

Figure S1. Protein structure and mutational proportion of (A) *EGFR*, (B) *TP53*, (C) *APC* and (D) *ERBB2* in patients with (top) and without (bottom) hypertension. Protein domains are marked in different colors. Lollipop plots represent the locations of protein-altering variants. The height of the lollipop represents the number of patient-harbored non-synonymous mutations, which is indicated by the y-axis. Del, deletion; Hyp group, hypertension group; Ins, insertion; Non-Hyp group, non-hypertension group; FU, furin-like cysteine-rich region; Recep L, receptor Leucine-rich domain; TyrKc, tyrosine kinase; PTKc, protein tyrosine kinase; TAD, topologically associated domain; ARM, armadillo; SAMP, Serine-Alanine-Methionine-Proline; EB1, end-binding 1; TM: transmembrane domain; Pkinase\_Tyr, protein tyrosine kinase domain.

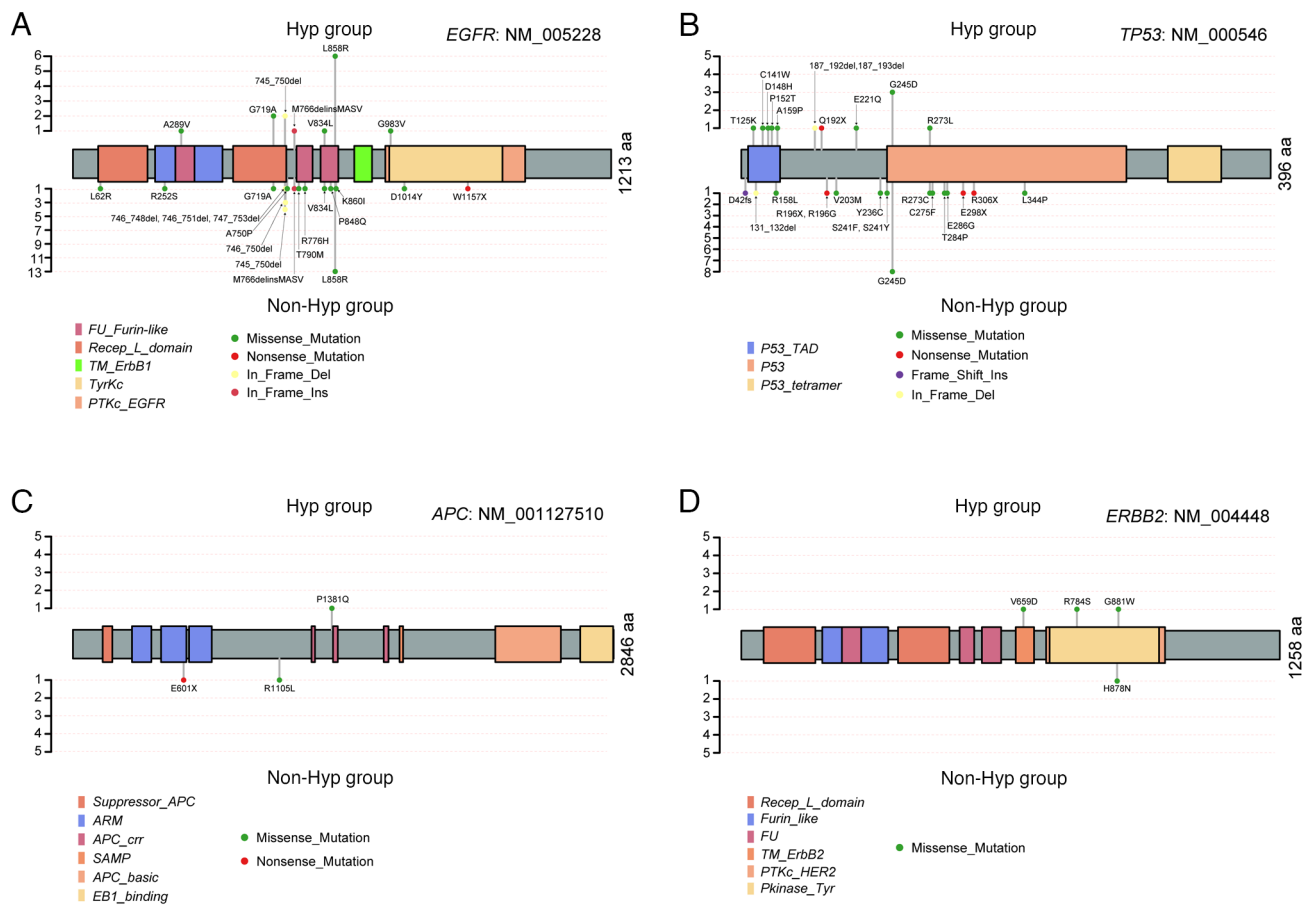


Figure S2. Analysis of the difference in the binary categorical variables of patients with non-small cell lung cancer with hypertension, including *EGFR* mutations, *TP53* mutations, female sex, other chronic disease, smoking history and drinking history. \*\*P<0.01 and \*\*\*P<0.001.

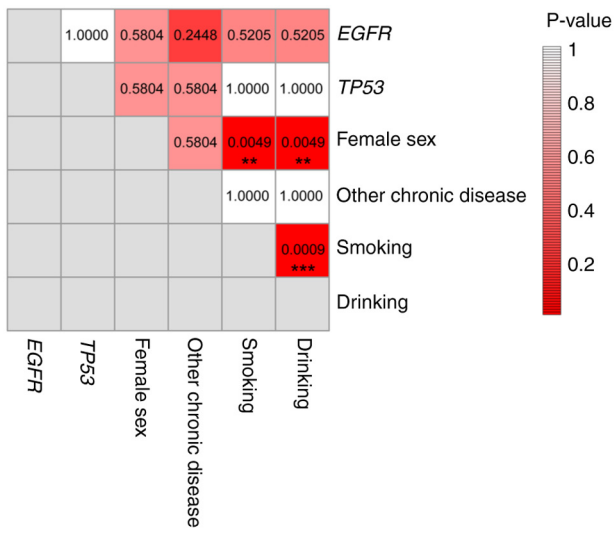


Figure S3. Comparative evaluation of 18 heavy metals and three conventional serum biomarkers in patients with hypertension with non-small cell lung cancer with and without *EGFR* mutations according to Mann-Whitney U test. \* $P < 0.05$ . As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Hyp group, hypertension group; Mn, manganese; Ni, nickel; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

