

ggplot2 给图像添加阴影

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本节来介绍如何使用 GGally 下的 geom_stripped_rows 函数来完美的给图像添加阴影区域，下面通过 1 个小栗子来进行展示

1 安装并加载 R 包

```
package.list=c("tidyverse","ggsci","GGally","GEOquery")

for (package in package.list) {
  if (!require(package,character.only=T, quietly=T)) {
    install.packages(package)
    library(package, character.only=T)
  }
}
```

2 geom_stripped_* 函数具体参数

```
geom_stripped_rows(
  mapping = NULL,
```

```

data = NULL,
stat = "identity",
position = "identity",
...,
show.legend = NA,
inherit.aes = TRUE,
xfrom = -Inf,
xto = Inf,
width = 1,
nudge_y = 0
)

geom_stripped_cols(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  show.legend = NA,
  inherit.aes = TRUE,
  yfrom = -Inf,
  yto = Inf,
  width = 1,
  nudge_x = 0
)

```

3 加载数据

- 在这里使用昨天下载的 GEO 数据集

```

load("GSE33126.rdata")
gset <- gset[[1]]

```

3.0.1 数据清洗

```

sampleinfo <- pData(gset) %>% # 提取样本信息表
  select(source_name_ch1,characteristics_ch1.1) %>%
  rename(group = source_name_ch1,patient=characteristics_ch1.1) %>%
  mutate_at(vars(patient),~str_split(., " ",simplify = T)[,2]) %>%

```

```
rownames_to_column(var="name")

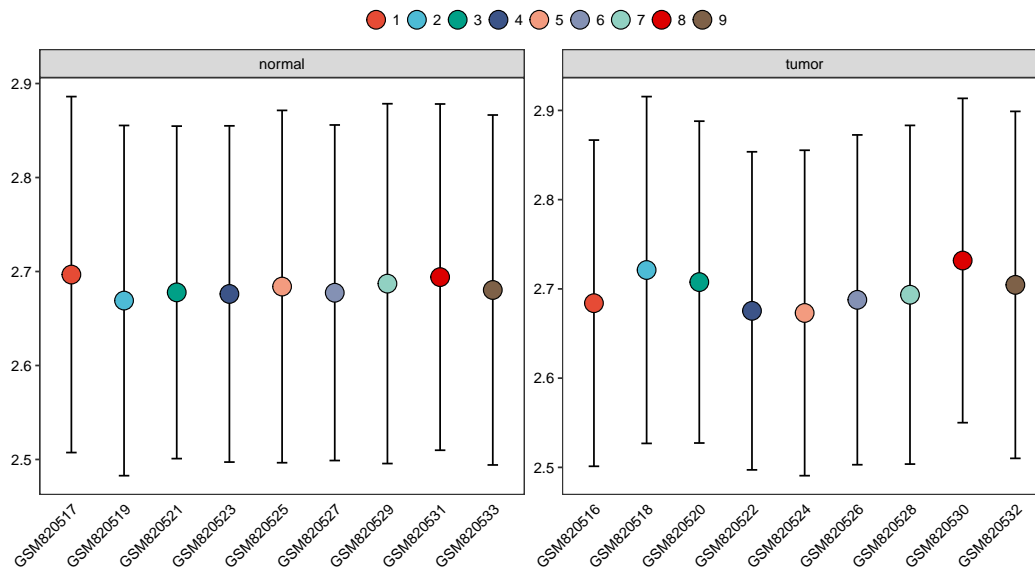
gene_exp <- exprs(gset) %>% as.data.frame() %>% rownames_to_column(var="id")
```

