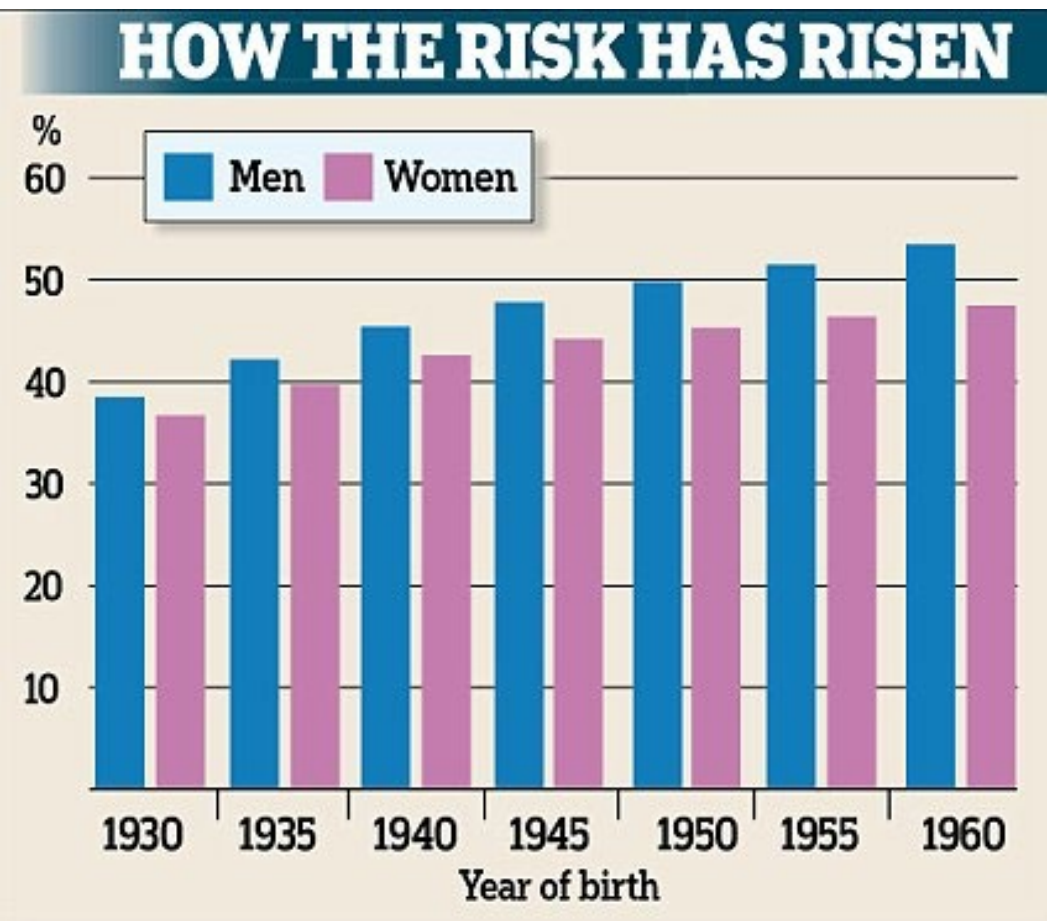
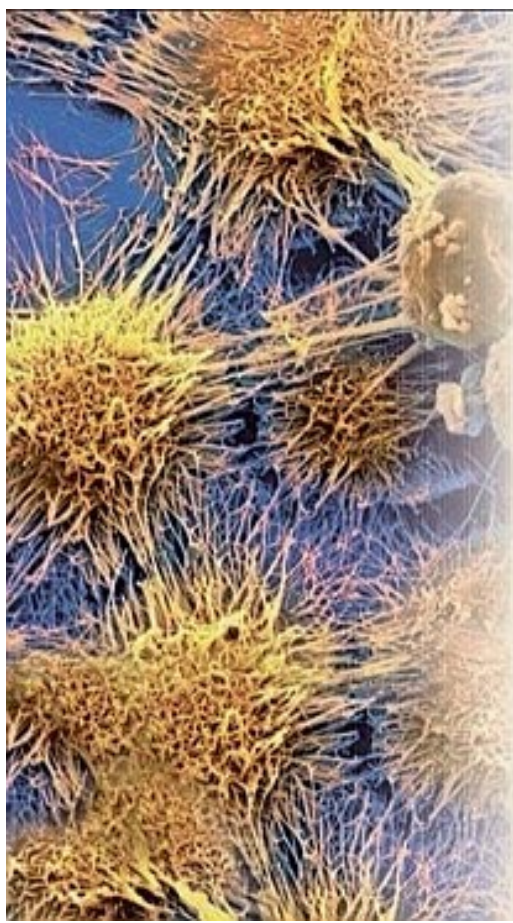