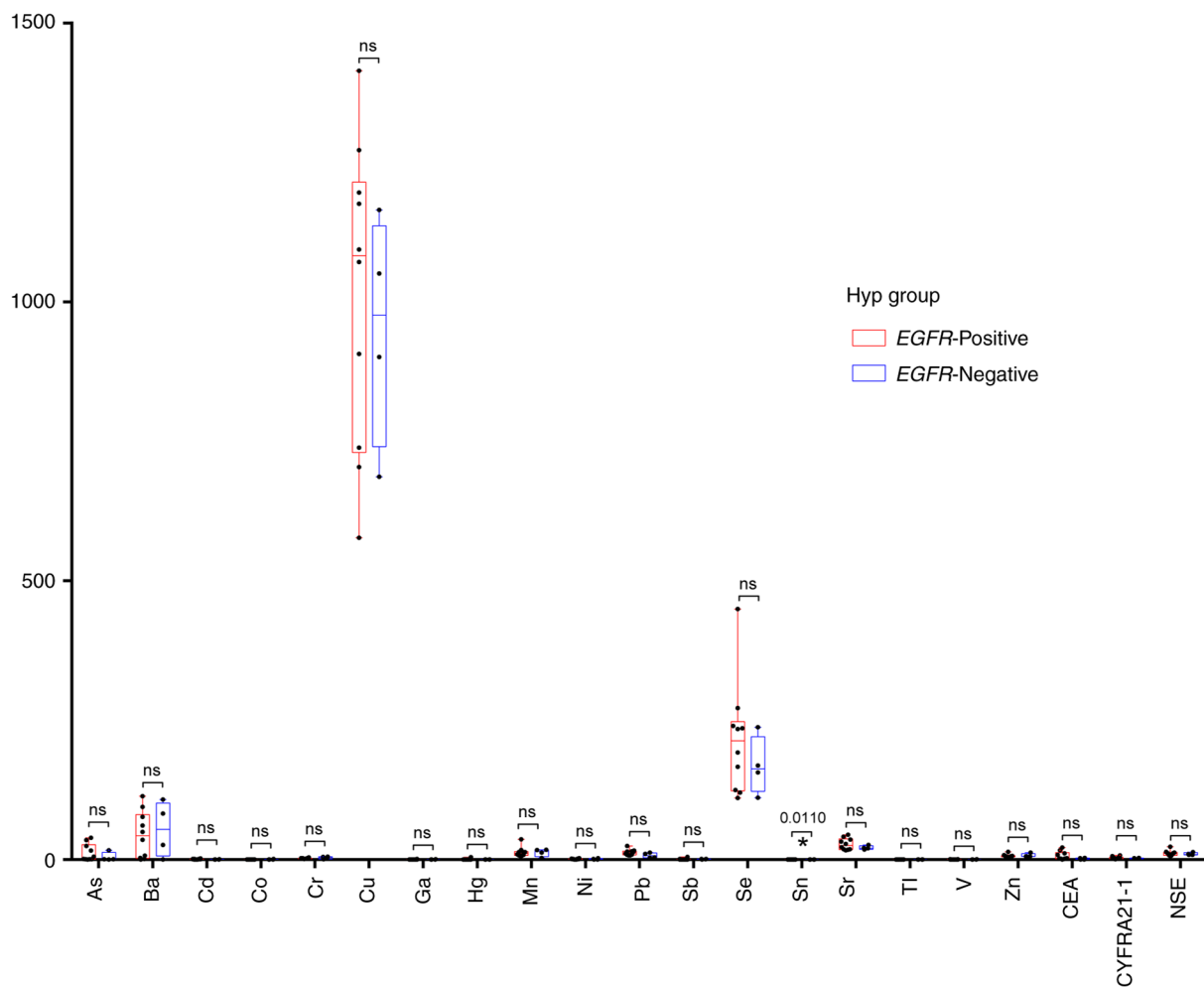


Figure S4. Comparative evaluation of 18 heavy metals and three conventional serum biomarkers in patients with hypertension with non-small cell lung cancer with and without *TP53* mutations according to Mann-Whitney U test. As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Hyp group, hypertension group; Mn, manganese; Ni, nickel; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

