

Developments in Cancer Immunotherapy

University of Cambridge Online



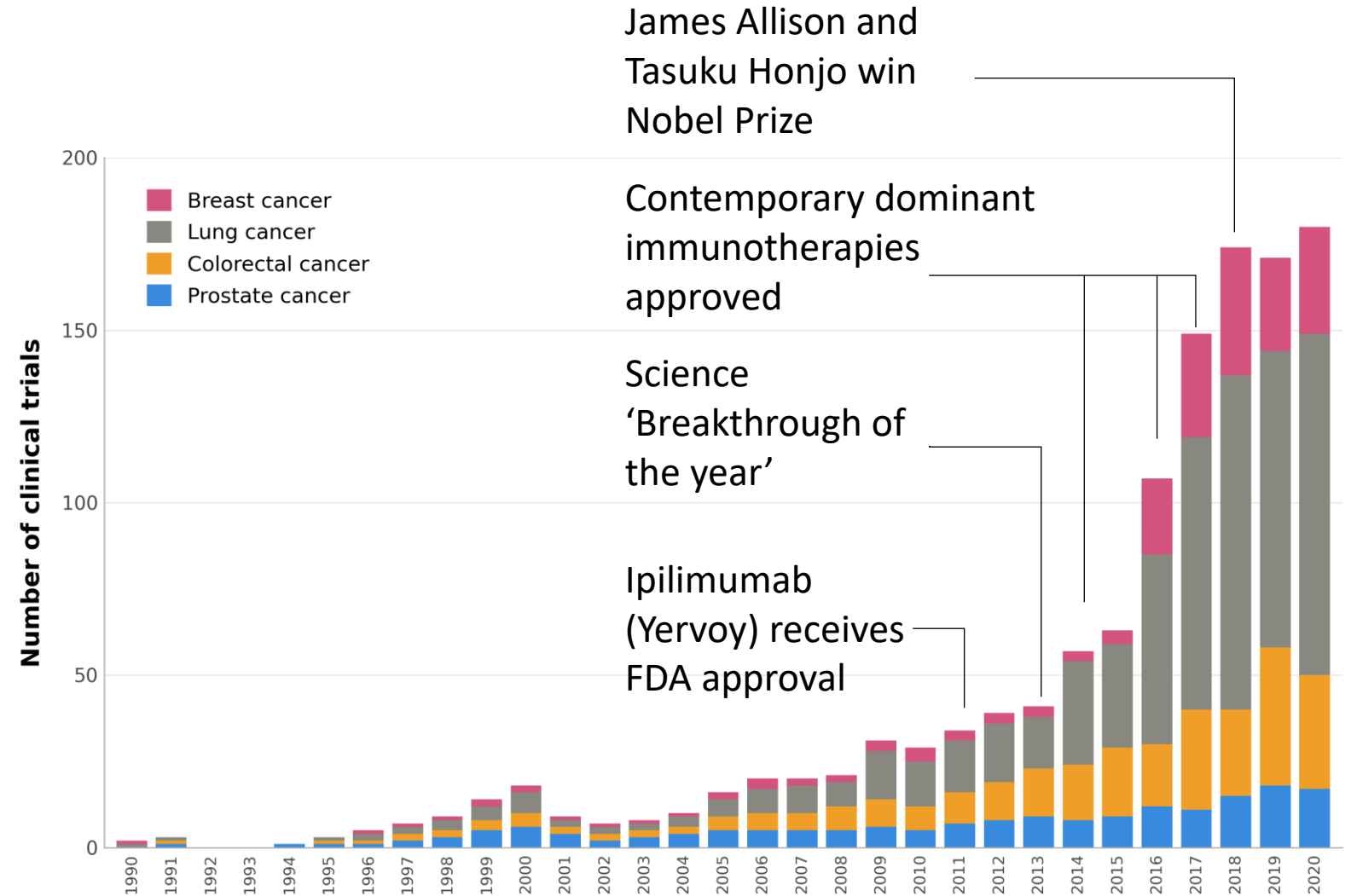
FROM FOUNDATIONS TO FLUENCY

01

Disclaimer: This presentation will reference various cancer types.

CANCER IMMUNOTHERAPY: WHERE ARE WE?

- Explosion of exploration in immunotherapies.
- Experts in the field remain limited and geographically sparse.
- Traditional medical education and training struggling to reflect rapid advances in the field.



Gonzales Carazas et al (2021). © 2021 Cambridge University Press. Reused with permission from Cambridge University Press.

Developments in Cancer Immunotherapy



Explore the transformative field of cancer immunotherapy, gaining essential knowledge to contribute to groundbreaking advances in cancer treatment.

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Price
£900

[Payment options](#)



Commitment
4-5 hours a week

[Activities breakdown](#)



Study mode
Tutor guided

[Learning approach](#)



Certificate of Achievement

Evidence your learning with a Certificate of Achievement from the University of Cambridge on successful completion



Duration of 4 weeks

Regular weekly participation is key to gaining the most from your learning experience.



