Сначала я все 13 датасетов обработала с помощью кода из предыдущего задания. Нашлось совсем немного пасвеев, связанных с онкологией.

2: Colorectal Cancer, Small Cell Lung Cancer
3: Colorectal Cancer, Renal Cell Carcinoma, Pancreatic Cancer, Endometrial Cancer, GliomA, Prostate Cancer, Bladder Cancer, Small Cell Lung Cancer, Non Small Cell Lung Cancer
4: Pancreatic Cancer, Bladder Cancer, Non Small Cell Lung Cancer
7: Small Cell Lung Cancer
11: Small Cell Lung Cancer

Дальше я брала гены, которые экспрессировались в образцах больных пациентов и с помощью программы WebGestalt получила пассвеи KEGG, затем то же самое делала для образцов здоровой ткани. Если пассвеи встречались в обоих типах образцов, то такой пассвей считался незначимым.

1: Glioma
2: Non-small cell lung cancer / Gastric cancer
3: Pancreatic cancer / Chronic myeloid leukemia
4: Pancreatic cancer / Renal cell carcinoma
5: Renal cell carcinoma / Non-small cell lung cancer / Gastric cancer
6: Prostate cancer / Glioma
7: Pancreatic cancer / Endometrial cancer
8: Acute myeloid leukemia
9: Renal cell carcinoma
10: Small cell lung cancer
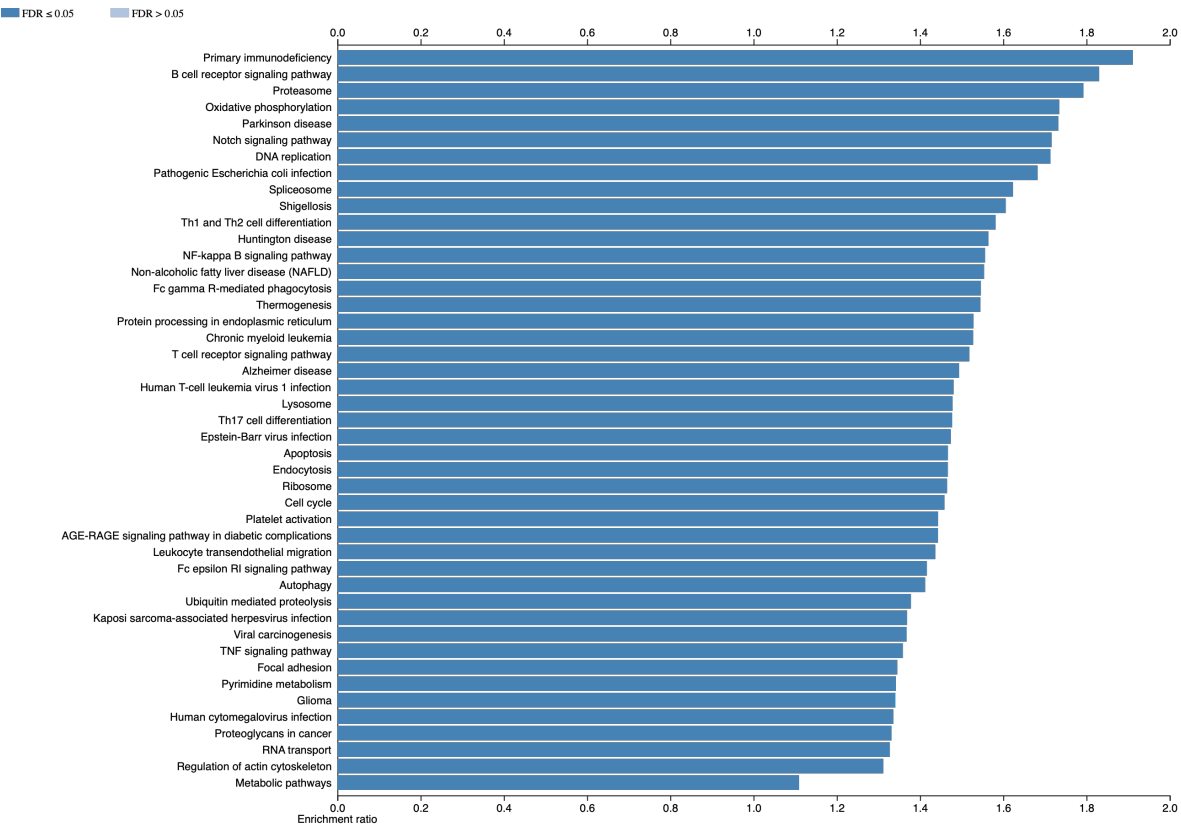**11:** Pancreatic cancer
12: Glioma
13: Endometrial cancer / Breast cancer

