**Histology significant DEGs**

**Control vs Squamous Carcinoma**

52 genes, p : 6.40 E-16 ( Bonferroni : 1.96 E-12)

ABCB1 [ "lung non-small cell carcinoma" ]

ABCC2 [ "lung non-small cell carcinoma" ]

ADAM28 [ "asbestos-related lung carcinoma", "lung adenocarcinoma", "lung non-small cell carcinoma", "lung metastasis" ]

ADAMTS2 [ "malignant mesothelioma" ]

ALDH18A1 [ "lung adenocarcinoma" ]

ALOX5 [ "lung adenocarcinoma" ]

ALX4 [ "lung adenocarcinoma", "lung cancer", "bronchiolo-alveolar adenocarcinoma" ]

ARHGAP44 [ "lung carcinoma", "lung large cell carcinoma", "lung adenocarcinoma", "lung squamous cell carcinoma" ]

ARHGEF5 [ "Lung Neoplasms" ]

BIRC5 [ "lung adenocarcinoma", "malignant pleural mesothelioma", "lung non-small cell carcinoma", "lung squamous cell carcinoma" ]

BRCA1 [ "lung cancer", "lung non-small cell carcinoma" ]

BTK [ "lung adenocarcinoma", "lung non-small cell carcinoma" ]

CA12 [ "lung non-small cell carcinoma", "lung cancer", "lung metastasis" ]

CAPG [ "lung adenocarcinoma" ]

CD74 [ "lung non-small cell carcinoma" ]

CDH1 [ "lung adenocarcinoma" ]

CFTR [ "lung cancer" ]

CYP24A1 [ "lung non-small cell carcinoma", "lung adenocarcinoma", "lung cancer", "lung carcinoma", "lung small cell carcinoma" ]

DNMT3B [ "lung small cell carcinoma", "lung cancer", "lung adenocarcinoma" ]

E2F2 [ "lung non-small cell carcinoma" ]

ENO1 [ "lung non-small cell carcinoma", "lung adenocarcinoma" ]

FAP [ "lung non-small cell carcinoma", "lung squamous cell carcinoma" ]

FAT1 [ "lung small cell carcinoma", "lung non-small cell carcinoma" ]

FGF10 [ "lung adenocarcinoma" ]

FGFR3 [ "lung squamous cell carcinoma" ]

FOXP3 [ "Lung Neoplasms" ]

GCLC [ "lung non-small cell carcinoma" ]

HGF [ "malignant mesothelioma" ]

ICAM1 [ "bronchus carcinoma", "lung non-small cell carcinoma" ]

LAMC2 [ "lung small cell carcinoma", "lung non-small cell carcinoma", "lung squamous cell carcinoma" ]

LIMCH1 [ "malignant mesothelioma" ]

LTF [ "lung non-small cell carcinoma" ]

MECOM [ "peritoneal mesothelioma" ]

MMP2 [ "lung non-small cell carcinoma" ]

NDC80 [ "lung non-small cell carcinoma" ]

NNAT [ "lung non-small cell carcinoma" ]

NOS2 [ "Lung Neoplasms" ]

NOTCH3 [ "lung non-small cell carcinoma" ]

OTUB2 [ "pleuropulmonary blastoma", "DICER1 syndrome" ]

PHGDH [ "lung non-small cell carcinoma" ]

PON1 [ "Lung Neoplasms" ]

PREX2 [ "lung non-small cell carcinoma", "lung squamous cell carcinoma" ]

PTHLH [ "lung non-small cell carcinoma" ]

ROS1 [ "lung sarcomatoid carcinoma", "lung non-small cell carcinoma", "lung adenocarcinoma" ]

RUNX1T1 [ "lung small cell carcinoma" ]

SLC4A4 [ "lung adenocarcinoma" ]

SOX30 [ "lung adenocarcinoma", "lung cancer", "lung non-small cell carcinoma", "lung squamous cell carcinoma", "lung metastasis" ]

TF [ "lung adenocarcinoma", "malignant mesothelioma" ]

TNC [ "lung cancer" ]

TP63 [ "lung adenocarcinoma", "lung cancer" ]

TP73 [ "lung squamous cell carcinoma", "lung cancer", "lung non-small cell carcinoma", "lung small cell carcinoma" ]

VIM [ "malignant mesothelioma" ]

**Control vs Adenocarcinoma**

50 genes, p : 1.21 E-14 ( Bonferroni : 3.71 E-11)

ABCC2 [ "lung non-small cell carcinoma" ]

ADAM28 [ "asbestos-related lung carcinoma", "lung adenocarcinoma", "lung non-small cell carcinoma", "lung metastasis" ]

ADAMTS2 [ "malignant mesothelioma" ]

ALDH18A1 [ "lung adenocarcinoma" ]

ALOX5 [ "lung adenocarcinoma" ]

ARHGAP44 [ "lung adenocarcinoma", "lung large cell carcinoma", "lung carcinoma", "lung squamous cell carcinoma" ]

BIRC5 [ "lung adenocarcinoma", "malignant pleural mesothelioma", "lung non-small cell carcinoma", "lung squamous cell carcinoma" ]

BRCA1 [ "lung cancer", "lung non-small cell carcinoma" ]

BTK [ "lung adenocarcinoma", "lung non-small cell carcinoma" ]

CA12 [ "lung non-small cell carcinoma", "lung metastasis", "lung cancer" ]

CBX7 [ "lung adenocarcinoma" ]

CDH1 [ "lung adenocarcinoma" ]

CEACAM1 [ "Lung Neoplasms" ]

CFTR [ "lung cancer" ]

CHGA [ "lung non-small cell carcinoma" ]

CYP24A1 [ "lung adenocarcinoma", "lung non-small cell carcinoma", "lung small cell carcinoma", "lung cancer", "lung carcinoma" ]