[Course brochure](#)



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WHO IT'S FOR

Professionals & graduates from scientific backgrounds

Building fundamental understanding of immunology and its role in current and future cancer immunotherapies

Equipping learners to contribute across medicine, biopharma and research

Learning outcomes

01

Articulate the molecular, cellular and anatomic architecture of the innate and adaptive immune system, and the basis for self / non-self recognition

02

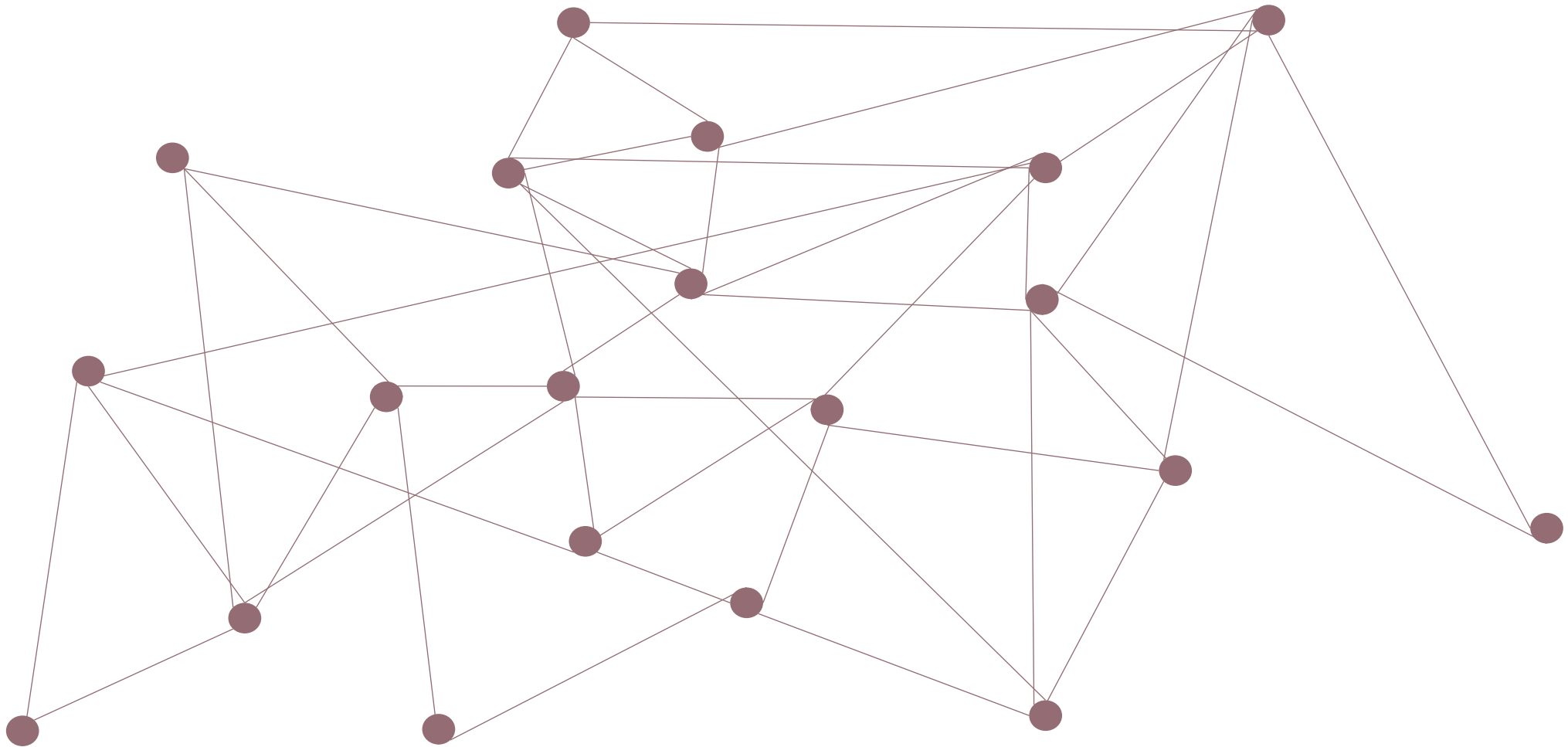
Identify the stages of cancer development, the hallmarks of cancer, and the mechanisms of immunosurveillance, editing and escape

03

Compare the existing landscape of immunotherapies, their side effects, and the monitoring of therapeutic immune responses

04

Explain emergent barriers to immunotherapy responsiveness and identify areas for future immunotherapy



The immune system is complex

One visual language, end-to-end

Media is integrated holistically across the learning journey, applying a consistent visual approach to every schematic and animation.

[Download transcript](#)

2. Infection

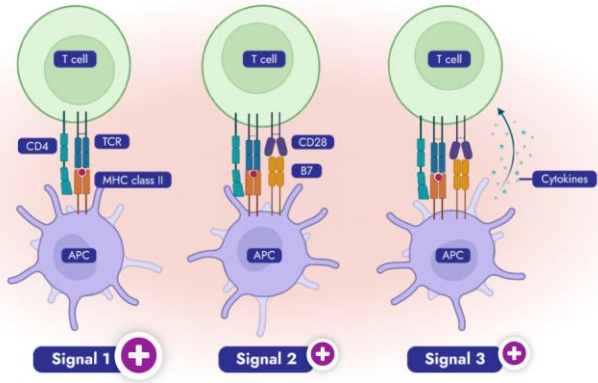
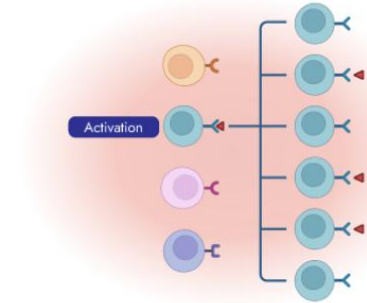


Diagram illustrating the three signals required for T cell activation by an Antigen Presenting Cell (APC):