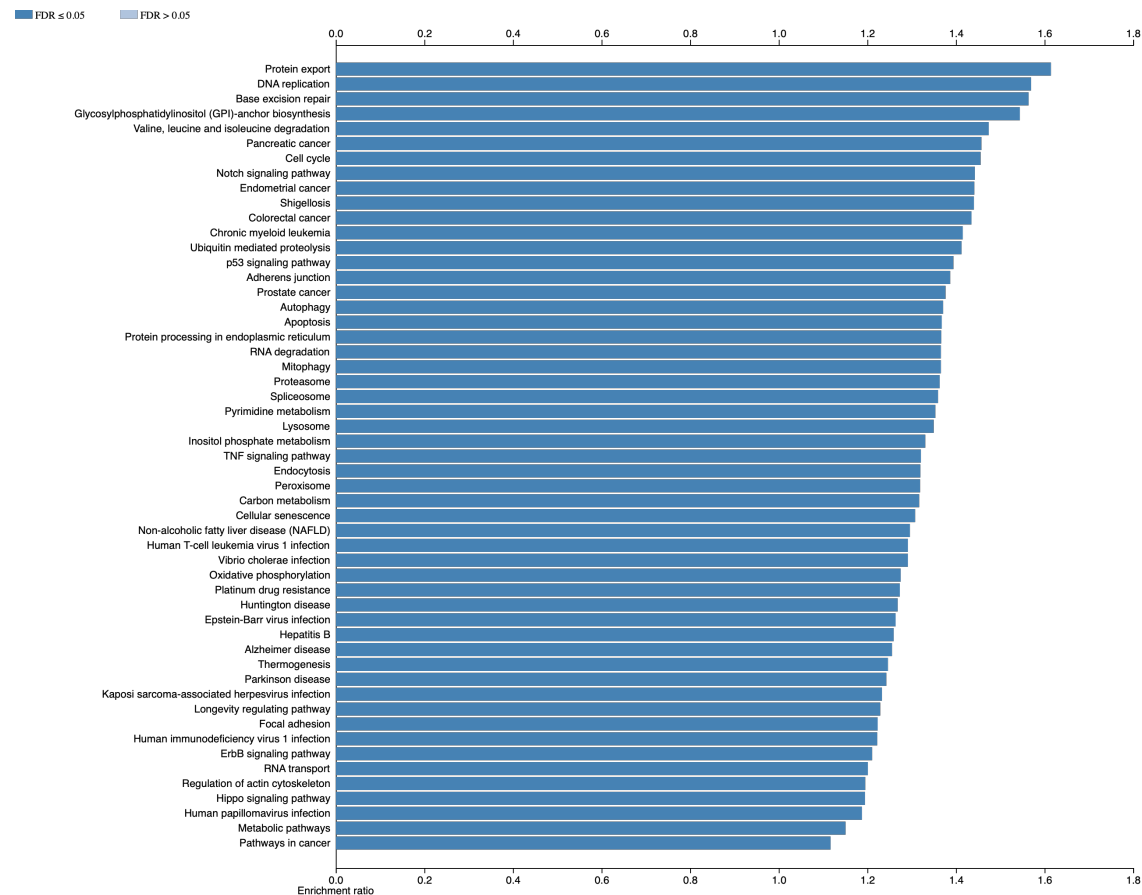# 1-Chronic myeloid leukemia, Glioma
(зеленым выделены пасвеи, которые встретились и в здоровой ткани)

