Introduction In this chapter, I aim to study the genetic toggle switch experimentally. This chapter is organised as follows: In the first section I provide an overview of the circuit used and then outline the methods used for the experiments carried out. In the subsequent section I investigate the effect that the switch has on the growth rate of the bacteria. Then I examine the concentrations of the inducers and the time needed to flip the switch.

Flow cytometry and model fitting

Flow cytometry detects the fluorescent intensity levels in individual cells. It can also provide physical information about the size and granularity of a cell via the forward and side scattering respectively. An overview of flow cytometry is shown in Figure fig:flow$_overv.Alaserexcitesthefluorochromepresentinthebacterialcells.Thefluoroch$
10^5 cells.

figure*[tb] center [scale=0.9]chapterABCFlow/images/flow-overview.png [LoF caption]fig:flow$_overv$:
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$4pickupthesignals.Thecytometeralsopicksupsizeandgranularityinformationviatheforwardscatter(FSC)andsidescatt$