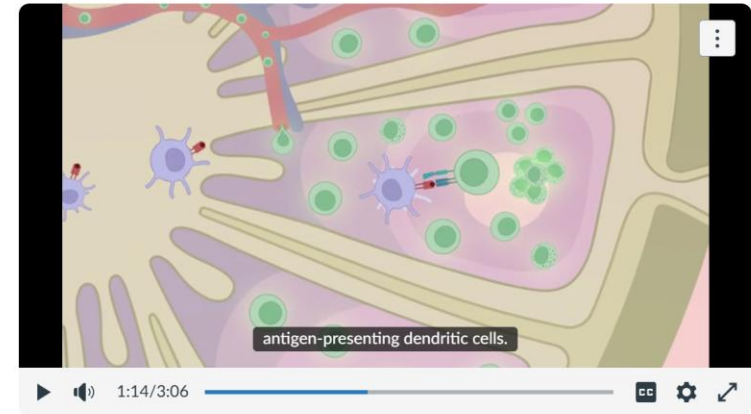
- Signal 1:** CD4, TCR, MHC class II
- Signal 2:** CD28, B7
- Signal 3:** Cytokines



Activation

When a pathogen infects the body, rare lymphocytes with receptors that happen to recognise specific antigens expressed by that pathogen become activated.

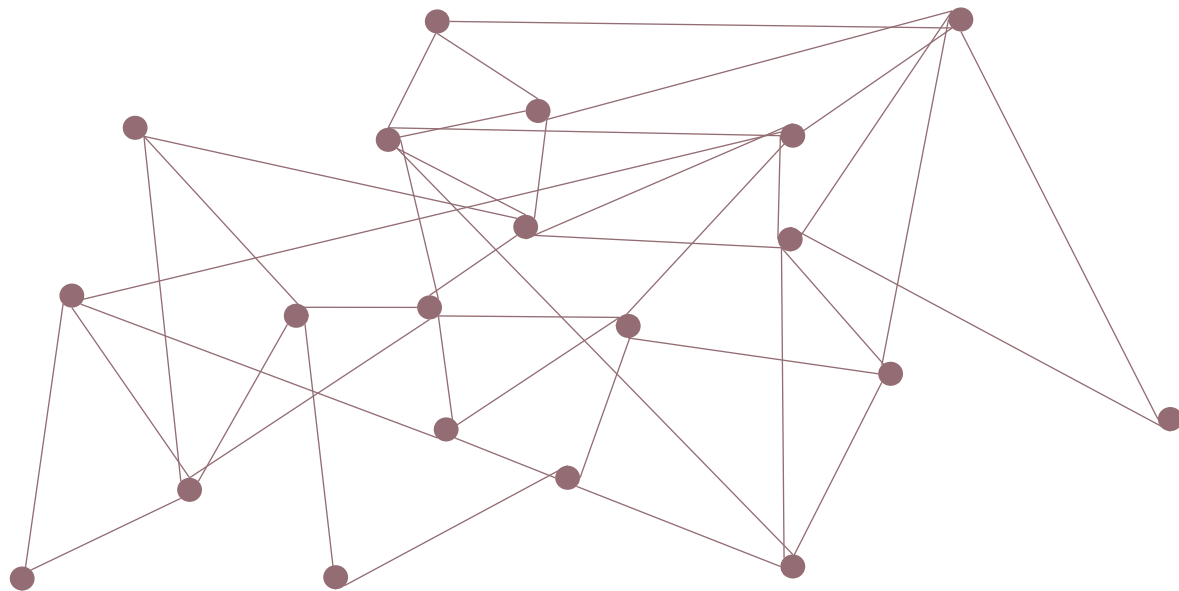
These lymphocytes proliferate massively into a clonally amplified population of pathogen-reactive cells and differentiate into effector cells to combat the infection.

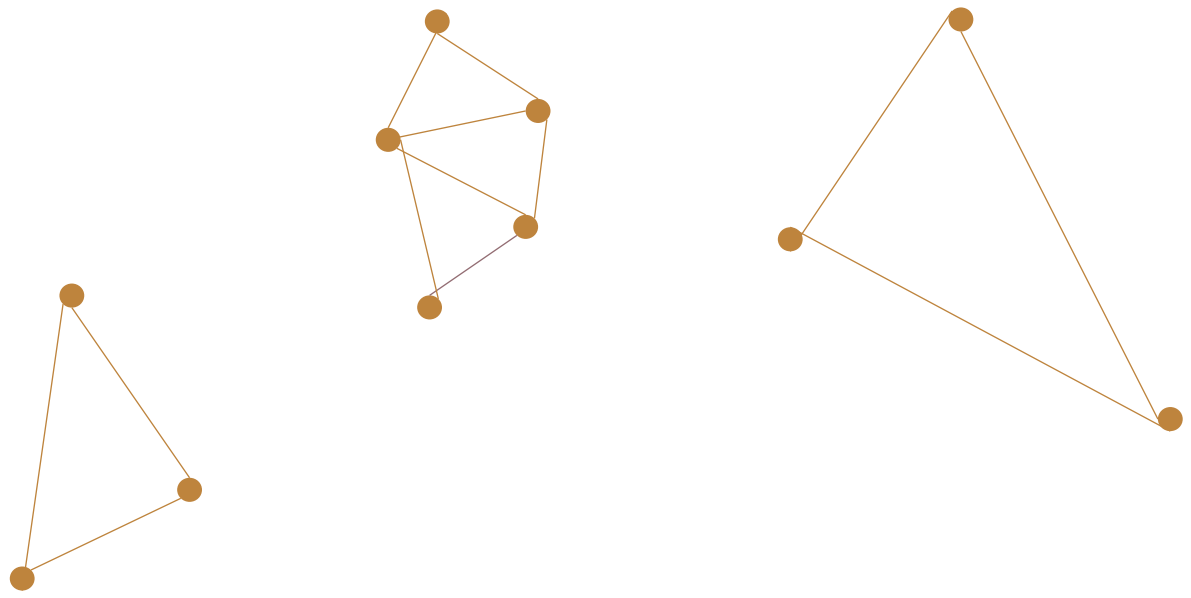


antigen-presenting dendritic cells.