2-Endometrial cancer, Non-small cell lung cancer, Pancreatic cancer, Chronic myeloid leukemia, Colorectal cancer, Renal cell carcinoma, prostate cancer, Gastric cancer, Small cell lung cancer
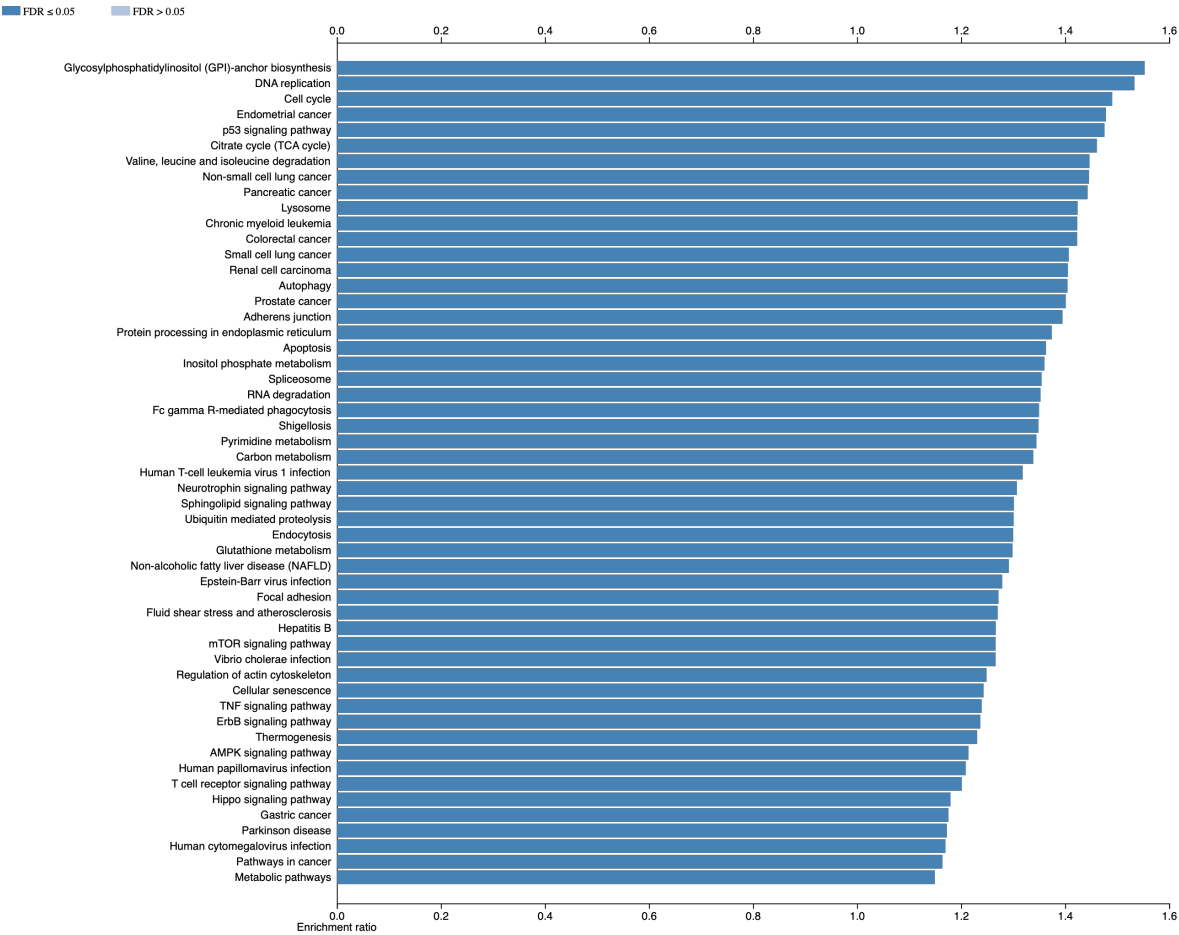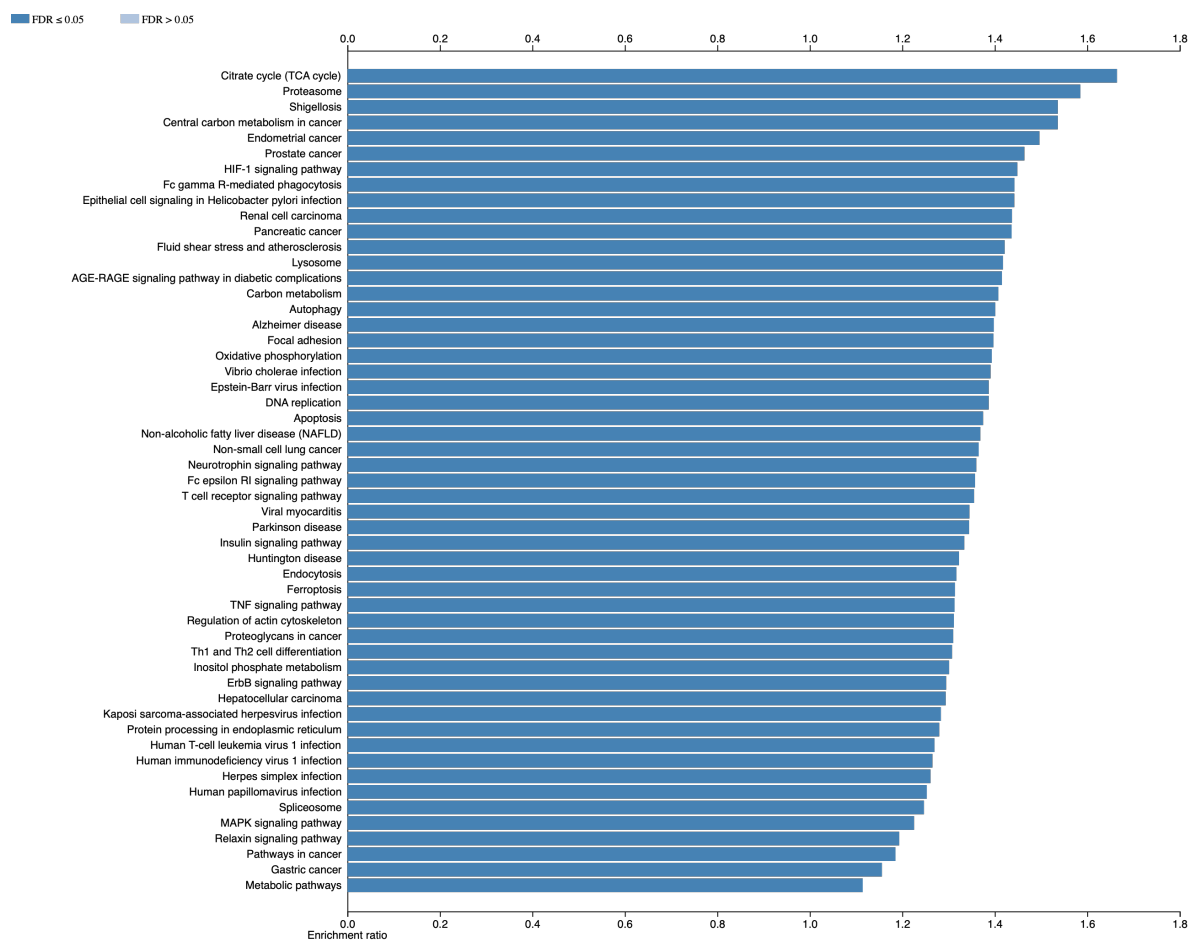
3-Pancreatic cancer, Endometrial cancer, Colorectal cancer, Chronic myeloid leukemia, Prostate cancer
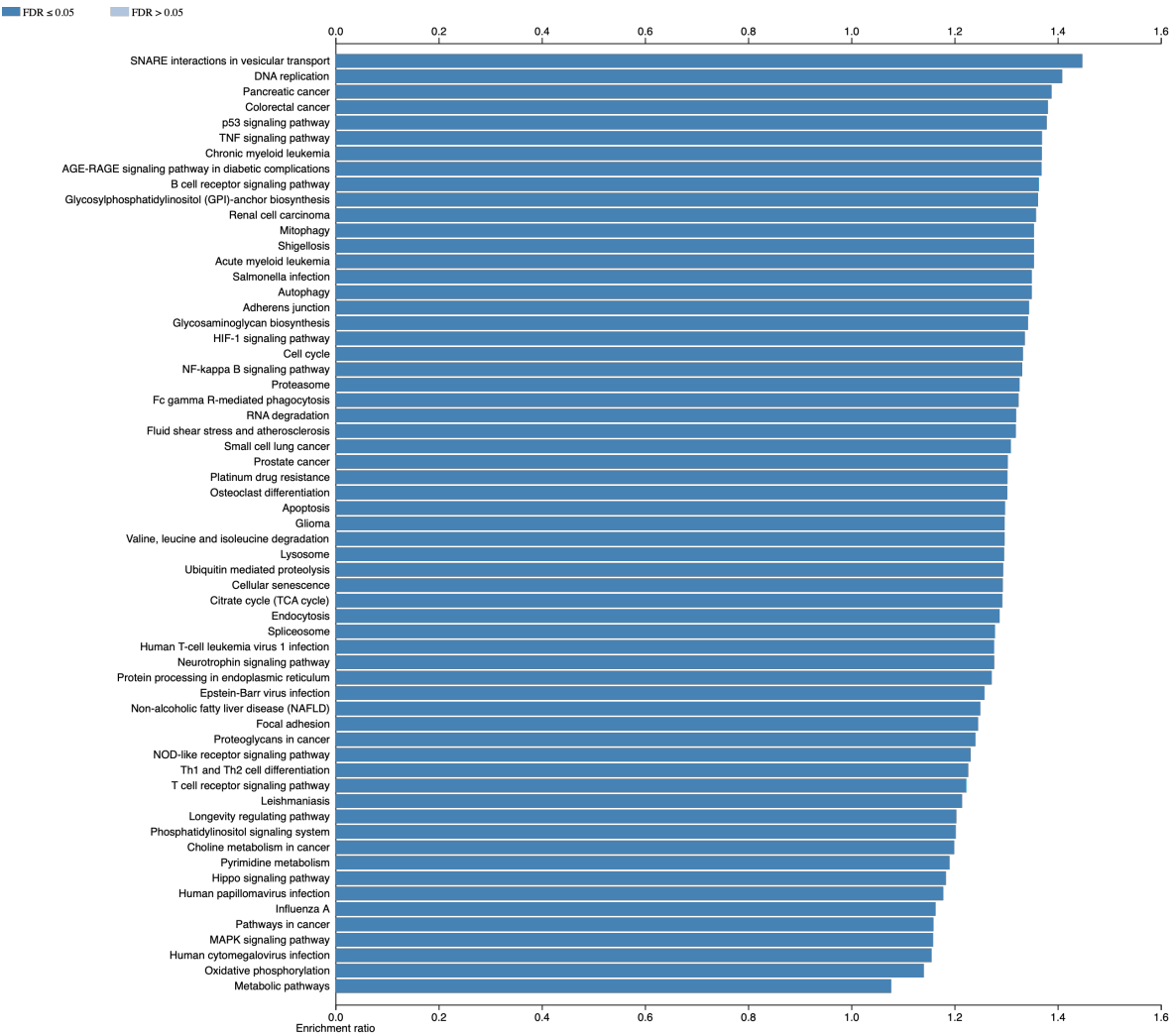
4- Non-small cell lung cancer, Pancreatic cancer, Renal cell carcinoma, Endometrial cancer, Colorectal cancer, Prostate cancer, Glioma, Gastric cancer