DNMT3B [ "lung small cell carcinoma", "lung cancer", "lung adenocarcinoma" ]

E2F1 [ "lung adenocarcinoma", "lung small cell carcinoma", "lung squamous cell carcinoma", "lung non-small cell carcinoma" ]

E2F2 [ "lung non-small cell carcinoma" ]

ENO1 [ "lung non-small cell carcinoma", "lung adenocarcinoma" ]

FAP [ "lung non-small cell carcinoma", "lung squamous cell carcinoma" ]

FAT1 [ "lung small cell carcinoma", "lung non-small cell carcinoma" ]

FGF10 [ "lung adenocarcinoma" ]

FGFR2 [ "lung squamous cell carcinoma" ]

FOXP3 [ "Lung Neoplasms" ]

GATA1 [ "lung cancer" ]

GCLC [ "lung non-small cell carcinoma" ]

GNPNAT1 [ "lung adenocarcinoma" ]

LAMA3 [ "lung small cell carcinoma" ]

LAMC2 [ "lung squamous cell carcinoma", "lung small cell carcinoma", "lung non-small cell carcinoma" ]

LIMCH1 [ "malignant mesothelioma" ]

MEOX1 [ "lung adenocarcinoma", "lung non-small cell carcinoma" ]

MMP11 [ "lung non-small cell carcinoma" ]

MMP9 [ "lung non-small cell carcinoma" ]

MPO [ "lung cancer" ]

MXRA5 [ "lung non-small cell carcinoma" ]

NDC80 [ "lung non-small cell carcinoma" ]

PLLP [ "malignant mesothelioma" ]

PON1 [ "Lung Neoplasms" ]

PREX2 [ "lung non-small cell carcinoma", "lung squamous cell carcinoma" ]

PTHLH [ "lung non-small cell carcinoma" ]

RUNX1T1 [ "lung small cell carcinoma" ]

SERPINA4 [ "pleuropulmonary blastoma", "DICER1 syndrome", "malignant mesothelioma" ]

SOX30 [ "lung cancer", "lung adenocarcinoma", "lung squamous cell carcinoma", "lung metastasis", "lung non-small cell carcinoma" ]

TF [ "lung adenocarcinoma", "malignant mesothelioma" ]

TFRC [ "Lung Neoplasms" ]

TIMP3 [ "lung non-small cell carcinoma", "lung adenocarcinoma" ]

TNC [ "lung cancer" ]

TRAF4 [ "lung adenocarcinoma" ]

VIM [ "malignant mesothelioma" ]

**Control vs Large Cell**

38 genes, p : 3.24 E-11 ( Bonferroni : 9.60 E-8)

ABCB1 [ "lung non-small cell carcinoma" ]

ABCC2 [ "lung non-small cell carcinoma" ]

ADAM28 [ "lung adenocarcinoma", "asbestos-related lung carcinoma", "lung metastasis", "lung non-small cell carcinoma" ]

ALDH18A1 [ "lung adenocarcinoma" ]

ALOX5 [ "lung adenocarcinoma" ]

ARHGAP44 [ "lung adenocarcinoma", "lung squamous cell carcinoma", "lung large cell carcinoma", "lung carcinoma" ]

BAMBI [ "lung non-small cell carcinoma" ]

BIRC5 [ "lung non-small cell carcinoma", "lung adenocarcinoma", "lung squamous cell carcinoma" ]

BRCA1 [ "lung non-small cell carcinoma" ]

BTK [ "lung adenocarcinoma", "lung non-small cell carcinoma" ]

CA12 [ "lung non-small cell carcinoma", "lung metastasis" ]

CDH1 [ "lung adenocarcinoma" ]

CFTR [ "lung cancer" ]

CYP24A1 [ "lung adenocarcinoma", "lung non-small cell carcinoma", "lung small cell carcinoma", "lung carcinoma" ]

DNMT3B [ "lung adenocarcinoma", "lung small cell carcinoma" ]

E2F2 [ "lung non-small cell carcinoma" ]

ENO1 [ "lung non-small cell carcinoma", "lung adenocarcinoma" ]

FAP [ "lung squamous cell carcinoma", "lung non-small cell carcinoma" ]

FAT1 [ "lung non-small cell carcinoma", "lung small cell carcinoma" ]

FGF10 [ "lung adenocarcinoma" ]

FGFR2 [ "lung squamous cell carcinoma" ]

GCLC [ "lung non-small cell carcinoma" ]

IRAK3 [ "lung adenocarcinoma" ]

LAMC2 [ "lung non-small cell carcinoma", "lung small cell carcinoma", "lung squamous cell carcinoma" ]

MEOX1 [ "lung adenocarcinoma", "lung non-small cell carcinoma" ]

MMP11 [ "lung non-small cell carcinoma" ]

MSH2 [ "lung non-small cell carcinoma", "lung adenocarcinoma" ]

NDC80 [ "lung non-small cell carcinoma" ]

PHGDH [ "lung non-small cell carcinoma" ]

PREX2 [ "lung squamous cell carcinoma", "lung non-small cell carcinoma" ]

PTHLH [ "lung non-small cell carcinoma" ]

ROS1 [ "lung adenocarcinoma", "lung sarcomatoid carcinoma", "lung non-small cell carcinoma" ]

RUNX1T1 [ "lung small cell carcinoma" ]

SOX30 [ "lung non-small cell carcinoma", "lung metastasis", "lung squamous cell carcinoma", "lung adenocarcinoma" ]

TF [ "lung adenocarcinoma" ]

TNC [ "lung cancer" ]

TP63 [ "lung adenocarcinoma" ]

TRAF4 [ "lung adenocarcinoma" ]