COGNACER



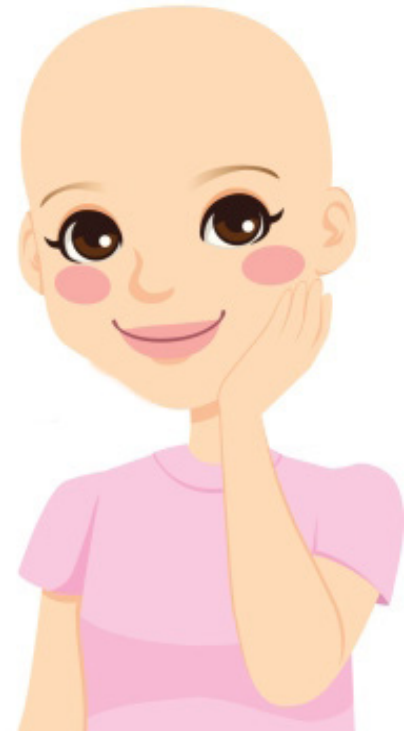
>50% will get it!



TREATMENT

Not changed for 50 years

- Surgery
- Kill all dividing cells



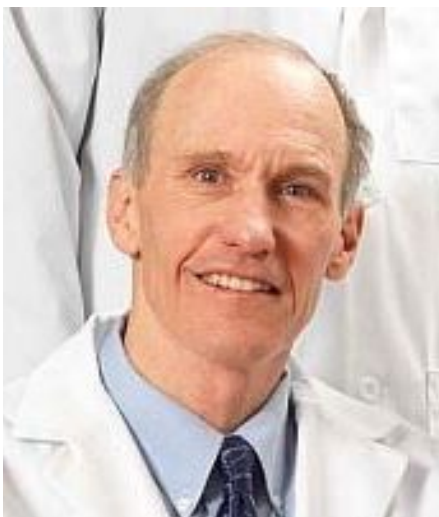
Something new is needed!

ATTACK CANCER 2009

ATTACK Cancer Meeting (Milan)

2009

2018

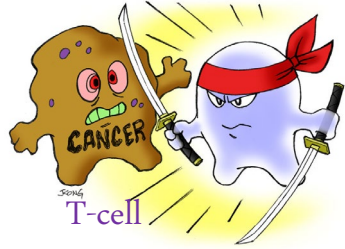


All the believers

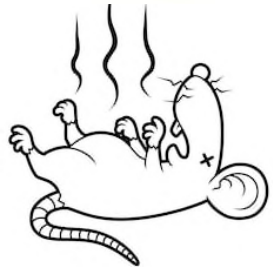
- Just 45 people



WHY BELIEVE?



- Killer T-cell kill cancer



- No killer T-cells = cancer



- HIV/Kaposi's sarcoma



- Spontaneous remissions

REMARKABLE TIMELINE !

ATTACK Cancer Meeting (Milan)