■ FDR ≤ 0.05   ■ FDR > 0.05

| Pathway	
Non-small cell lung cancer	
Collecting duct acid secretion	
Pancreatic cancer	
Renal cell carcinoma	
Endometrial cancer	
AGE-RAGE signaling pathway in diabetic complications	
Valine, leucine and isoleucine degradation	
Colorectal cancer	
DNA replication	
SNARE interactions in vesicular transport	
HIF-1 signaling pathway	
Prostate cancer	
Autophagy	
Choline metabolism in cancer	
Endocrine resistance	
Glioma	
Longevity regulating pathway	
Shigellosis	
FoxO signaling pathway	
Osteoclast differentiation	
Insulin resistance	
Ubiquitin mediated proteolysis	
Sphingolipid signaling pathway	
Thyroid hormone signaling pathway	
Carbon metabolism	
Regulation of actin cytoskeleton	
Apoptosis	
Relaxin signaling pathway	
Inositol phosphate metabolism	
TNF signaling pathway	
Non-alcoholic fatty liver disease (NAFLD)	
Lysosome	
Insulin signaling pathway	
mTOR signaling pathway	
MAPK signaling pathway	
Aldosterone synthesis and secretion	
Phospholipase D signaling pathway	
Cellular senescence	
Thermogenesis	
Oxytocin signaling pathway	
Endocytosis	
Protein processing in endoplasmic reticulum	
Huntington disease	
Human T-cell leukemia virus 1 infection	
Focal adhesion	
Axon guidance	
Epstein-Barr virus infection	
Hypertrophic cardiomyopathy (HCM)	
GnRH signaling pathway	
Proteoglycans in cancer	
T cell receptor signaling pathway	
Pathways in cancer	
Human papillomavirus infection	
Parkinson disease	
Gastric cancer	
Human cytomegalovirus infection	
Ras signaling pathway	
Metabolic pathways	