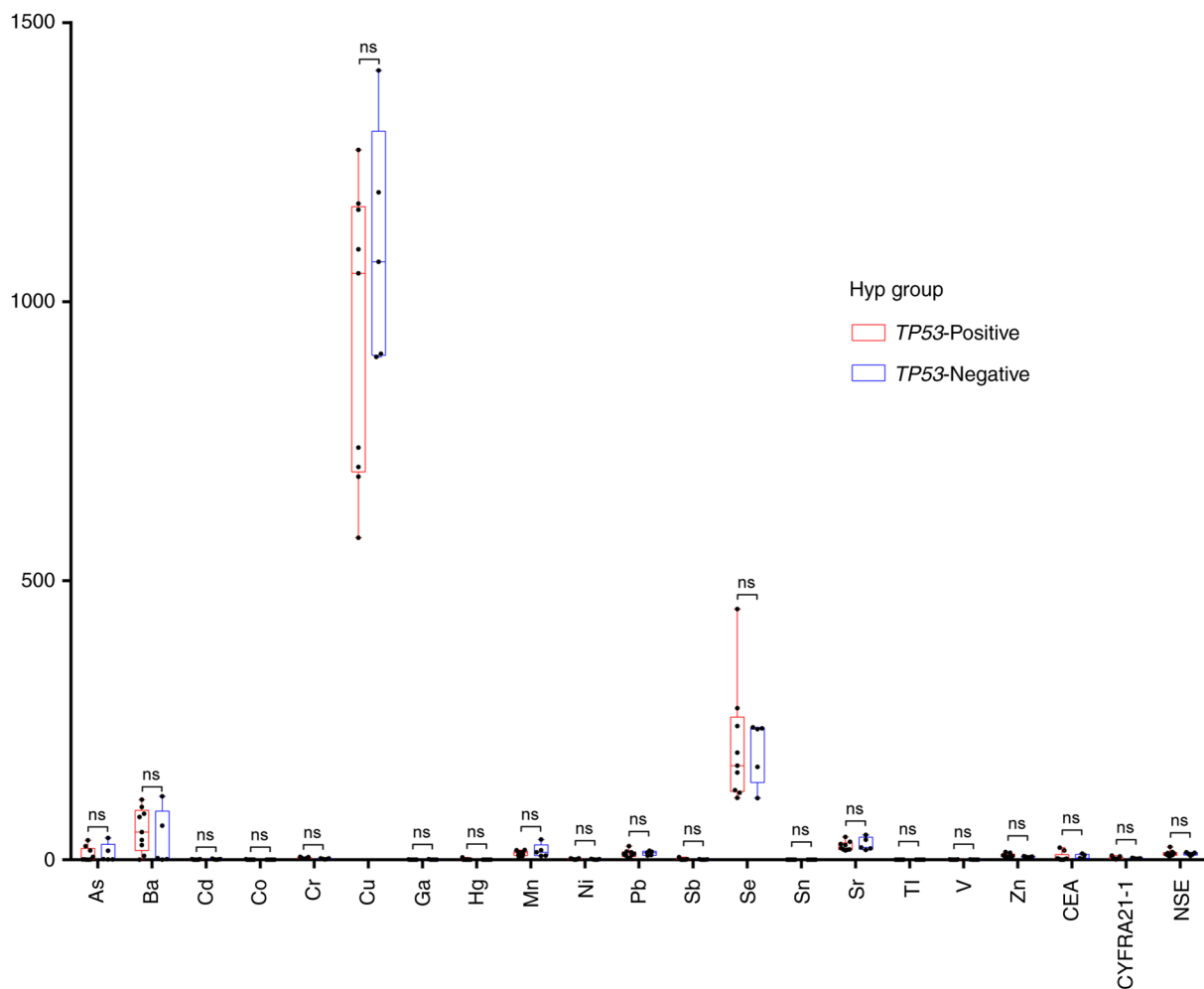


Figure S5. Comparative evaluation of 18 heavy metals and three conventional serum biomarkers in patients with hypertension with non-small cell lung cancer with and without other chronic disease according to the Mann-Whitney U test. As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Hyp group, hypertension group; Mn, manganese; Ni, nickel; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

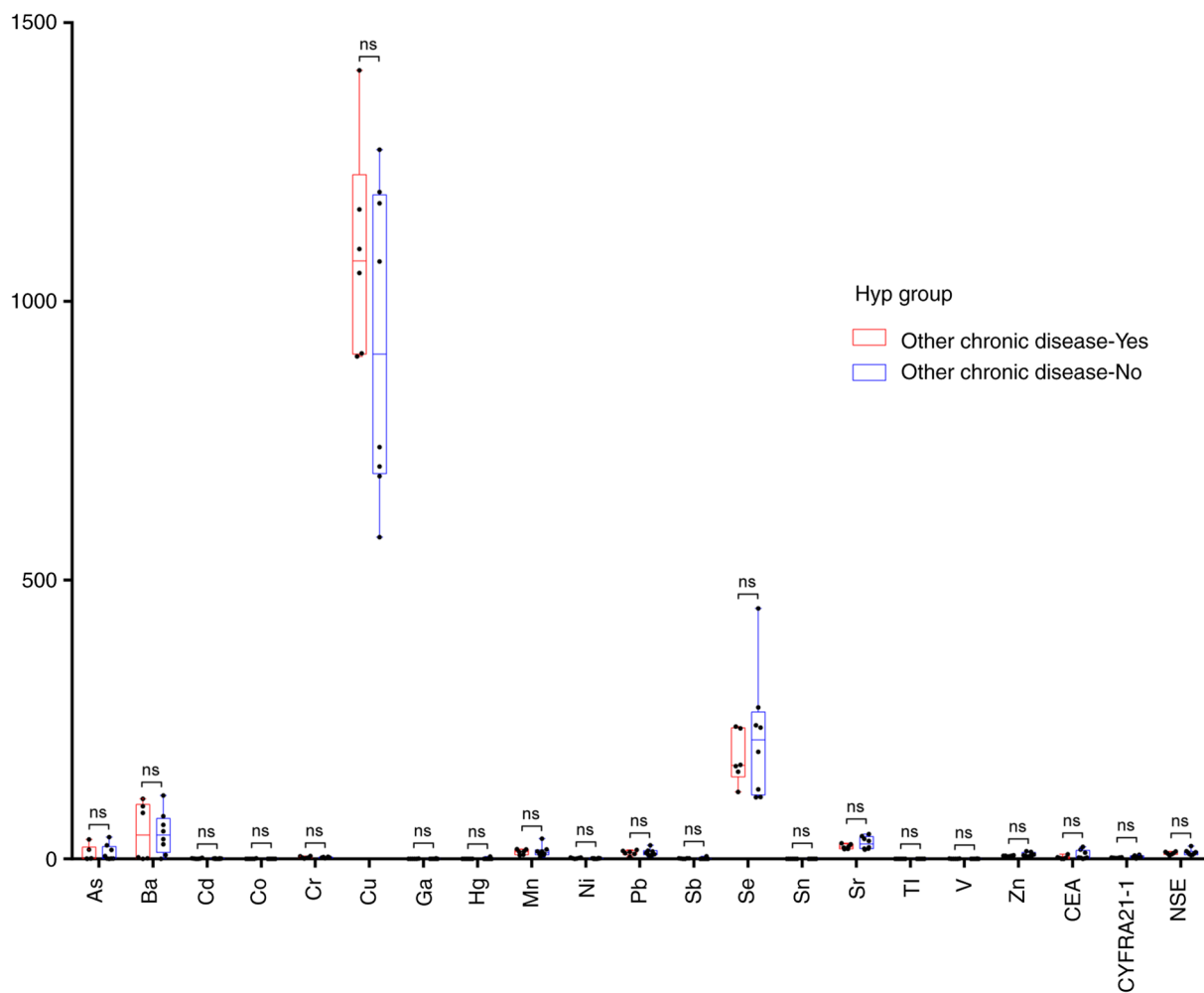


Figure S6. Comparative evaluation of 18 heavy metals and three conventional serum biomarkers in male and female patients with non-small cell lung cancer with hypertension according to the Mann-Whitney U test. As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Hyp group, hypertension group; Mn, manganese; Ni, nickel; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