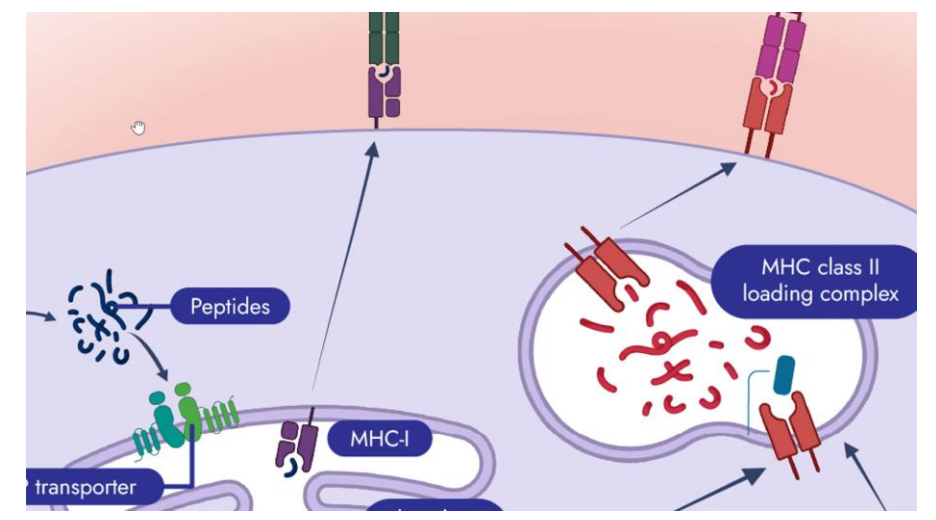
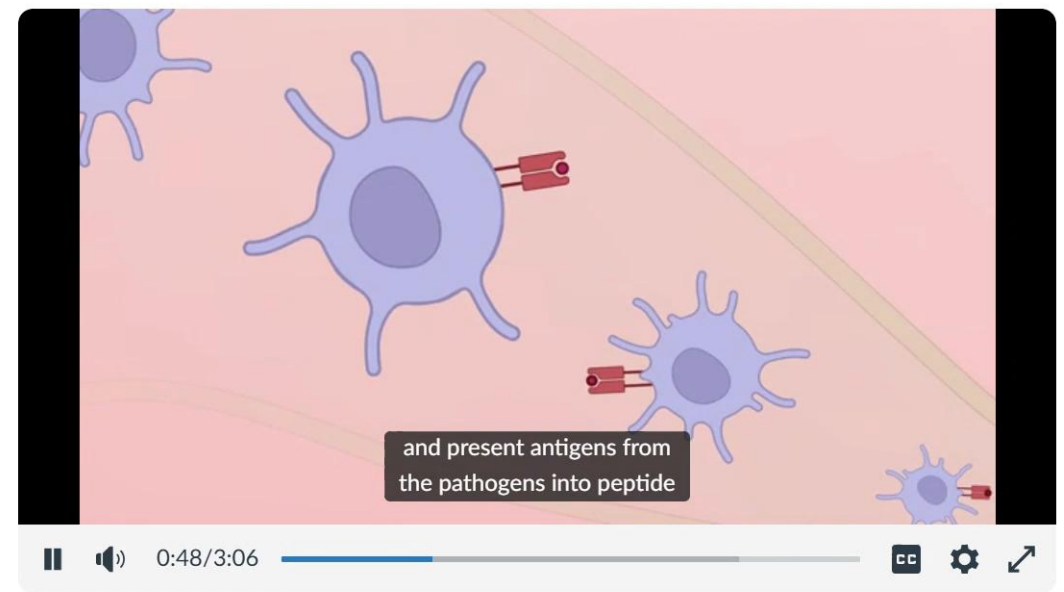
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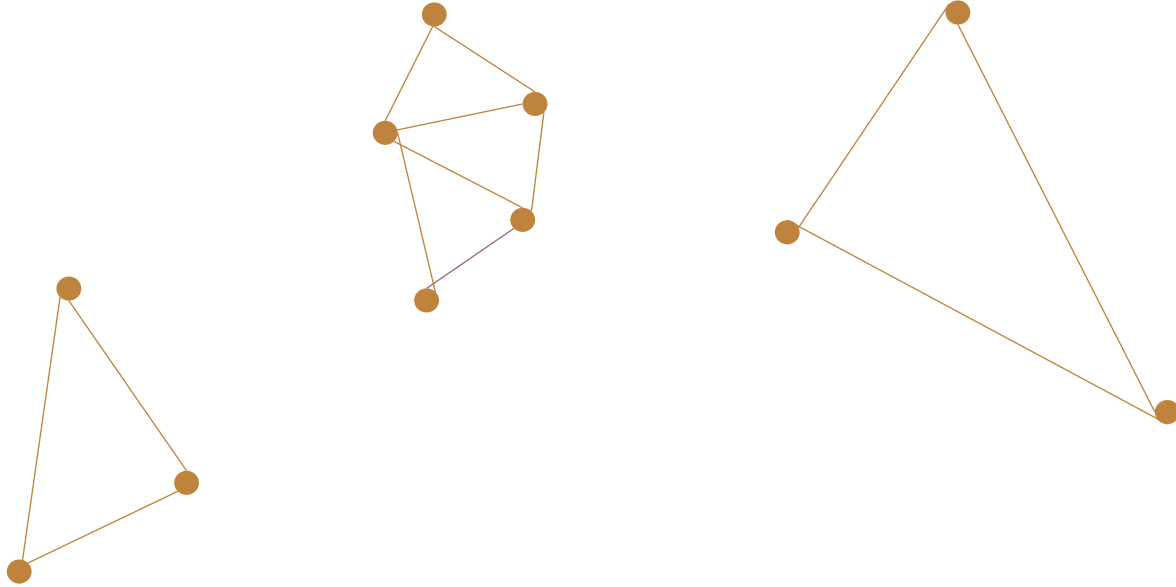
Created with BioRender.com



