CALTECH LIBRARY

BOOK TEMPLATE

Contents

1
Introduction

Welcome to a demo of using bookdown to create an electronic textbook.

1.1 Markdown syntax

Markdown is a simple text-based way of formatting documents. There are many flavors of markdown, we'll start with standard markdown and then add some specific rmarkdown information. Let's look at some other basics:

- You can put text into *italics* and **bold** using * or **
- To create headings, put one or more # symbols at the beginning of a line, followed by a space. One # is for a level one header, ## for a level two header, etc.
- To make bullet lists (such as this one), just start lines with a -; you can get additional levels by starting a line a couple of spaces or a tab in. Numbered lists work the same way using 1. 2. 3.

  ```
  - Topic 1
  - Topic 2
  - Topic 3
    - Topic 3a
  ```

- To cite code (including markdown syntax as above) use ‘ on both sides for short bits and “‘ in a separate line above and below larger codeblocks.

- Quote text using > at the beginning of the line (maybe you remember this from old e-mail programs?)

  ```
  > This is a Quote
  ```

- A link is set putting the text that you want to highlight in square brackets followed by the link in round brackets. Don't forget to include `http://` or `https://` at the beginning of the link

```
[This is a link](http://www.example.com)
```

You can find more markdown formatting options here. Note that markdown comes in different dialects, referred to as “flavors”. The basic elements above are part of a consensus referred to as Common Markdown, though some of the more advanced options we’ll discuss later are specific to Rmarkdown.

2
Methods

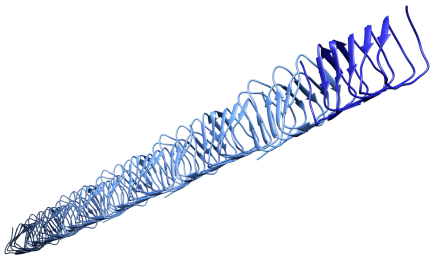
2.1 Citations and Citation Styles

2.2 Bookdown Specific Features

You can label chapter and section titles using `{#label}` after them, e.g., we can reference Chapter 1. If you do not manually label them, there will be automatic labels anyway, e.g., Chapter 2.

2.3 Including Code and Images

Schematic: Bactofilin



PDB: 6RIB Bactofilins are found in many species of bacteria and archaea, suggesting that they perform diverse (and currently unknown) functions. They polymerize into very stable filaments with a triangular beta-helical structure, like this one from *Thermus thermophilus* [Deng et al., 2019]. Bactofilin filaments lack two hallmarks of actin- and tubulin-based cytoskeletal elements: polarity and dynamic assembly/disassembly. In this way, they are similar to intermediate filaments in eukaryotic cytoskeletons.

2.4 LaTeX

2.5 Caltech Custom Features

If you have a video on CaltechDATA, we can add embed it using just the DOI. This example also shows how you can define a caption using a () label outside of am element, let Bookdown format it, and them embed it

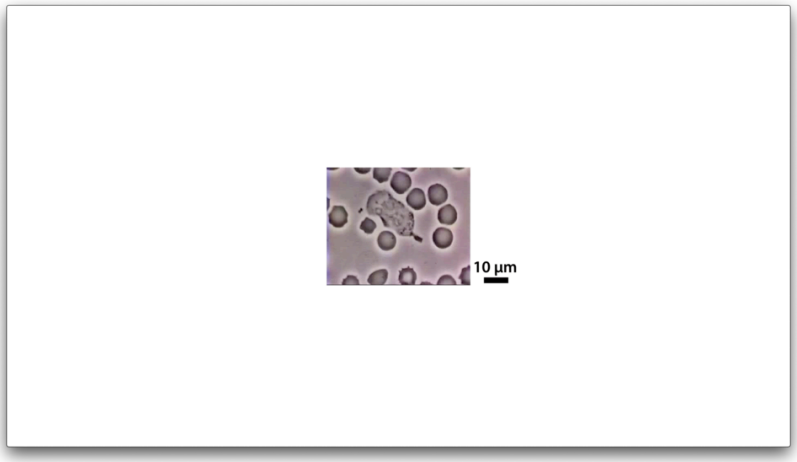


Figure 2.1: Staphylococcus aureus
Collected by: David Rogers Movie
DOI: 10.22002/D1.1463

We also provide a method for embeddig video files locally, if you want the book to work offline.

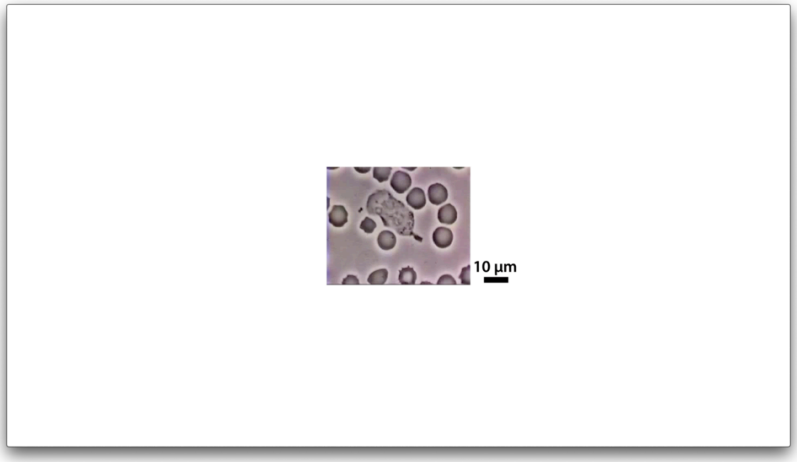


Figure 2.2: Staphylococcus aureus
Collected by: David Rogers Movie
DOI: 10.22002/D1.1463

Further Reading

Errington (2013). *L-form bacteria, cell walls and the origins of life* [Errington, 2013].

Ptacin and Shapiro (2013). *Chromosome architecture is a key element of bacterial cellular organization* [Ptacin and Shapiro, 2013].

Sleytr and Beveridge (1999). *Bacterial S-layers* [Sleytr and Beveridge, 1999].

Strahl and Errington (2017). *Bacterial membranes: Structure, domains, and function* [Strahl and Errington, 2017].

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Bibliography

Xian Deng, Andres Gonzalez Llamazares, James M. Wagstaff, Victoria L. Hale, Giuseppe Cannone, Stephen H. McLaughlin, Danguole Kureisaite-Ciziene, and Jan Löwe. The structure of bactofilin filaments reveals their mode of membrane binding and lack of polarity. *Nat Microbiol*, 4(12):2357–2368, December 2019. ISSN 2058-5276. DOI: 10.1038/s41564-019-0544-0.

J. Errington. L-form bacteria, cell walls and the origins of life. *Open Biol*, 3(1):120143, January 2013. ISSN 2046-2441 (Electronic) 2046-2441 (Linking). DOI: 10.1098/rsob.120143.

J. L. Ptacin and L. Shapiro. Chromosome architecture is a key element of bacterial cellular organization. *Cell Microbiol*, 15(1):45–52, January 2013. ISSN 1462-5822 (Electronic) 1462-5814 (Linking). DOI: 10.1111/cmi.12049.

U. B. Sleytr and T. J. Beveridge. Bacterial S-layers. *Trends Microbiol*, 7(6):253–60, June 1999. ISSN 0966-842X (Print) 0966-842X (Linking). DOI: 10.1016/s0966-842x(99)01513-9.

H. Strahl and J. Errington. Bacterial membranes: Structure, domains, and function. *Annu Rev Microbiol*, July 2017. ISSN 1545-3251 (Electronic) 0066-4227 (Linking). DOI: 10.1146/annurev-micro-102215-095630.