

**A.**

Biological Process	GeneRatio (approx.)
proteolysis	0.20
transmembrane transport	0.18
monoatomic ion transport	0.15
monoatomic ion transmembran...	0.12
regulation of hormone levels	0.10
intracellular chemical home...	0.10
amide transport	0.08
organic cation transport	0.04
inorganic cation import acr...	0.04
positive regulation of pota...	0.02

**C.**

Biological Process	GeneRatio (approx.)	Adjusted p-value
immune response	0.32	Red
defense response	0.32	Red
biological process involved...	0.28	Purple
response to other organism	0.28	Red
response to external biotic...	0.28	Red
response to biotic stimulus	0.28	Purple
defense response to other o...	0.24	Red
defense response to symbiont	0.23	Red
inflammatory response	0.20	Blue
granulocyte migration	0.10	Blue

**B.**

lipid metabolic process

cellular lipid metabolic pr...

steroid metabolic process

xenobiotic metabolic process

cellular response to xenobi...

digestion

digestive system process

olefinic compound metabolic...

unsaturated fatty acid meta...

estrogen metabolic process

GeneRatio

Biological Process	GeneRatio (approx.)	Significance (approx.)
lipid metabolic process	0.22	0.0001
cellular lipid metabolic pr...	0.18	0.0001
steroid metabolic process	0.10	0.001
xenobiotic metabolic process	0.08	0.001
cellular response to xenobi...	0.08	0.001
digestion	0.08	0.005
digestive system process	0.08	0.005
olefinic compound metabolic...	0.08	0.005
unsaturated fatty acid meta...	0.05	0.01
estrogen metabolic process	0.05	0.05

**D.**

Heatmap showing the correlation of various cell types with the 'Collison' cell type. The color scale ranges from -0.4 (blue) to 0.4 (red).

Cell Type	Correlation
Collison_Exocrine	0.4
Collison_Classical	0.4
PurIST_Classical	0.4
Moffitt_Classical	0.4
SCISSORS_Classical	0.4
Chan-Seng-Yue_Classical B	0.4
Puleo_tumor_Classical	0.4
Chan-Seng-Yue_Classical A	0.4
Puleo_Pure Classical	0.4
Puleo_Pure Basal-like	0.4
Puleo_tumor_Basal-like	0.4
Moffitt_Basal-like	0.4
Chan-Seng-Yue_Basal-like A	0.4
PurIST_BasalLike	0.4
SCISSORS_Basal-like	0.4
Collison_QM	0.4
Chan-Seng-Yue_Basal-like B	0.4
Maurer_ECM	0.4
Maurer_Immune	0.4
Puleo_Desmoplastic	0.4
Elyada_iCAF	0.4
SCISSORS_iCAF	0.4
Puleo_Immune Classical	0.4
deCAF_restCAF	0.4
Moffitt_Activated	0.4
Puleo_Stroma Activated	0.4
Moffitt_Normal	0.4
Elyada_myCAF	0.4
SCISSORS_myCAF	0.4
deCAF_proCAF	0.4