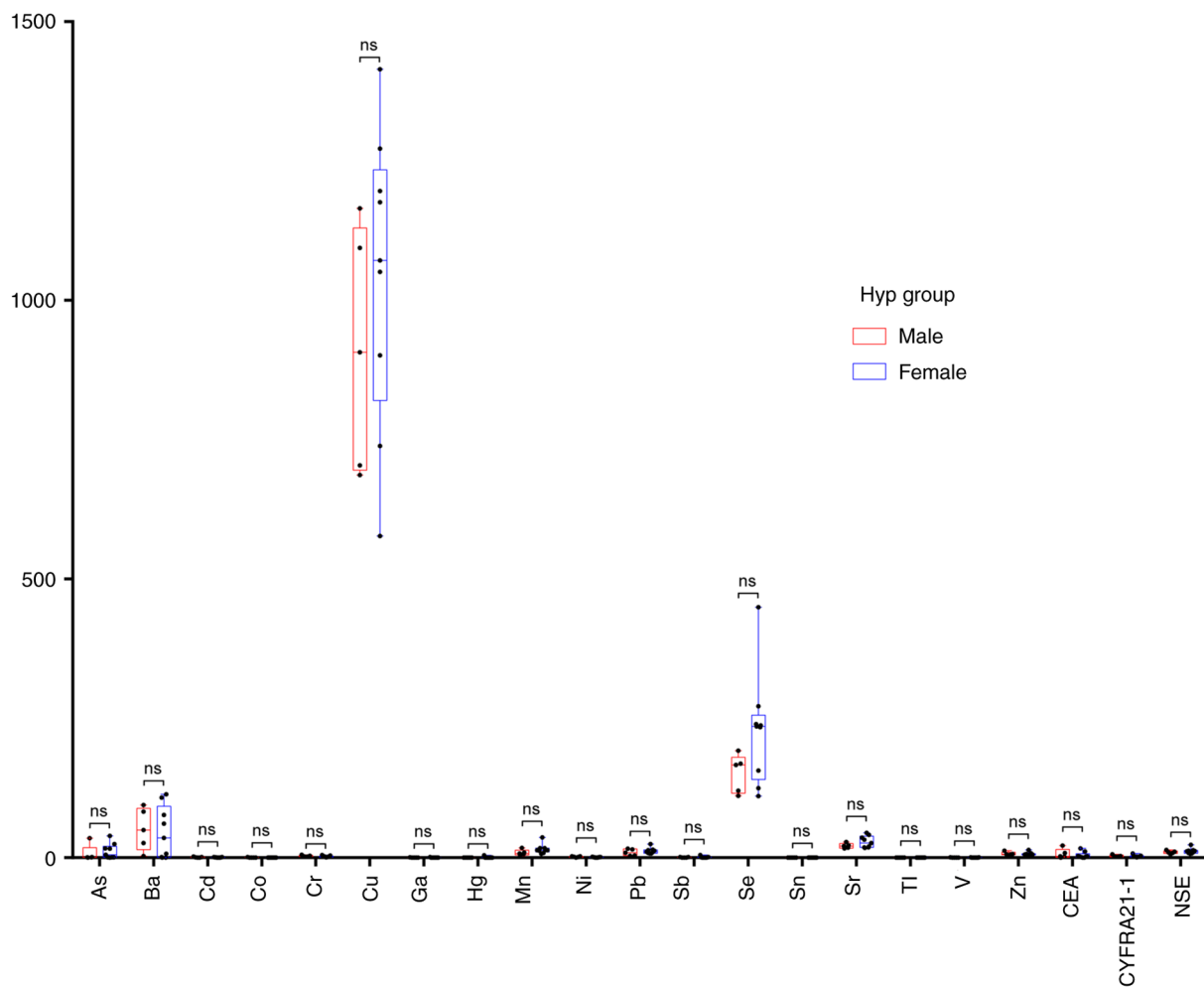


Figure S7. Comparative evaluation of 18 heavy metals and three conventional serum biomarkers in hypertensive patients with non-small cell lung cancer with and without smoking history according to the Mann-Whitney U test. As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Hyp group, hypertension group; Mn, manganese; Ni, nickel; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

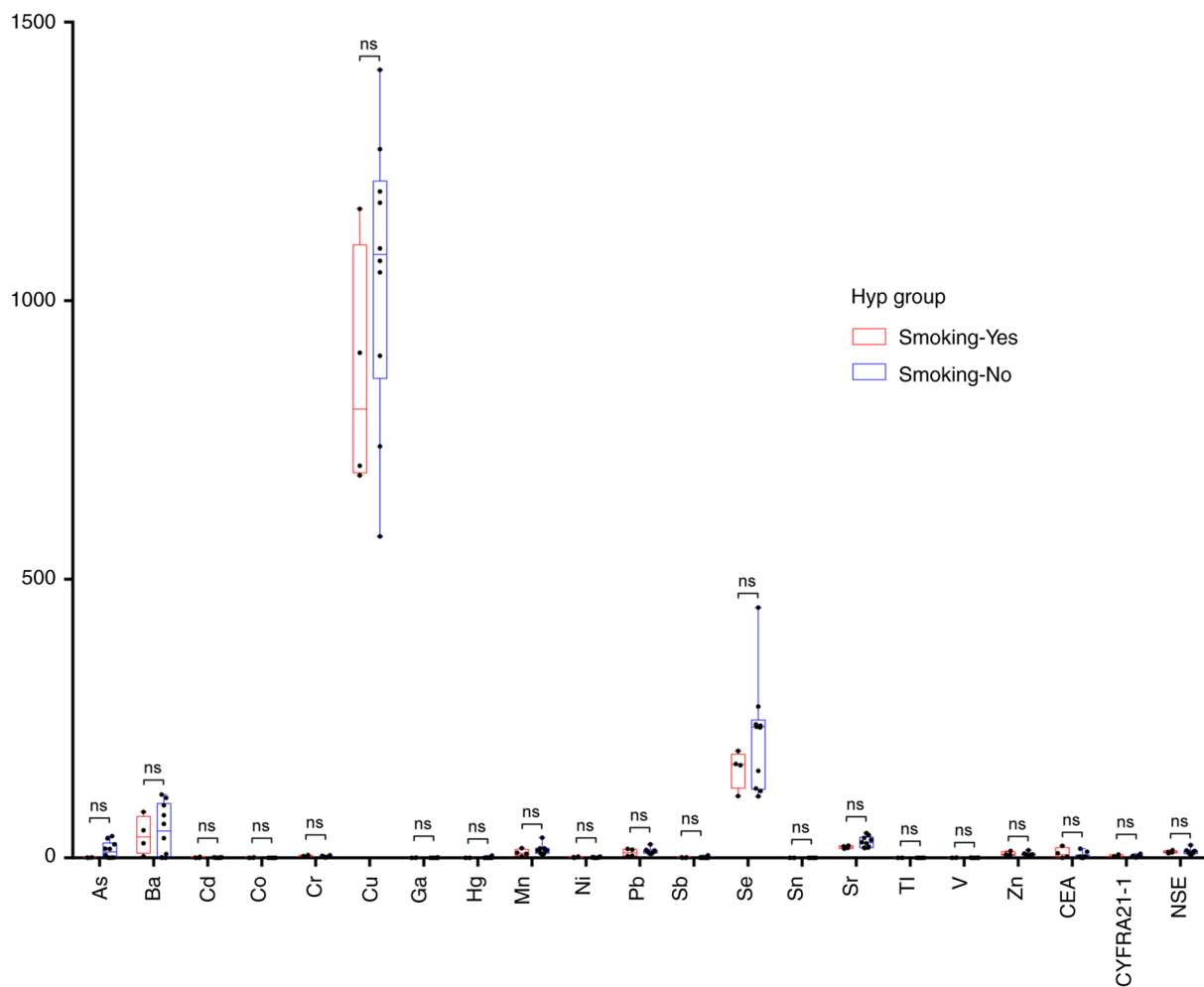


Figure S8. Comparative evaluation of 18 heavy metals and three conventional serum biomarkers in hypertensive patients with non-small cell lung cancer with and without drinking history according to the Mann-Whitney U test. As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Hyp group, hypertension group; Mn, manganese; Ni, nickel; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