Enrichment ratio

5- **Endometrial cancer**, **Prostate cancer**, Renal cell carcinoma, **Pancreatic cancer**, Non-small cell lung cancer, Gastric cancer
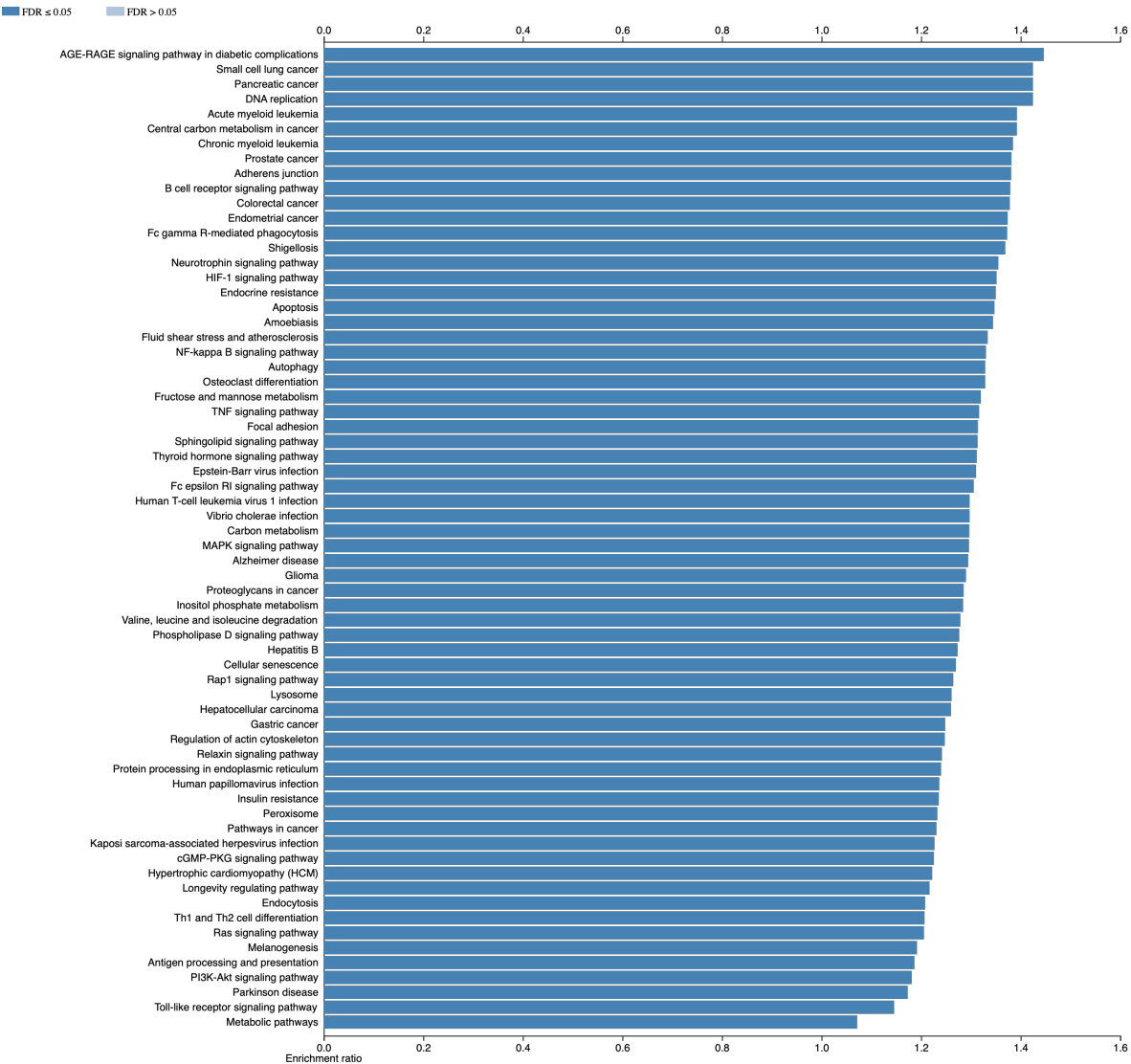
6- <u>Pancreatic cancer</u>, <u>Colorectal cancer</u>, <u>Chronic myeloid leukemia</u>, <u>Renal cell carcinoma</u>, <u>Acute myeloid leukemia</u>, <u>Small cell lung cancer</u>, Prostate cancer, Glioma

