

Improving CT scan for lung cancer diagnosis with an integromic signature

SUPPLEMENTARY FILES

Table S1. Biomarkers relative to patient smoking (pack-years)

| Biomarkers | Coefficients | P-value |
|---------------------------------|--------------|---------|
| Plasma-miRN-205 | -0.208 | 0.023 |
| Sputum miRNA-210 | -0.195 | 0.011 |
| Sputum lncRNA-SNHG1 | -0.244 | 0.027 |
| Sputum lncRNA-H19 | -0.162 | 0.040 |
| Sputum snoRD66 | -0.200 | 0.012 |
| Sputum lncRNA-HOTAIR | 0.220 | 0.016 |
| Sputum DNA methylation, RASSF1A | 0.233 | 0.029 |
| Sputum Veillonella | 0.244 | 0.018 |

Table S2. Biomarkers relative to patient gender

| Biomarkers | Coefficients | P-value |
|-----------------|--------------|---------|
| Sputum miRNA-31 | 0.218 | 0.015 |
| lncRNA0-SNHG1 | 0.126 | 0.028 |
| Sputum miR-126 | 0.164 | 0.037 |

Table S3. Biomarkers relative to patient race

| Biomarkers | Coefficients | P-value |
|----------------|--------------|---------|
| Sputum snoRD78 | 0.148 | 0.035 |
| Sputum snoRD66 | 0.129 | 0.043 |

Table S4. Biomarkers relative to patient COPD

| Biomarkers | Coefficients | P-value |
|--|--------------|---------|
| Sputum lncRNA-SNHG1 | 0.231 | 0.001 |
| Sputum lncRNA-H19 | 0.186 | 0.014 |
| Sputum lncRNA-HOTAIR | 0.201 | 0.002 |
| Sputum snoRD66 | 0.164 | 0.021 |
| Plasma lncRNA0-RMRP | 0.276 | 0.006 |
| Sputum DNA methylation, RASSF1A | 0.363 | 0.010 |
| Sputum bacterial biomarker, Acidovorax | 0.320 | 0.002 |

COPD: Chronic obstructive pulmonary disease.

Table S5. Clinical and radiological features relative to patient diagnosis (cancer vs. normal)

| Biomarkers | Coefficients | P-value |
|--------------------------------|--------------|---------|
| Smoking pack-years | 0.177 | 0.025 |
| Diameter of the PNs | 0.249 | 0.001 |
| Spiculation of the PNs | 0.131 | 0.038 |
| Upper lobe location of the PNs | 0.148 | 0.036 |

PNs: Pulmonary nodules.

Table S6. Diagnostics of the integromic signature for lung cancer detection in PNs with different sizes (≥ 20 mm vs. < 20 mm)

| Performance | A training set | | A validation set | |
|----------------------|------------------------------|---------------------------|------------------------------|---------------------------|
| | In PNs with ≥ 20 mm (%) | In PNs with < 20 mm (%) | In PNs with ≥ 20 mm (%) | In PNs with < 20 mm (%) |
| Sensitivity (95% CI) | 90.28 (80.99–93.93) | 85.42 (72.24–90.16) | 88.89 (65.29–98.62) | 83.33 (51.25–97.91) |
| Specificity (95% CI) | 95.97 (90.84–98.68) | 91.03 (82.23–96.32) | 94.74 (73.97–99.87) | 90.32 (74.25–97.96) |

PNs: Pulmonary nodules; CI: Confidence interval.