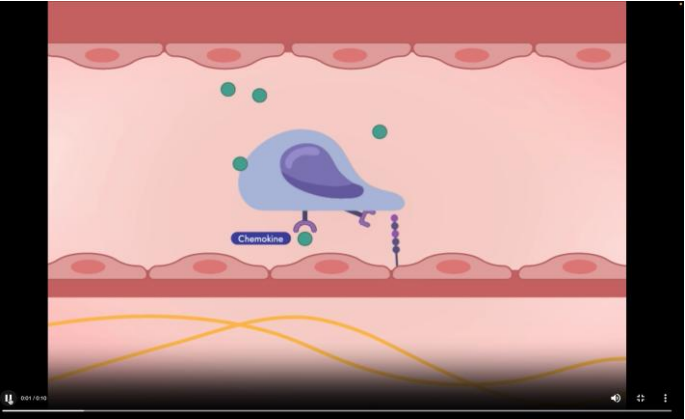


Presentation



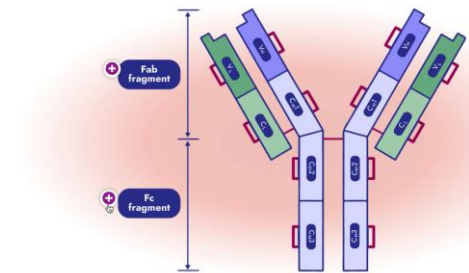


Deep exploration

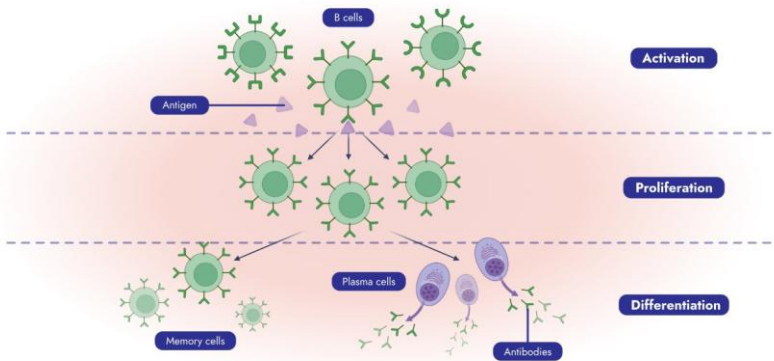


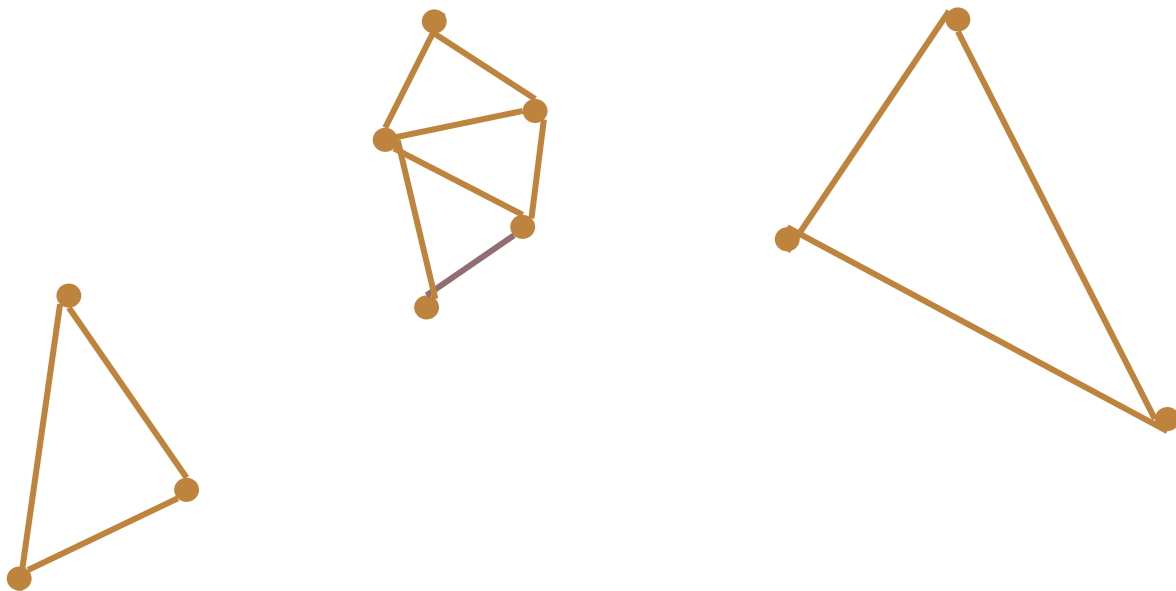
Structure of antibodies

Antibodies are Y-shaped molecules composed of four polypeptide chains: two identical heavy (H) chains and two identical light (L) chains, linked together by disulphide bonds. The structure of an antibody can be divided into two main parts:

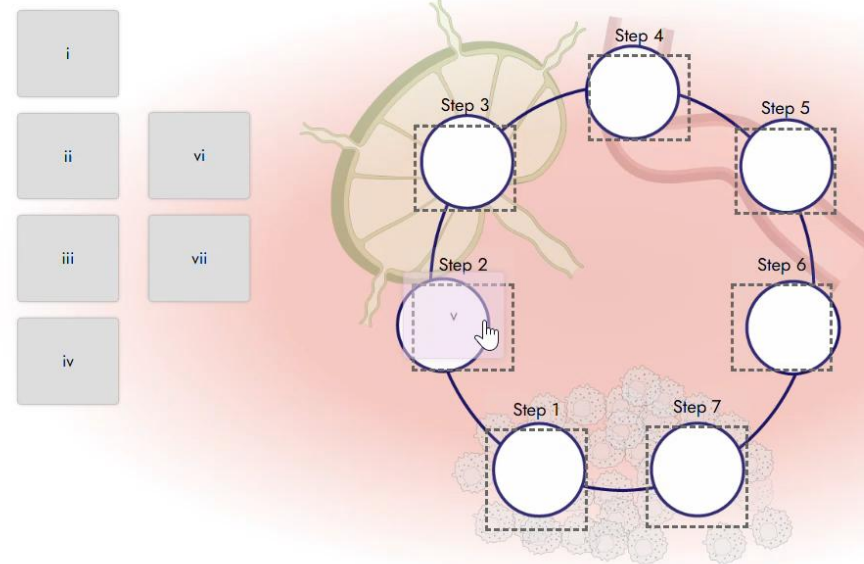


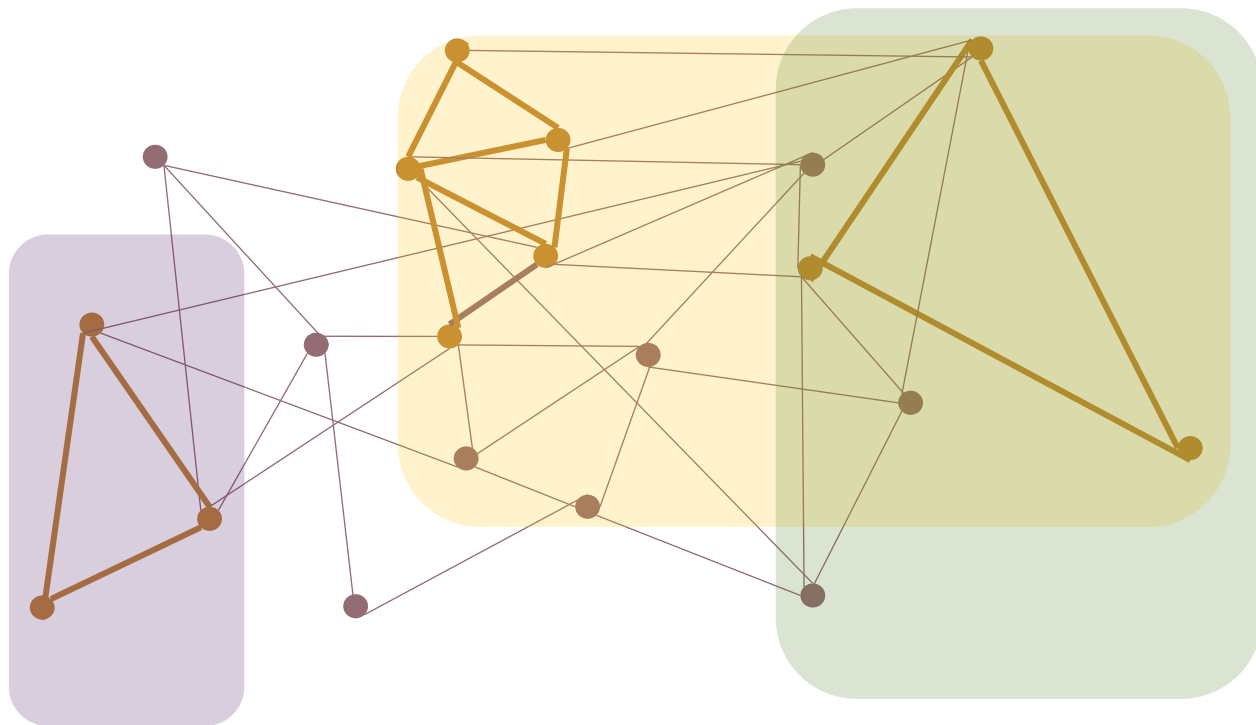
Antibody chains. Reproduced from Wikimedia Commons (2007) [CC-BY-SA 3.0](#)





Towards fluency





The landscape of immunotherapies

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Developments in Cancer Immunotherapy
**Future directions
for immunotherapies**
Dr Miguel Gasper