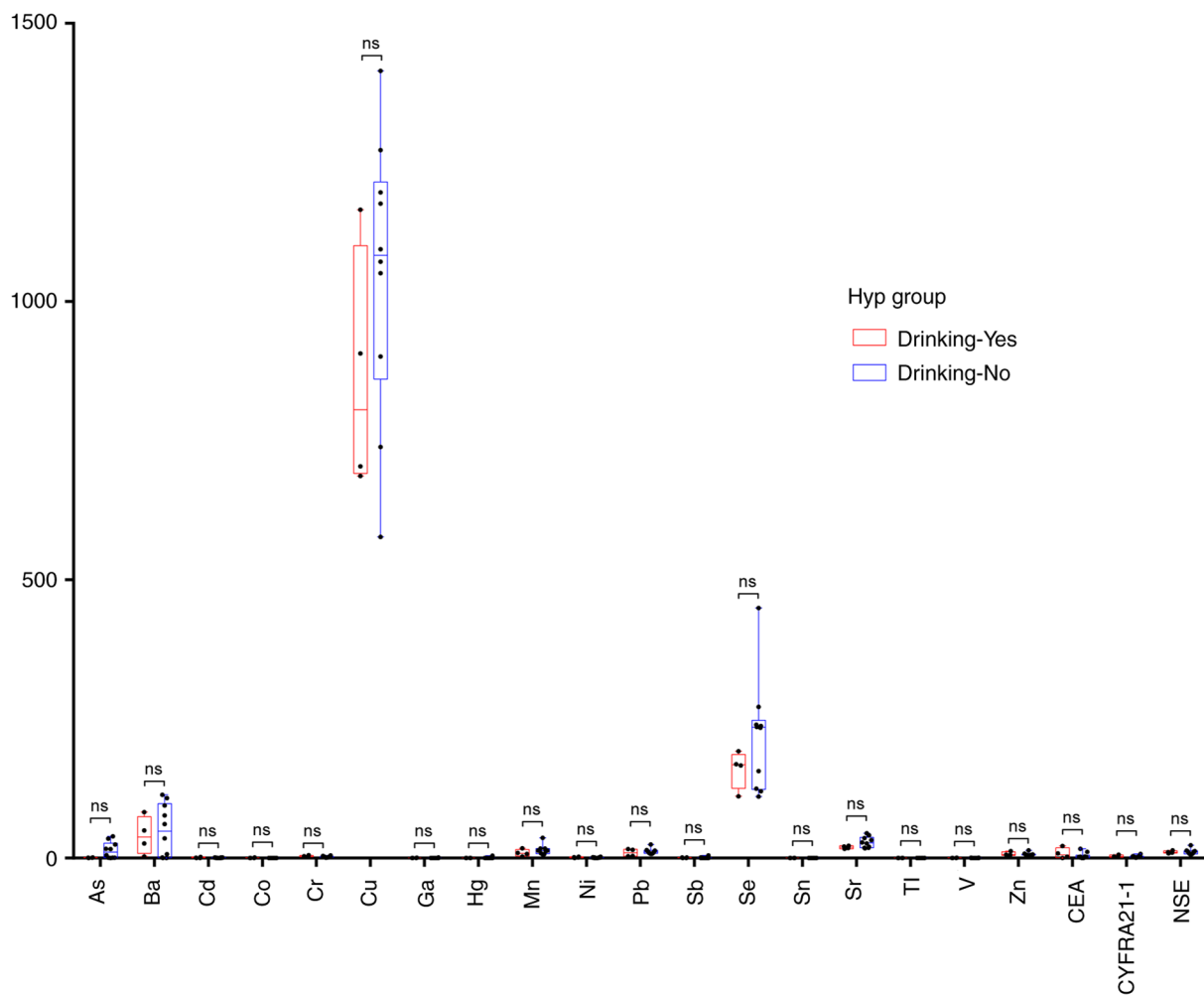




Figure S9. Differential analysis of categorical variables in patients with non-small cell lung cancer without hypertension, including *EGFR* mutations, *TP53* mutations, *KRAS* mutations, female sex, smoking history and drinking history. \*P<0.05, \*\*P<0.01 and \*\*\*P<0.001.

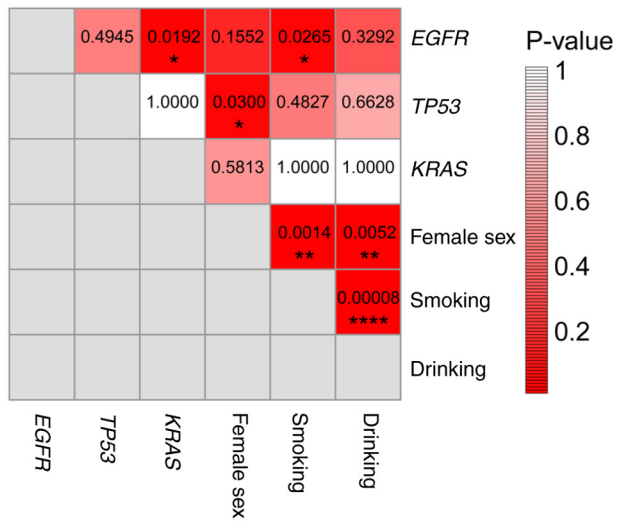


Figure S10. For patients with non-small cell lung cancer without hypertension, comparative evaluation of 18 heavy metals and three conventional serum biomarkers in patients with and without *EGFR* mutations. A two-tailed unpaired t-test was applied for Co, Hg, Sn, Tl and Zn, whilst a Mann-Whitney U test was used for the other 13 heavy metals and the 3 serum biomarkers. \* $P < 0.05$ . As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Mn, manganese; Ni, nickel; non-Hyp group, non-hypertension group; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

