) | 1 | Fisher |
| **Regression** | microsatellite | absent | 298 (82%) | 64 (18%) | | | 228 (63%) | 134 (37%) | | |
| | microsatellite | present | 190 (76%) | 59 (24%) | 0,08 | Fisher | 171 (69%) | 78 (31%) | 0,16 | Fisher |
| **Lymphovascular Invasion** | microsatellite | absent | 436 (80%) | 111 (20%) | | | 362 (66%) | 185 (34%) | | |
| | microsatellite | present | 50 (77%) | 15 (23%) | 0,64 | Fisher | 43 (66%) | 22 (34%) | 1 | Fisher |
| **Perineural Invasion** | microsatellite | absent | 318 (78%) | 89 (22%) | | | 267 (66%) | 140 (34%) | | |
| | microsatellite | present | 49 (82%) | 11 (18%) | 0,6 | Fisher | 39 (65%) | 21 (35%) | 1 | Fisher |
| **Mitotic Index** | microsatellite | absent | 77 (79%) | 20 (21%) | | | 70 (72%) | 27 (28%) | | |
| | microsatellite | present | 351 (80%) | 89 (20%) | 1 | Fisher | 287 (65%) | 153 (35%) | 0,24 | Fisher |
| **Satellites** | microsatellite | absent | 206 (84%) | 39 (16%) | | | 160 (65%) | 85 (35%) | | |
| | microsatellite | present | 24 (80%) | 6 (20%) | 0,6 | Fisher | 17 (57%) | 13 (43%) | 0,4 | Fisher |
| **Solar Elastosis** | microsatellite | absent | 18 (95%) | 1 (5%) | | | 9 (47%) | 10 (53%) | | |
| | microsatellite | present | 29 (76%) | 9 (24%) | 0,16 | Fisher | 26 (68%) | 12 (32%) | 0,16 | Fisher |
| **Distant Metastasis** | microsatellite | N | 652 (78%) | 184 (22%) | | | 546 (65%) | 290 (35%) | | |
| | microsatellite | Y | 102 (81%) | 24 (19%) | 0,48 | Fisher | 82 (65%) | 44 (35%) | 1 | Fisher |
| **Intransit Metastasis** | microsatellite | N | 710 (78%) | 196 (22%) | | | 598 (66%) | 308 (34%) | | |
| | microsatellite | Y | 20 (77%) | 6 (23%) | 0,8 | Fisher | 12 (46%) | 14 (54%) | 0,04 | Fisher |
| **Tan/Burn Index** | microsatellite | tend to tan | 57 (66%) | 30 (35%) | | | 68 (78%) | 19 (22%) | | |
| | microsatellite | tend to sunburn | 699 (80%) | 178 (20%) | <0.01 | Fisher | 562 (64%) | 315 (36%) | <0.01 | Fisher |
| **Race** | microsatellite | White non-Hispanic | 733 (79%) | 194 (21%) | | | 601 (65%) | 326 (35%) | | |
| | microsatellite | Hispanic | 7 (70%) | 3 (30%) | | | 8 (80%) | 2 (20%) | | |
| | microsatellite | Black non-Hispanic | 3 (33%) | 6 (67%) | | | 8 (89%) | 1 (11%) | | |
| | microsatellite | Asian/Indian | 1 (33%) | 2 (67%) | <0.01 | Chi-Square | 3 (100%) | 0 (0%) | 0,2 | Chi-Square |
| **Site** | microsatellite | extremities | 387 (75%) | 130 (25%) | | | 348 (67%) | 169 (33%) | | |
| | microsatellite | head & neck | 51 (75%) | 17 (25%) | | | 44 (65%) | 24 (35%) | | |
| | microsatellite | non-cutaneous | 9 (82%) | 2 (18%) | | | 6 (55%) | 5 (46%) | | |
| | microsatellite | trunk | 274 (84%) | 52 (16%) | <0.01 | Chi-Square | 209 (64%) | 117 (36%) | 0,68 | Chi-Square |
| **Histology** | microsatellite | desmoplastic | 16 (73%) | 6 (27%) | | | 14 (64%) | 8 (36%) | | |
| | microsatellite | other | 179 (76%) | 56 (24%) | | | 165 (70%) | 70 (30%) | | |
| | microsatellite | spitzoid | 8 (80%) | 2 (20%) | | | 8 (80%) | 2 (20%) | | |
| | microsatellite | unknown | 553 (79%) | 144 (21%) | 0,68 | Chi-Square | 443 (64%) | 254 (36%) | 0,2 | Chi-Square |