**Supplemental table 1.** **Cohort characteristics and cfDNA MPS quality.** Controls consisted of patients referred to the lung clinic with the suspicion of lung cancer but later diagnosed with benign lung diseases. UMD: Unique molecular depth; PS: ECOG Performance status; AC: Adenocarcinoma; SqCC: Squamous cell carcinoma; SCLC: Small cell lung cancer.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study ID** | **cfDNA input (ng)** | **cfDNA UMD** | **Diagnosis** | **Age** | **Sex** | **Smoking** | **Stage** | **Treatment** | **Follow up (months)** | **Survival status** | **PS** |
| 1 | 19.75 | 1298 | AC | 76 | Male | Never | II | Surgery | 27.84 | Diseased | 1 |
| 2 | 34.35 | 4623 | AC | 73 | Male | Current | IV | Chemotherapy | 7.67 | Diseased | 2 |
| 3 | 50.00 | 6605 | AC | 80 | Male | Current | I | Radiation | 7.41 | Diseased | 2 |
| 4 | 37.31 | 5307 | AC | 62 | Male | Former | IV | Chemotherapy | 46.66 | Sensored | 1 |
| 5 | 26.95 | 4744 | SqCC | 74 | Female | Former | IV | Chemotherapy | 4.56 | Diseased | 1 |
| 6 | 16.60 | 3611 | AC | 69 | Male | Former | II | Radiation | 42.00 | Sensored | 1 |
| 7 | 15.55 | 3548 | AC | 72 | Male | Current | I | Surgery | 33.18 | Diseased | 0 |
| 8 | 22.55 | 5244 | SCLC | 64 | Female | Current | IV | Radiation | 18.75 | Diseased | 0 |
| 9 | 11.90 | 2891 | AC | 47 | Female | Never | IV | Targeted therapy | 42.52 | Sensored | 0 |
| 10 | 50.00 | 7152 | SCLC | 72 | Male | Current | IV | Chemotherapy | 2.69 | Diseased | 2 |
| 11 | 50.00 | 7058 | SCLC | 80 | Female | Current | IV | Chemotherapy | 1.15 | Diseased | 2 |
| 12 | 11.50 | 2933 | SqCC | 58 | Male | Current | II | Surgery | 40.20 | Sensored | 0 |
| 13 | 12.70 | 3113 | SqCC | 70 | Male | Current | I | Surgery | 24.30 | Diseased | 1 |
| 14 | 50.00 | 6826 | AC | 81 | Male | Former | IV | Best supportive care/ no treatment | 1.61 | Diseased | 3 |
| 15 | 24.65 | 4277 | Control | 49 | Male | Never | NA | NA | NA | NA | NA |
| 16 | 37.45 | 6357 | SqCC | 73 | Male | Former | IIIa | Surgery | 16.69 | Diseased | 1 |
| 17 | 35.30 | 5771 | AC | 73 | Male | Never | IV | Best supportive care/ no treatment | 3.38 | Diseased | 3 |
| 18 | 50.00 | 7152 | AC | 51 | Female | Current | IV | Best supportive care/ no treatment | 0.75 | Diseased | 3 |
| 19 | 34.20 | 4457 | AC | 68 | Female | Never | IV | Chemotherapy | 37.11 | Sensored | 1 |
| 20 | 33.67 | 5602 | Control | 69 | Male | Former | NA | NA | NA | NA | NA |
| 21 | 22.70 | 6496 | AC | 61 | Male | Never | IV | Targeted therapy | 2.72 | Diseased | 2 |
| 22 | 22.70 | 4538 | SqCC | 73 | Female | Current | IIIa | Radiation | 33.70 | Sensored | 2 |
| 23 | 50.00 | 8011 | AC | 69 | Female | Former | IV | Best supportive care/ no treatment | 0.10 | Diseased | 4 |
| 24 | 20.95 | 4087 | AC | 74 | Female | Former | IIIa | Chemotherapy | 33.70 | Sensored | 1 |
| 25 | 50.00 | 6628 | AC | 57 | Female | Never | IV | Targeted therapy | 33.90 | Sensored | 0 |
| 26 | 50.00 | 7498 | Control | 83 | Male | Never | NA | NA | NA | NA | NA |
| 27 | 50.00 | 6273 | Control | 73 | Male | Current | NA | NA | NA | NA | NA |
| 28 | 46.85 | 5903 | SqCC | 71 | Female | Current | IV | Chemotherapy | 5.70 | Diseased | 1 |
| 29 | 44.65 | 7162 | AC | 68 | Female | Former | IV | Chemotherapy | 13.28 | Diseased | 1 |
| 30 | 20.10 | 1712 | Control | 84 | Male | Former | NA | NA | NA | NA | NA |
| 31 | 20.95 | 3306 | Control | 83 | Female | Never | NA | NA | NA | NA | NA |
| 32 | 25.80 | 4415 | AC | 69 | Male | Never | I | Surgery | 30.07 | Sensored | 1 |
| 33 | 29.05 | 5040 | AC | 62 | Female | Former | IV | Targeted therapy | 30.92 | Sensored | 1 |
| 34 | 9.30 | 2328 | SqCC | 75 | Male | Current | I | Surgery | 29.18 | Sensored | 0 |
| 35 | 20.00 | 4482 | AC | 57 | Male | Never | IIIb | Targeted therapy | 29.44 | Sensored | 0 |