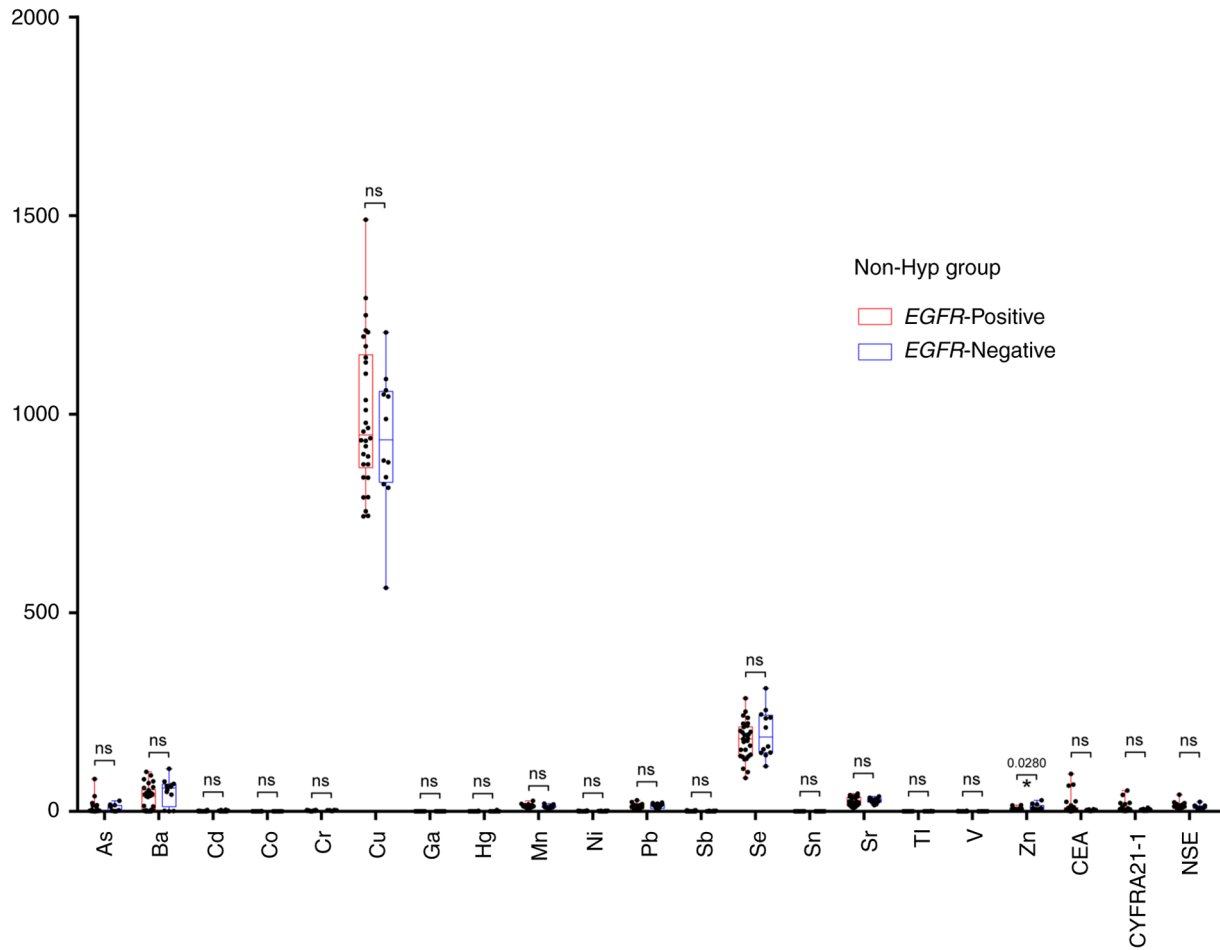


Figure S11. For patients with non-small cell lung cancer without hypertension, comparative evaluation of 18 heavy metals and three conventional serum biomarkers in patients with and without *TP53* mutations. A two-tailed unpaired t-test was applied for As, Cd, Co, Hg, Sb, Sn, Tl, Zn, CEA and CYFRA21-1, whilst a Mann-Whitney U test was used for the other 10 heavy metals and NSE. \* $P < 0.05$ . As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Mn, manganese; Ni, nickel; non-Hyp group, non-hypertension group; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

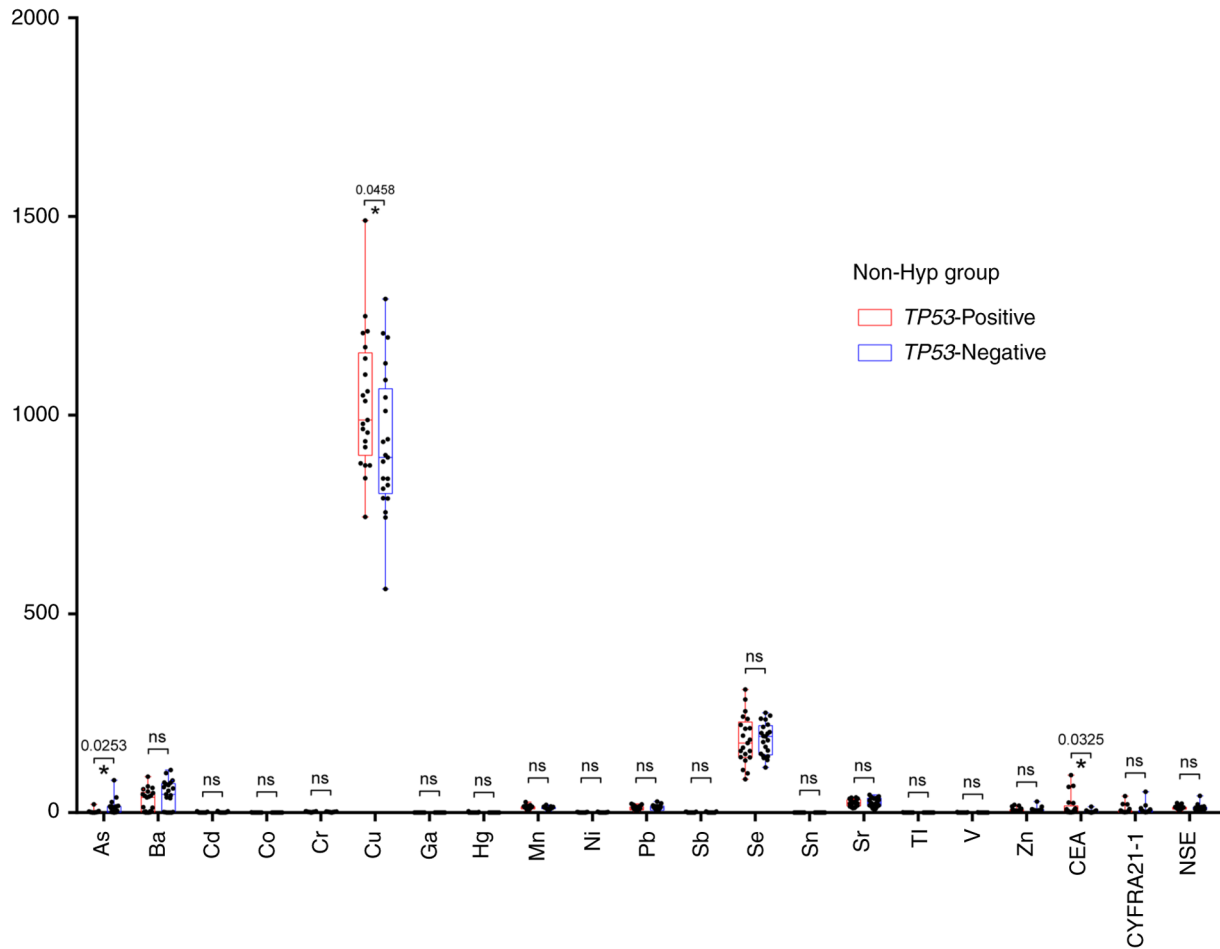


Figure S12. For patients with non-small cell lung cancer without hypertension, comparative evaluation of 18 heavy metals and three conventional serum biomarkers in patients with and without *KRAS* mutations according to the Mann-Whitney U test. \*\* $P < 0.01$  and \* $P < 0.05$ . As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Mn, manganese; Ni, nickel; non-Hyp group, non-hypertension group; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