7- Renal cell carcinoma, Chronic myeloid leukemia, Pancreatic cancer, Colorectal cancer, Endometrial cancer
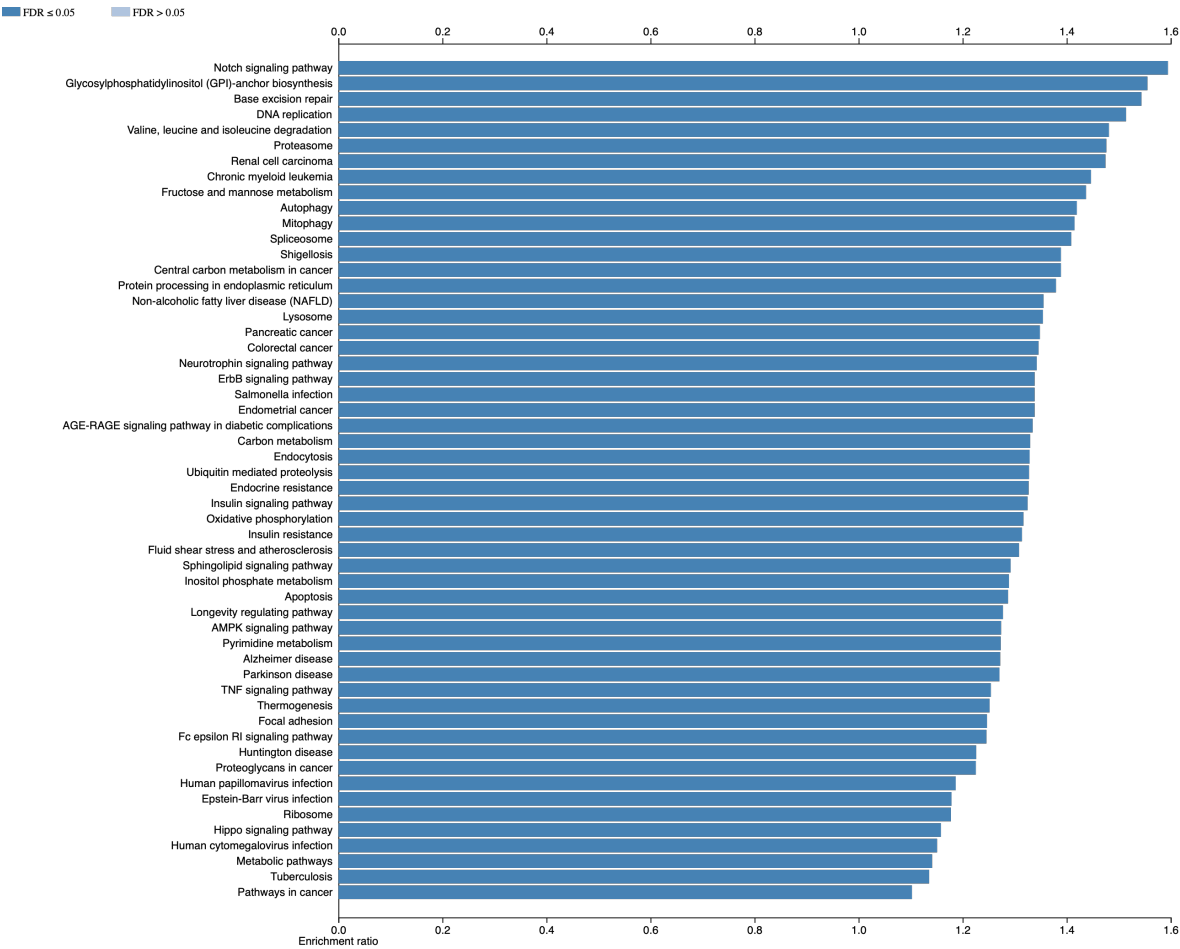
8- Small cell lung cancer, Pancreatic cancer, Acute myeloid leukemia, Prostate cancer, Colorectal cancer, Endometrial cancer, Glioma, Gastric cancer