| 36 | 50.00 | 5882 | AC | 79 | Male | Former | IV | Radiation | 1.25 | Diseased | 1 |
| 37 | 24.55 | 3337 | Control | 76 | Male | Current | NA | NA | NA | NA | NA |
| 38 | 50.00 | 6274 | AC | 81 | Male | Current | IV | Chemotherapy | 3.41 | Diseased | 2 |
| 39 | 40.50 | 6348 | SCLC | 71 | Male | Former | IV | Chemotherapy | 4.75 | Diseased | 2 |
| 40 | 24.70 | 4148 | Control | 81 | Female | Former | NA | NA | NA | NA | NA |
| 41 | 22.85 | 2614 | AC | 72 | Female | Never | IV | Targeted therapy | 28.20 | Sensored | 0 |
| 42 | 47.00 | 6877 | AC | 54 | Female | Former | IV | Chemotherapy | 5.02 | Diseased | 0 |
| 43 | 35.70 | 6565 | AC | 71 | Female | Current | I | Radiation | 23.25 | Sensored | 1 |
| 44 | 11.55 | 2972 | Control | 70 | Female | Former | NA | NA | NA | NA | NA |
| 45 | 20.90 | 3941 | Control | 71 | Female | Current | NA | NA | NA | NA | NA |
| 46 | 21.70 | 4365 | Control | 82 | Male | Never | NA | NA | NA | NA | NA |
| 47 | 24.80 | 4411 | Control | 76 | Male | Never | NA | NA | NA | NA | NA |
| 48 | 44.85 | 5949 | Control | 81 | Female | Former | NA | NA | NA | NA | NA |
| 49 | 31.40 | 6018 | Control | 71 | Male | Current | NA | NA | NA | NA | NA |
| 50 | 21.40 | 3600 | Control | 71 | Female | Never | NA | NA | NA | NA | NA |
| 51 | 33.40 | 4935 | AC | 69 | Female | Current | IV | Best supportive care/ no treatment | 2.46 | Diseased | 3 |
| 52 | 27.15 | 5518 | AC | 68 | Female | Former | IV | Immunotherapy | 24.82 | Sensored | 1 |
| 53 | 22.50 | 3982 | SqCC | 66 | Male | Former | IIIa | Radiation + Chemotherapy | 24.33 | Sensored | 0 |
| 54 | 15.05 | 3027 | SqCC | 75 | Male | Former | IIIa | Radiation + Chemotherapy | 9.54 | Diseased | 1 |
| 55 | 20.50 | 4095 | AC | 39 | Male | Never | IV | Targeted therapy | 24.16 | Sensored | 0 |
| 56 | 30.00 | 5758 | SqCC | 80 | Male | Former | I | Radiation | 22.43 | Sensored | 1 |
| 57 | 16.65 | 4633 | SqCC | 81 | Female | Former | IIIb | Radiation | 8.98 | Diseased | 2 |
| 58 | 18.75 | 3514 | SqCC | 58 | Male | Current | IV | Chemotherapy | 6.52 | Diseased | 0 |
| 59 | 31.30 | 4976 | AC | 68 | Male | Former | IIIb | Radiation | 20.20 | Diseased | 0 |
| 60 | 22.45 | 3490 | AC | 78 | Male | Former | I | Surgery | 22.46 | Sensored | 0 |
| 61 | 26.00 | 4750 | SqCC | 75 | Male | Former | IIIb | Radiation + Chemotherapy | 22.79 | Sensored | 2 |
| 62 | 24.65 | 4602 | SCLC | 72 | Female | Current | II | Radiation + Chemotherapy | 21.87 | Sensored | 1 |
| 63 | 43.95 | 6933 | SCLC | 66 | Female | Current | IIIb | Radiation + Chemotherapy | 12.36 | Diseased | 1 |
| 64 | 23.00 | 3626 | AC | 72 | Male | Former | IV | Chemotherapy | 8.30 | Diseased | 1 |
| 65 | 38.85 | 5917 | AC | 76 | Male | Former | IV | Chemotherapy | 15.21 | Sensored | 1 |
| 66 | 50.00 | 6654 | SCLC | 74 | Male | Former | IV | Best supportive care/ no treatment | 0.03 | Diseased | 3 |
| 67 | 50.00 | 6944 | AC | 85 | Female | Current | IV | Best supportive care/ no treatment | 1.77 | Diseased | 3 |
| 68 | 33.20 | 5624 | SqCC | 83 | Male | Former | IV | Best supportive care/ no treatment | 0.26 | Diseased | 3 |
| 69 | 25.55 | 9243 | AC | 73 | Male | Former | IV | Best supportive care/ no treatment | 0.13 | Diseased | 3 |
| 70 | 13.85 | 3139 | SqCC | 69 | Female | Former | IV | Immunotherapy | 4.03 | Diseased | 0 |
| 71 | 13.30 | 2566 | AC | 65 | Female | Never | I | Surgery | 7.97 | Sensored | 1 |
| 72 | 50.00 | 4676 | AC | 84 | Female | Never | IV | Targeted therapy | 7.11 | Sensored | 2 |
| 73 | 38.10 | 4724 | AC | 79 | Female | Former | II | Radiation + Chemotherapy | 3.90 | Sensored | 1 |
| 74 | 24.65 | 713 | Control | 52 | Female | Former | NA | NA | NA | NA | NA |
| 75 | 43.90 | 4563 | AC | 66 | Female | Former | IV | Chemotherapy | 2.69 | Sensored | 1 |
| 76 | 50.00 | 7665 | SCLC | 84 | Male | Former | IV | Chemotherapy | 2.33 | Sensored | 2 |