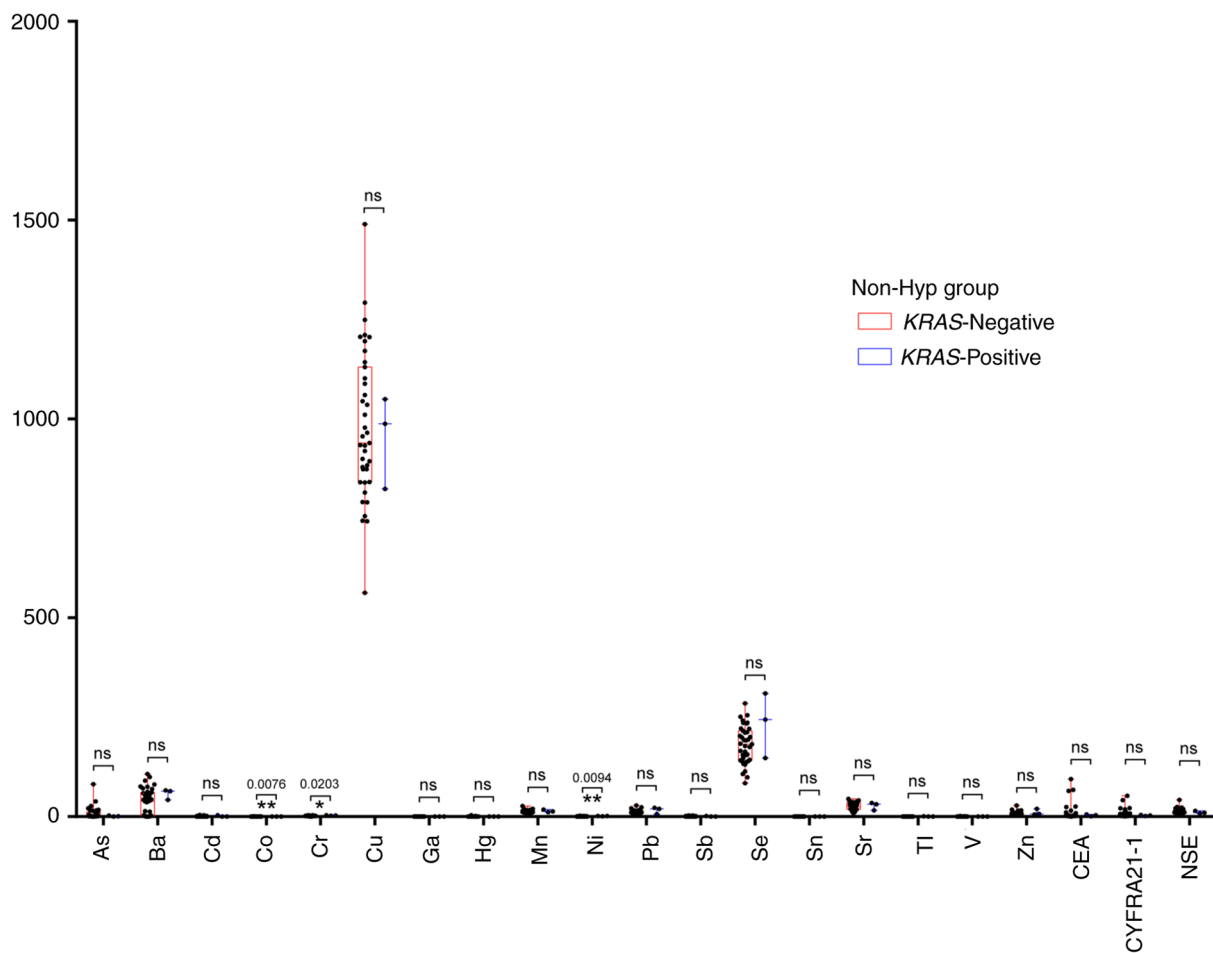


Figure S13. For patients with non-small cell lung cancer without hypertension, comparative evaluation of 18 heavy metals and three conventional serum biomarkers in male and female patients. A two-tailed unpaired t-test was applied for As, Cd, Co, Hg, Sn, Tl, Zn, CEA and CYFRA21-1, whilst a Mann-Whitney U test was used for the other 11 heavy metals and NSE. \*\*P<0.01 and \*P<0.05. As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Mn, manganese; Ni, nickel; non-Hyp group, non-hypertension group; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