4 数据可视化

- 只是为了图像展示随机处理的数据无实际意义

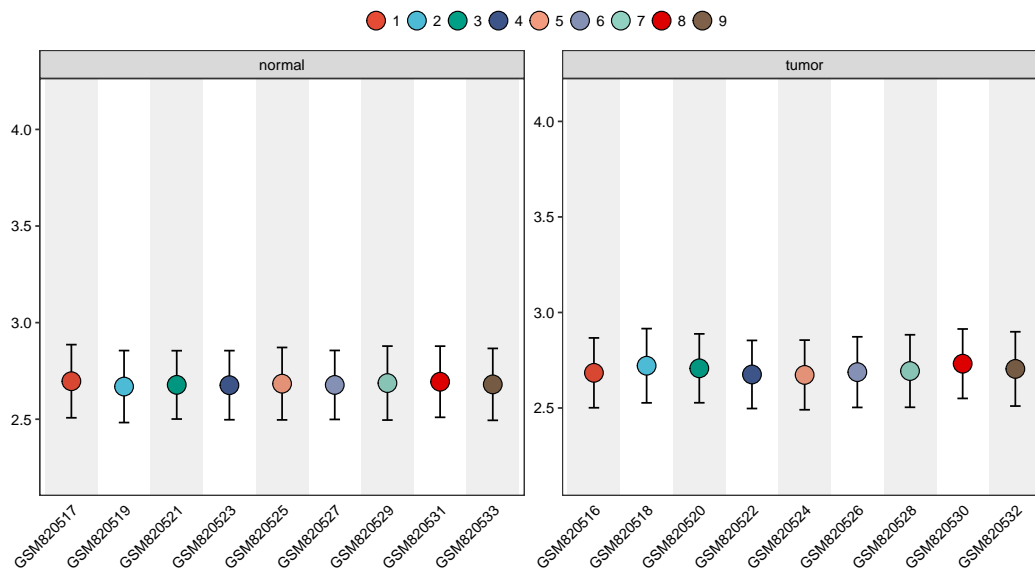
```
p <- gene_exp %>% sample_n(30) %>% column_to_rownames("id") %>%
  mutate_if(is.numeric, function(x) x+1) %>%
  log10() %>% rownames_to_column(var="id") %>%
  pivot_longer(-id) %>% left_join(., sampleinfo, by="name") %>%
  mutate(patient=as.factor(patient)) %>%
  ggplot(aes(name, value, fill=patient))+
  stat_summary(fun.data="mean_cl_normal", geom="errorbar", width=0.2) +
  stat_summary(fun = "mean", geom = "point", size=5, pch=21)+
  facet_wrap(~group, scales = "free", labeller = label_wrap_gen(), nrow = 1)+
  scale_fill_npg()+
  theme_test()+
  theme(panel.spacing.x = unit(0.2, "cm"),
        panel.spacing.y = unit(0.1, "cm"),
        axis.title = element_blank(),
        strip.text.x = element_text(size=9, color="black"),
        axis.text = element_text(color="black"),
        axis.text.x=element_text(angle = 45, vjust=1, hjust=1),
        axis.ticks.x=element_blank(),
        legend.text = element_text(color="black", size=9),
        legend.title=element_blank(),
        legend.spacing.x=unit(0.1, 'cm'),
        legend.key=element_blank(),
        legend.key.width=unit(0.4, 'cm'),
        legend.key.height=unit(0.4, 'cm'),
        legend.position = "top",
        plot.margin=unit(c(0.3,0.3,0.3,0.3), units="cm"))+
  guides(fill = guide_legend(direction = "horizontal"))+
  guides(fill=guide_legend(nrow=1, byrow=TRUE))
```

