# Reproducible papers in the life sciences using R

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# Introduction

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- Why?

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- "There is a learning curve"
- **"I can't create figures for publication"**

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  - Images from cells/tissues
  - Figures that summarize data
  - Figures that present statistical analyses (with "p-values")

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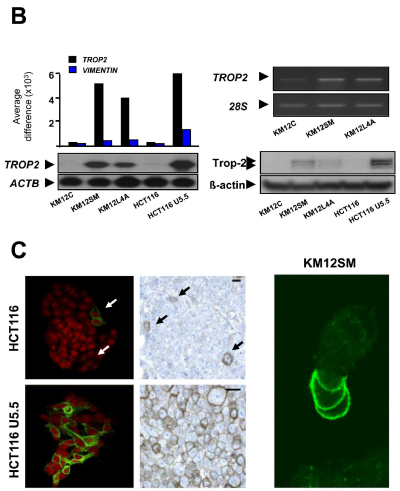
Figure 1: A typical figure




Guerra et al. *Neoplasia* **2021**

- Can figures like this be created using 'RMarkdown'?

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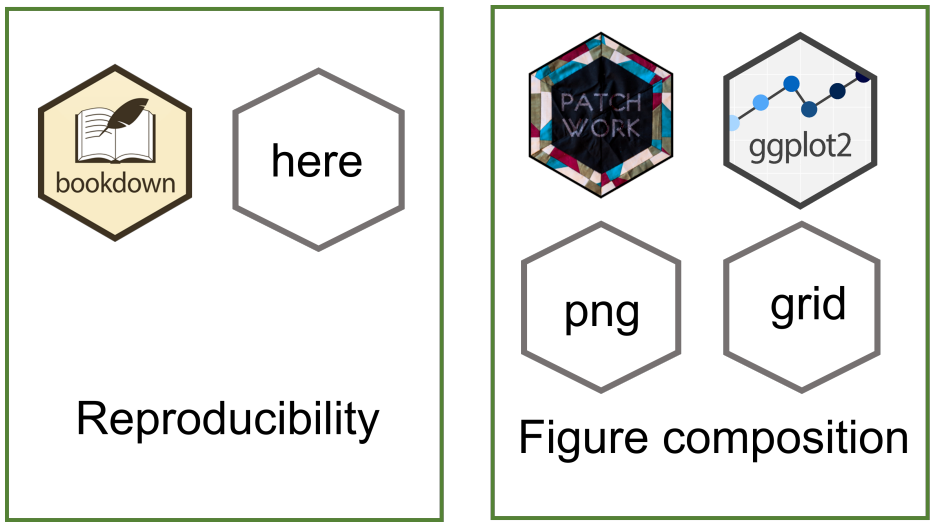
# The Solution

- Yes, we can create figures like this using R!

Figure 2: The packages



# The Solution

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- We will need to use a combination of packages to achieve this

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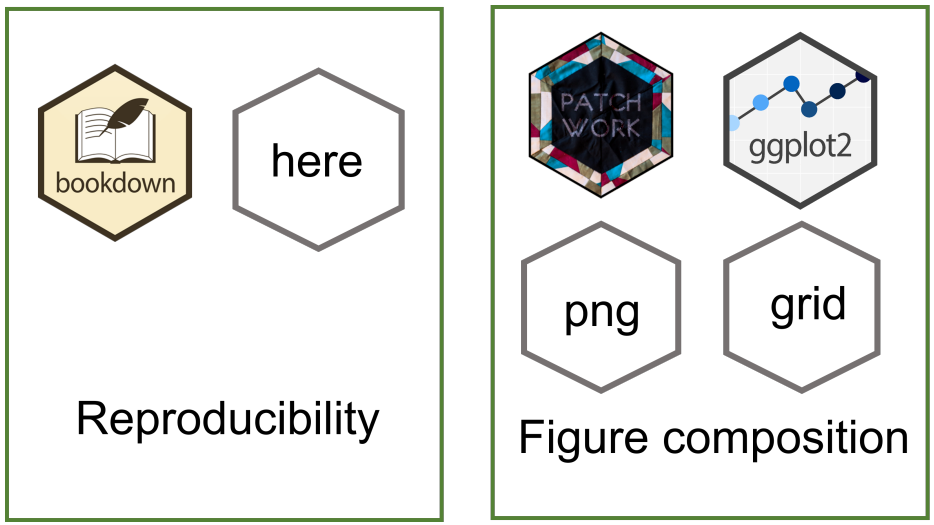

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- {here} allows to easily call scripts within the document (we will look at this later)

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  - Have some data that needs to be analyzed
  - Want to create a composite figure of images/data analysis
  - **For the sake of time, I will focus on the image composition/data analysis part**

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  - Reading the images is achieved by `grid` and `png`
  - `ggplot2` creates the plot of our analysis
  - `patchwork` allows us to assemble everything