9- Small cell lung cancer, Pancreatic cancer, Prostate cancer, Endometrial cancer, Chronic myel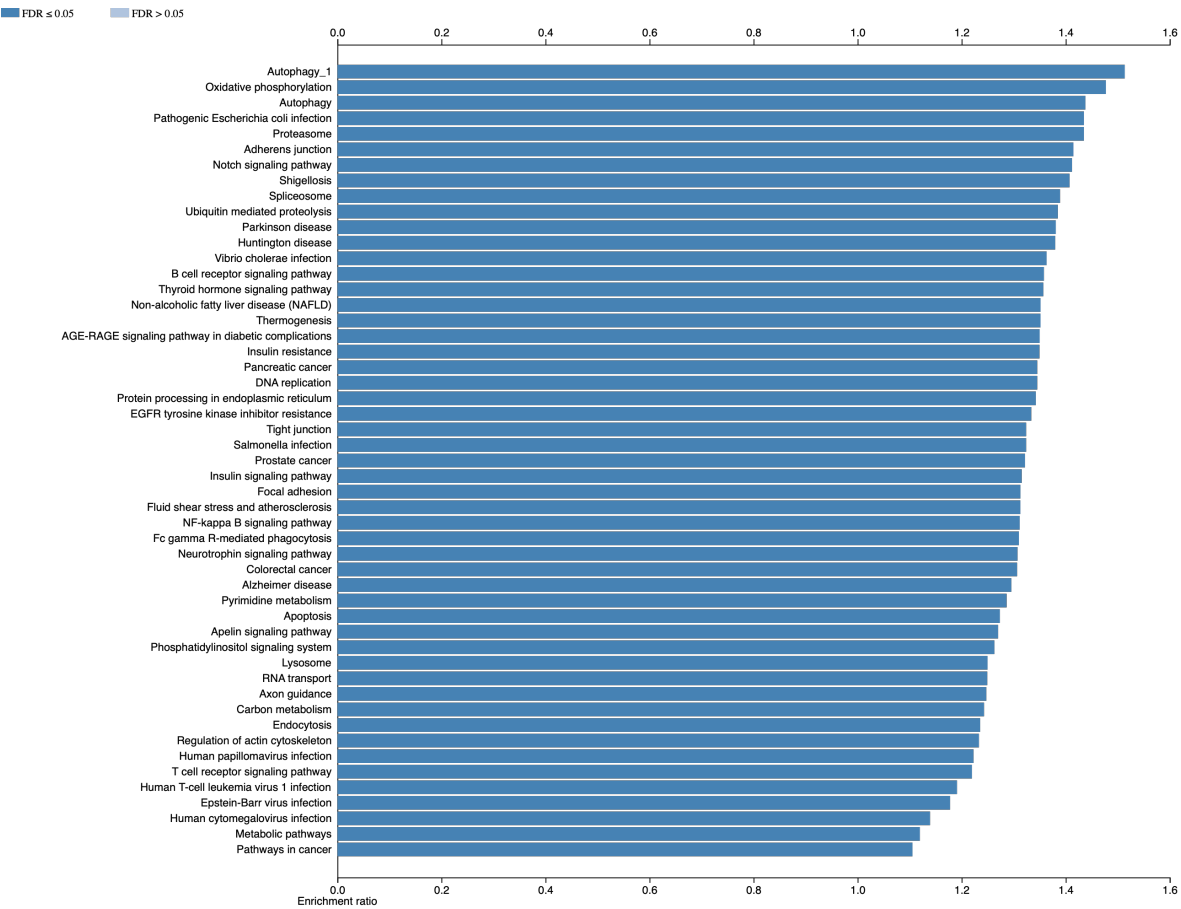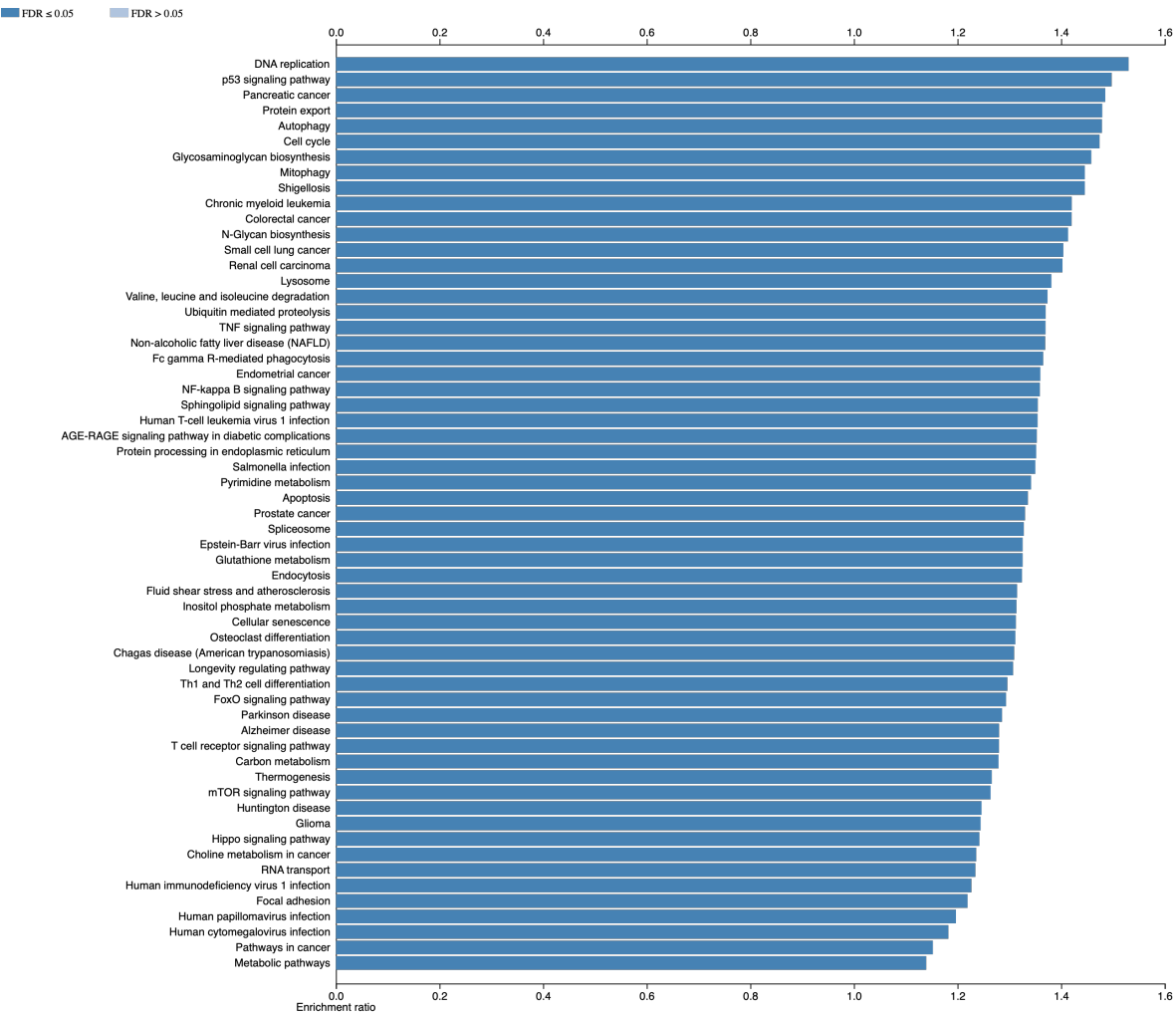oid leukemia, Colorectal cancer, Renal cell carcinoma, Gastric cancer, Glioma
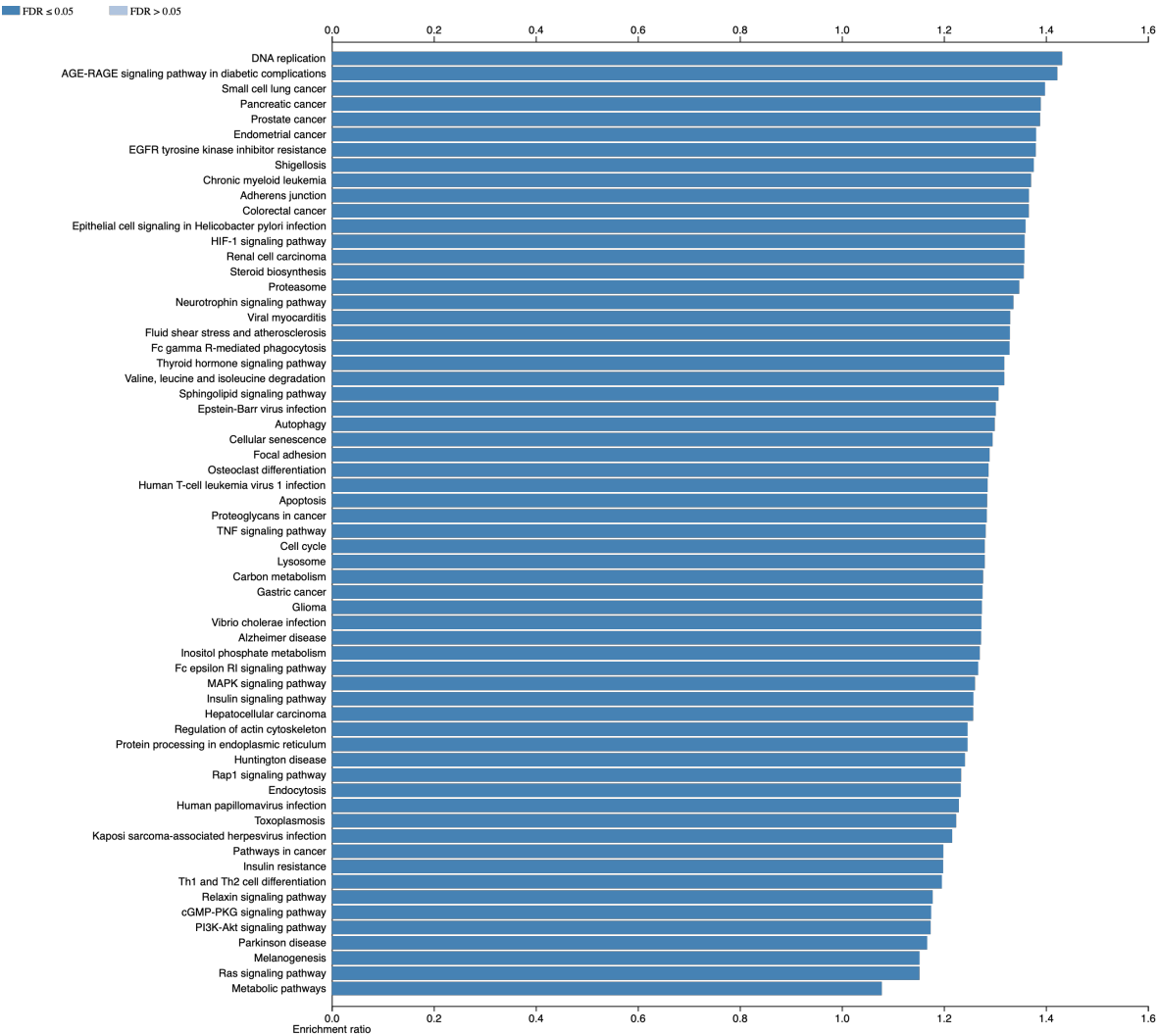
10- Colorectal cancer, Prostate cancer, Chronic myeloid leukemia, Small cell lung cancer, Glioma, gastric cancer