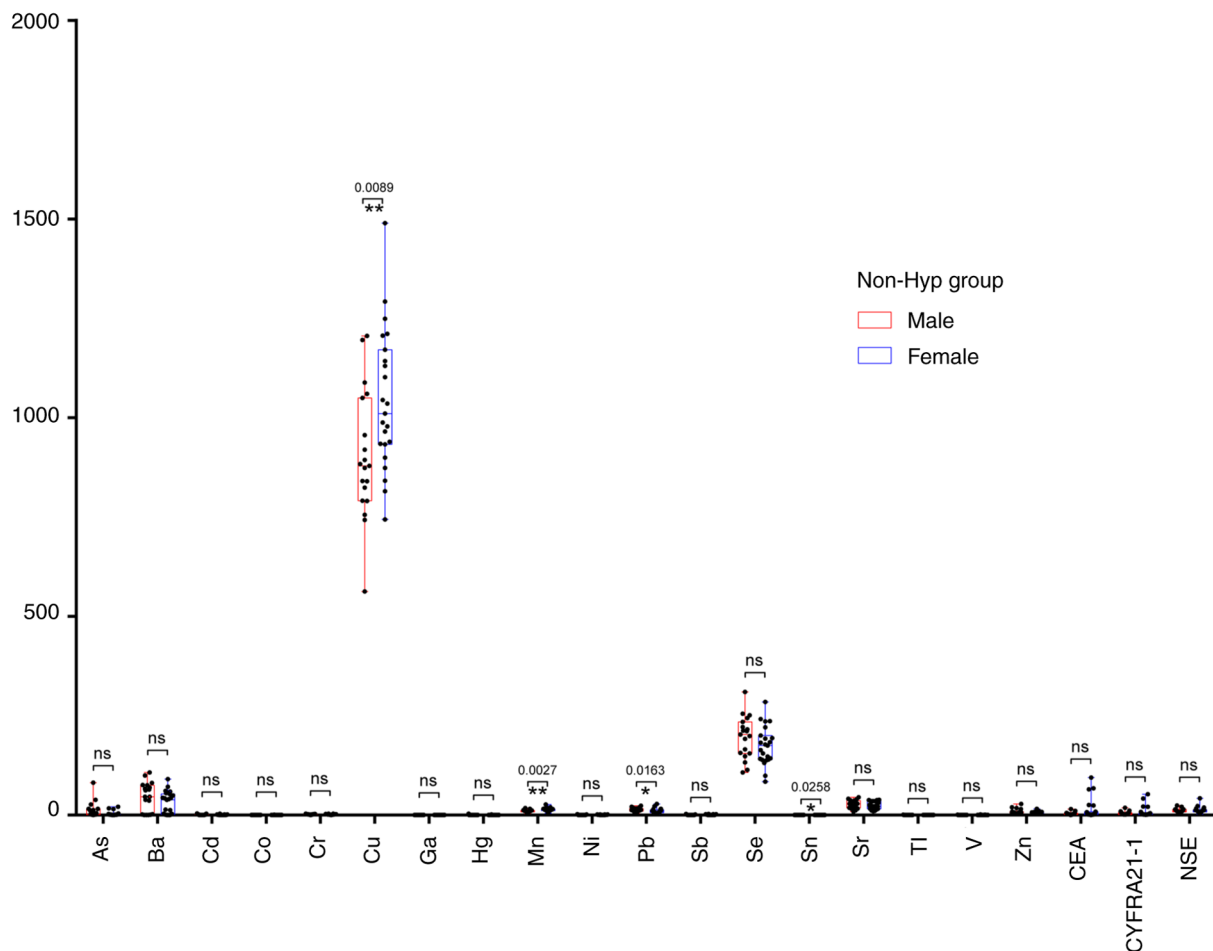


Figure S14. For patients with non-small cell lung cancer without hypertension, comparative evaluation of 18 heavy metals and three conventional serum biomarkers in patients with and without smoking history. A two-tailed unpaired t-test was applied for As, Co, Hg, Sn, Tl and CEA, whilst a Mann-Whitney U test was used for the other 13 heavy metals and 2 serum biomarkers. \*\*\*P<0.001, \*\*P<0.01 and \*P<0.05. As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Mn, manganese; Ni, nickel; non-Hyp group, non-hypertension group; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

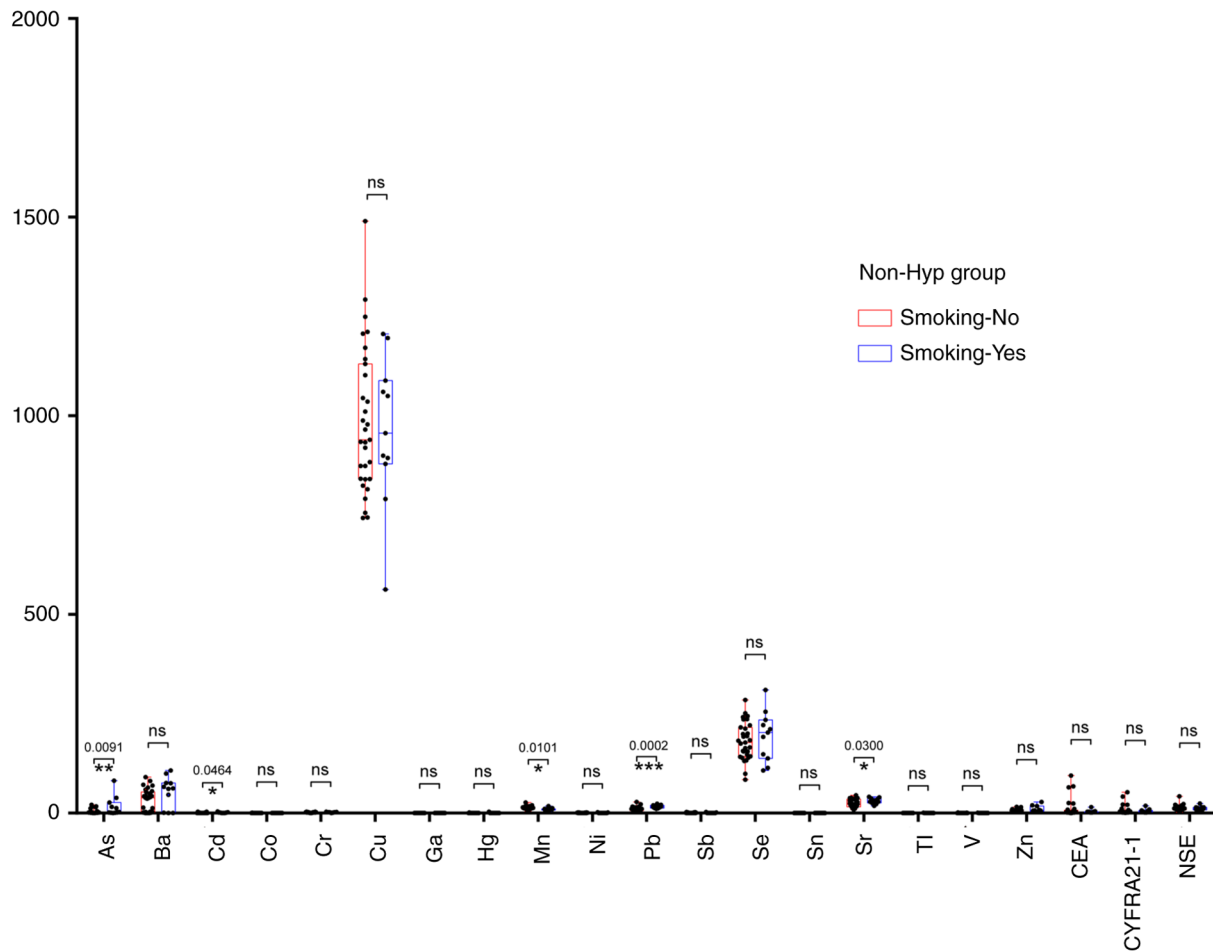


Figure S15. For patients with non-small cell lung cancer without hypertension, comparative evaluation of 18 heavy metals and three conventional serum biomarkers in patients with and without drinking history according to the Mann-Whitney U test. \*\*P<0.01 and \*P<0.05. As, arsenic; Ba, barium; Cd, cadmium; CEA, carcinoembryonic antigen; Co, cobalt; Cr, chromium; Cu, copper; CYFRA21-1, cytokeratin-19 fragments; Ga, gallium; Hg, mercury; Mn, manganese; Ni, nickel; non-Hyp group, non-hypertension group; NSE, neuron-specific enolase; Pb, lead; Sb, antimony; Se, selenium; Sn, stannum; Sr, strontium; Tl, thallium; V, vanadium; Zn, zinc.