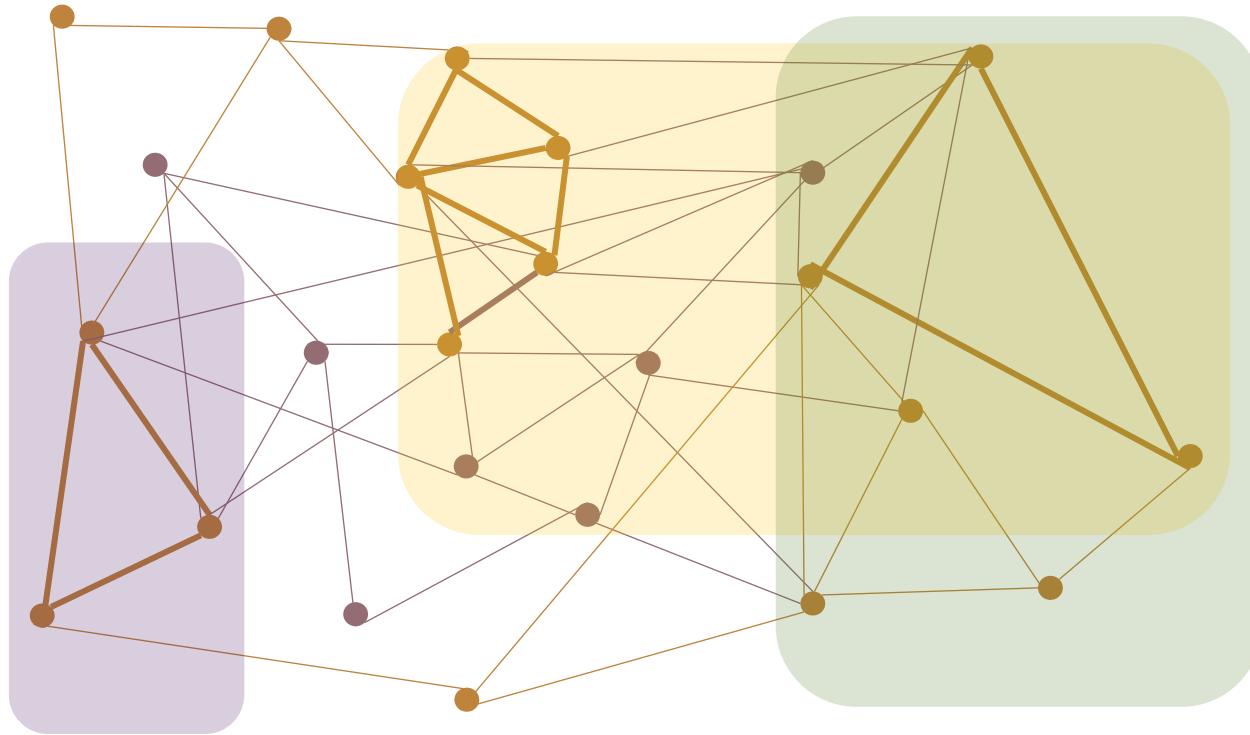
AO
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Welcome to module 4

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AO
(Intro music)

0:04/1:16



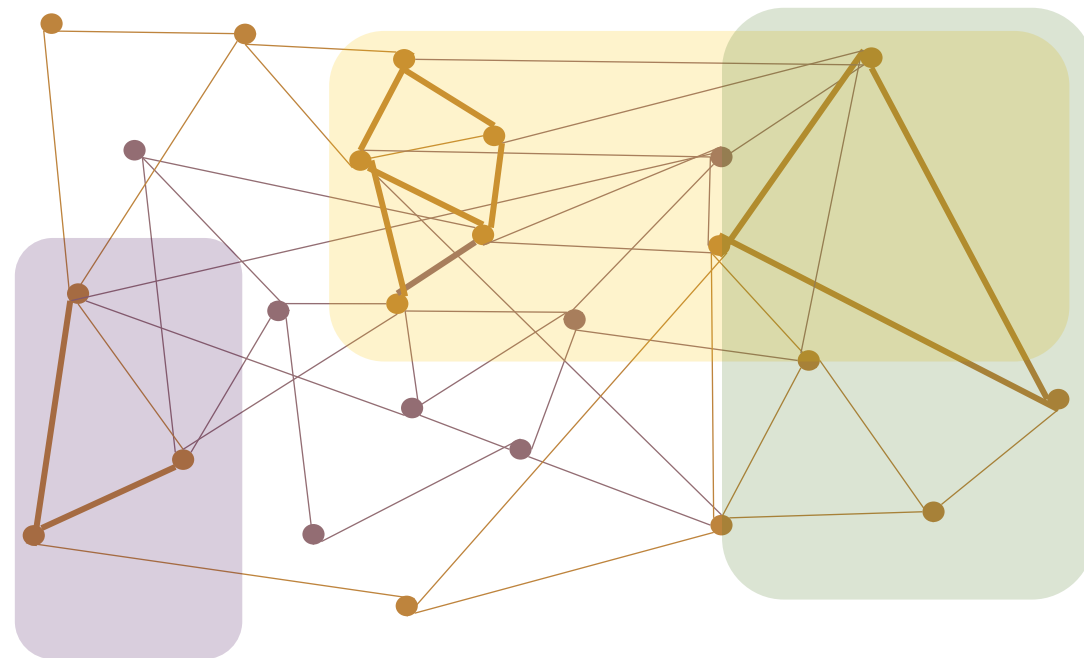
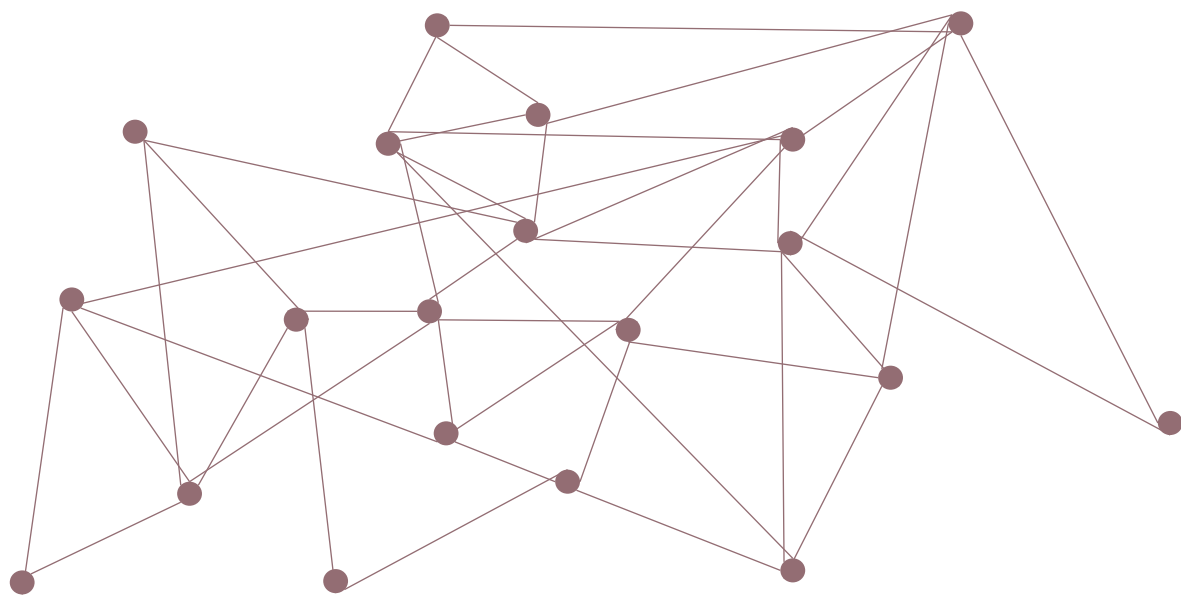
Towards discovery