p

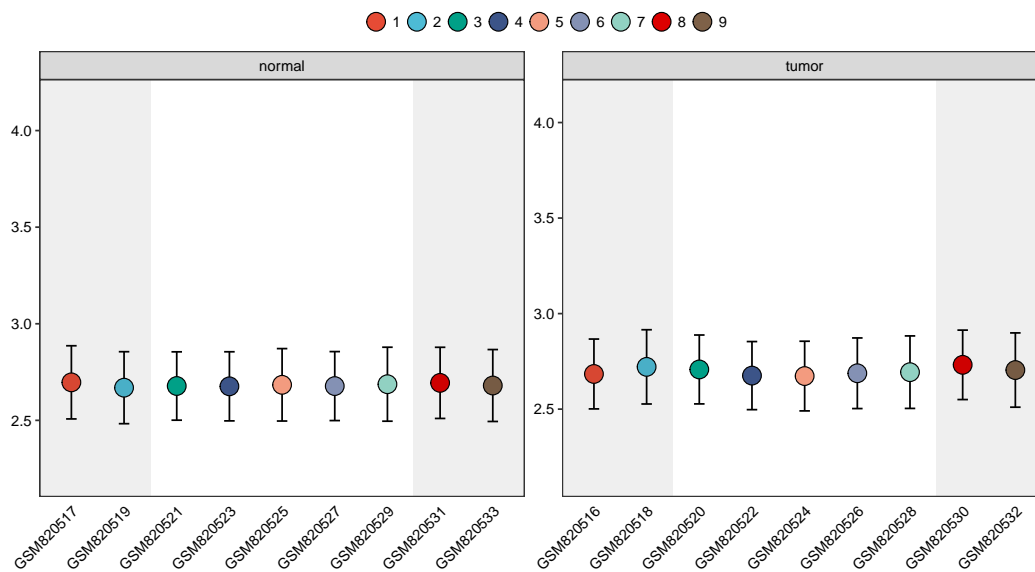


5 不同的展示形式

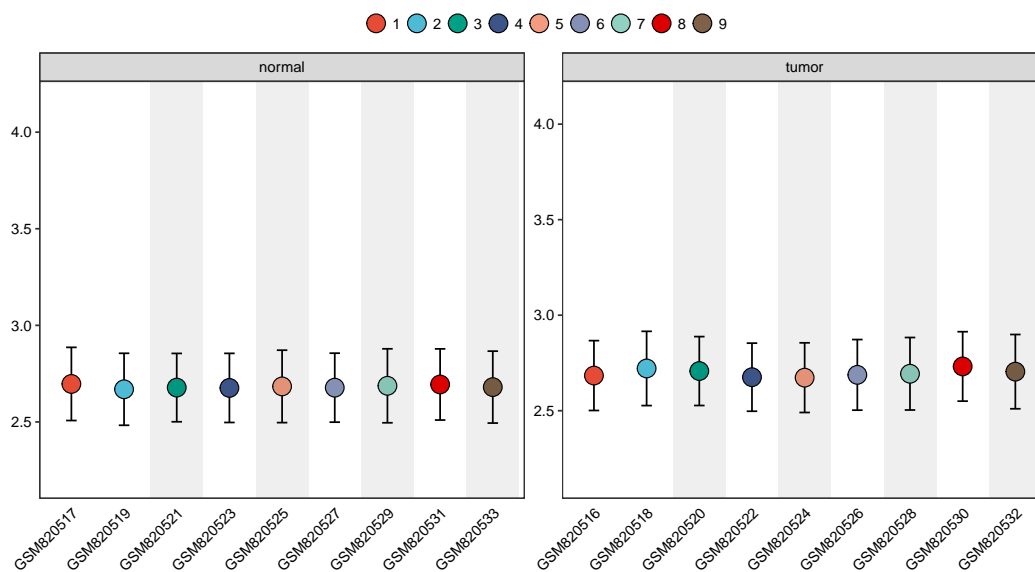
```
p + geom_stripped_cols()
```



```
p + geom_stripped_cols(width = 5)
```



```
p + geom_stripped_cols(width = 1, nudge_x = 2)
```



- 添加 `scale_x_discrete(expand = expansion(0, 0.5))` 可以去除边框两边空隙

```
p + geom_stripped_cols(odd = "blue", even = "yellow", alpha = .1)+
  scale_x_discrete(expand = expansion(0, 0.5))
```

