

Genomics Lite: Sequencing Malaria in Focus

Learning Resources



These resources are designed to support and further attendees understanding of malaria and sequencing, and are aimed at students in upper secondary years (e.g. year 10 and higher).

For further resources, visit yourgenome.org

What is malaria?

Malaria is a life-threatening disease caused by the Plasmodium parasite, and transmitted through the bite of a female Anopheles mosquito.

<https://www.yourgenome.org/facts/what-is-malaria>

Once in the human body, malaria is able to evade the immune system through a unique mechanism. Through constantly changing a key membrane protein - PfEMP1 the immune system can't keep up and fails to identify malaria in the bloodstream.

<https://www.yourgenome.org/stories/malaria-the-master-of-disguise>

Malaria can be treated if detected and tackled earlier, but there is a growing problem of drug resistance.

<https://www.yourgenome.org/facts/how-is-malaria-treated-and-prevented>

Managing Malaria poses healthcare, financial and policy questions. In this Malaria Challenge activity, students come up with the best strategy to tackle Malaria in different communities.

<https://www.yourgenome.org/activities/malaria-challenge-managing-malaria>

What is single cell RNA Sequencing?

Single cell RNA sequencing (scRNA seq) is a type of next generation sequencing that helps scientists isolate and understand the genome of individual cells, allowing them to study differences between individual cells.

RNA sequencing provides information about which genes are being expressed in a particular cell, providing an insight into what genes are being differently expressed in cell types.

<https://www.yourgenome.org/facts/what-is-rna>

<https://www.yourgenome.org/facts/what-is-rna-sequencing>

This video highlights the different steps involved in doing scRNA Sequencing in the lab.

<https://youtu.be/CVaSHbQg-P8>