Legend: ■ FDR ≤ 0.05 ■ FDR > 0.05

Enrichment ratio (x-axis: 0.0 to 1.4)

Pathway	
Notch signaling pathway	
Valine, leucine and isoleucine degradation	
p53 signaling pathway	
Autophagy	
EGFR tyrosine kinase inhibitor resistance	
Endocrine resistance	
Colorectal cancer	
AGE-RAGE signaling pathway in diabetic complications	
Prostate cancer	
Ferroptosis	
Chronic myeloid leukemia	
Longevity regulating pathway	
Vibrio cholerae infection	
Small cell lung cancer	
Glioma	
HIF-1 signaling pathway	
Neurotrophin signaling pathway	
Sphingolipid signaling pathway	
Inositol phosphate metabolism	
Insulin signaling pathway	
Cell cycle	
Cellular senescence	
Choline metabolism in cancer	
Protein processing in endoplasmic reticulum	
Thyroid hormone signaling pathway	
RNA degradation	
Lysosome	
Endocytosis	
Ubiquitin mediated proteolysis	
Human T-cell leukemia virus 1 infection	
Proteoglycans in cancer	
Thermogenesis	
Non-alcoholic fatty liver disease (NAFLD)	
TNF signaling pathway	
Oxidative phosphorylation	
AMPK signaling pathway	
Epstein-Barr virus infection	
Hypertrophic cardiomyopathy (HCM)	
Apelin signaling pathway	
Focal adhesion	
Relaxin signaling pathway	
Human papillomavirus infection	
Fluid shear stress and atherosclerosis	
mTOR signaling pathway	
Regulation of actin cytoskeleton	
Kaposi sarcoma-associated herpesvirus infection	
Rap1 signaling pathway	
Gastric cancer	
Pathways in cancer	
MAPK signaling pathway	
Adrenergic signaling in cardiomyocytes	
Parkinson disease	
Ras signaling pathway	
Metabolic pathways	

11- Pancreatic cancer, Prostate cancer, Colorectal cancer

12- **Pancreatic cancer, Chronic myeloid leukemia, Colorectal cancer, Small cell lung cancer, Renal cell carcinoma, Endometrial cancer, Prostate cancer,** Glioma

FDR ≤ 0.05   FDR > 0.05

Enrichment ratio

13- <u>Chronic myeloid leukemia</u>, <u>Non small cell lung cancer</u>, <u>Colorectal cancer</u>, Endometrial cancer, <u>Pancreatic cancer</u>, <u>Prostate cancer</u>, <u>small cell lung cancer,</u> Breast cancer