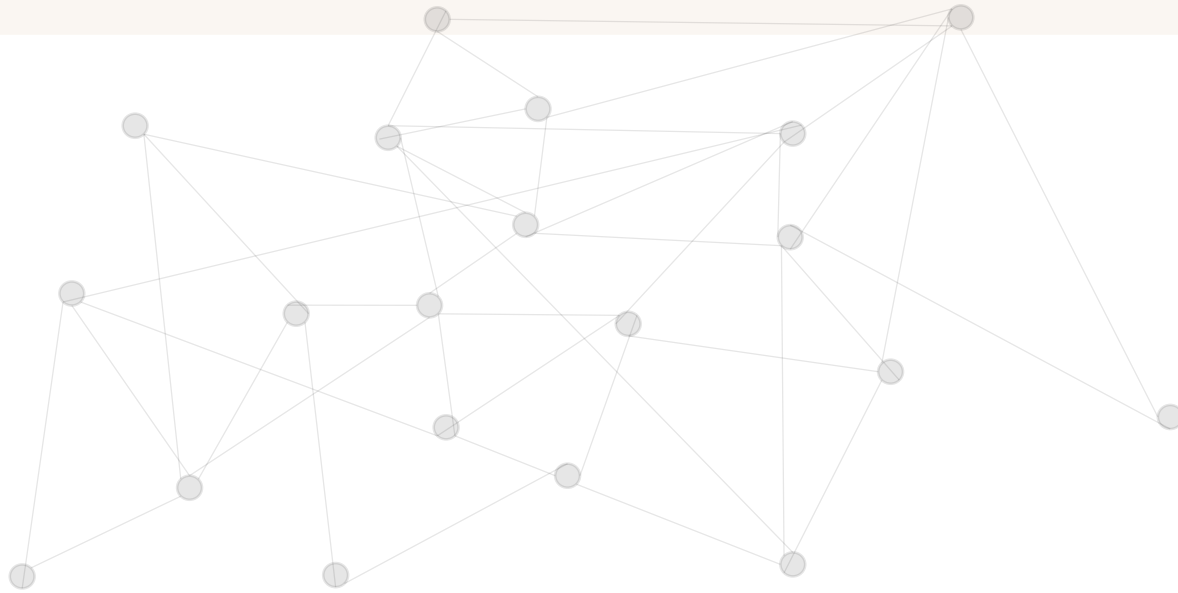
Proceed »

You have identified a co-stimulatory receptor (A) whose agonism powerfully enhances the function of CD8+ T cells. However, agonism of the receptor on Treg cells activates their suppressive function, causing loss of therapeutic efficacy. Consider how you may design a bispecific antibody to overcome this issue.

You can use this simulation to test out your design.



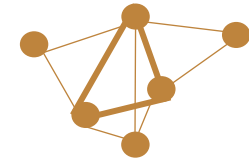
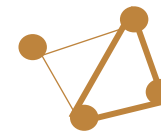
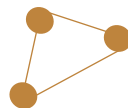
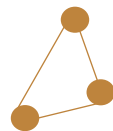
Foundations



Fluency



Pre-presentation → Presentation → Exploration → Comprehension → Application → Expansion



What learners say

85.71

Net Promoter Score

across surveyed learners

100%

rated content 'excellent'

of those surveyed

(On positive aspects of course) *“Progression of content. Starting from the baseline and advancing forward to clear, basic concepts.*

PhD candidate, course participant, October 2025

“This course strengthened the foundations of my practice by improving my understanding of how the immune system works and let me think more accurately and creatively about clinical problems I may face.

Haematology doctor, course participant, October 2025

“I found the final section on future immunotherapy developments particularly interesting, as this is an area where I could potentially contribute. This module allowed us to apply our knowledge to solve real-world challenges, making the experience very meaningful.

Cancer researcher, course participant, October 2024



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