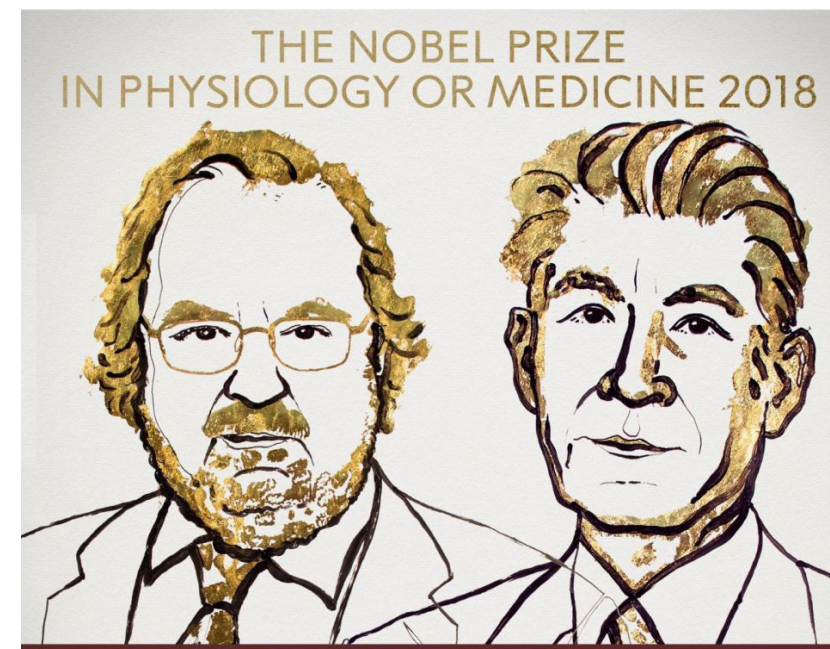
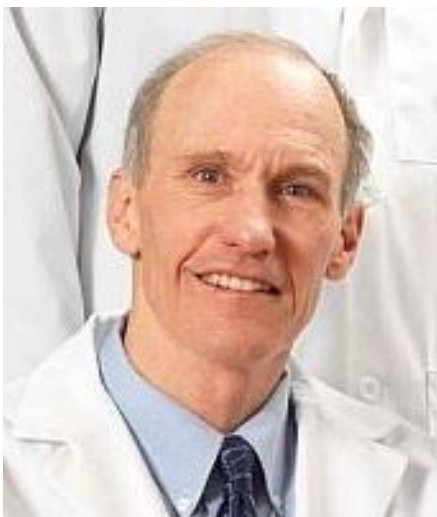
2009



2013



2018



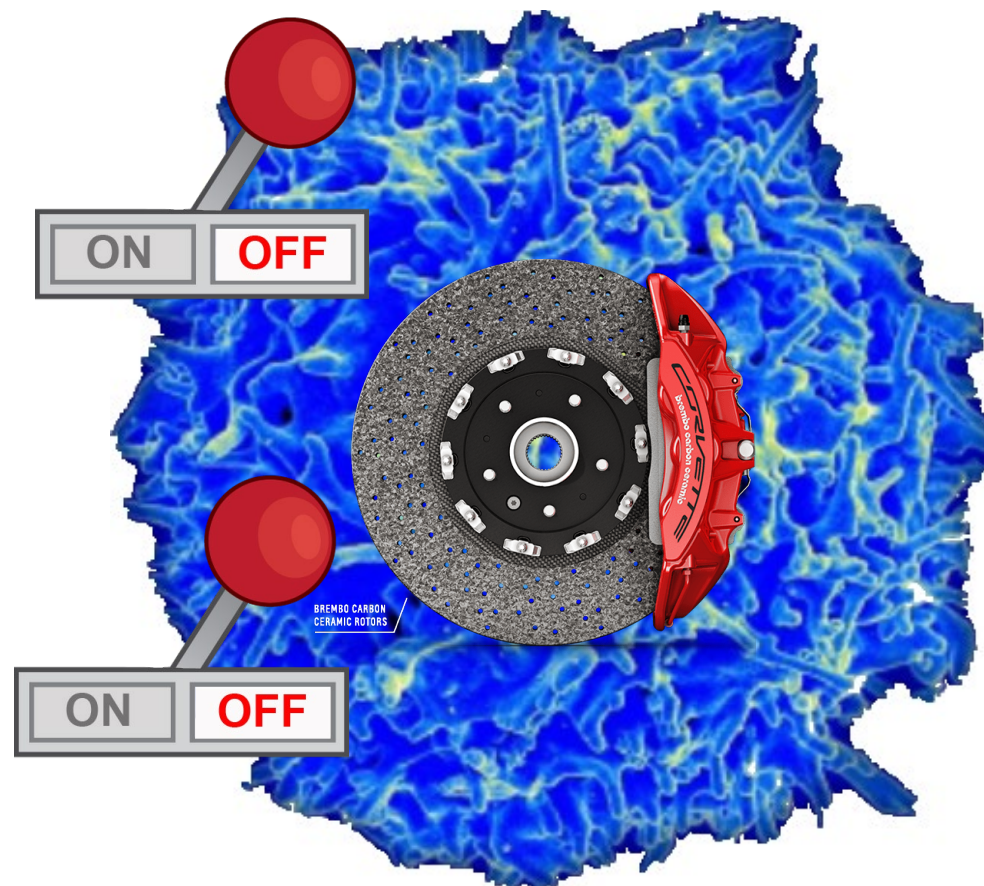
Allison

Honjo

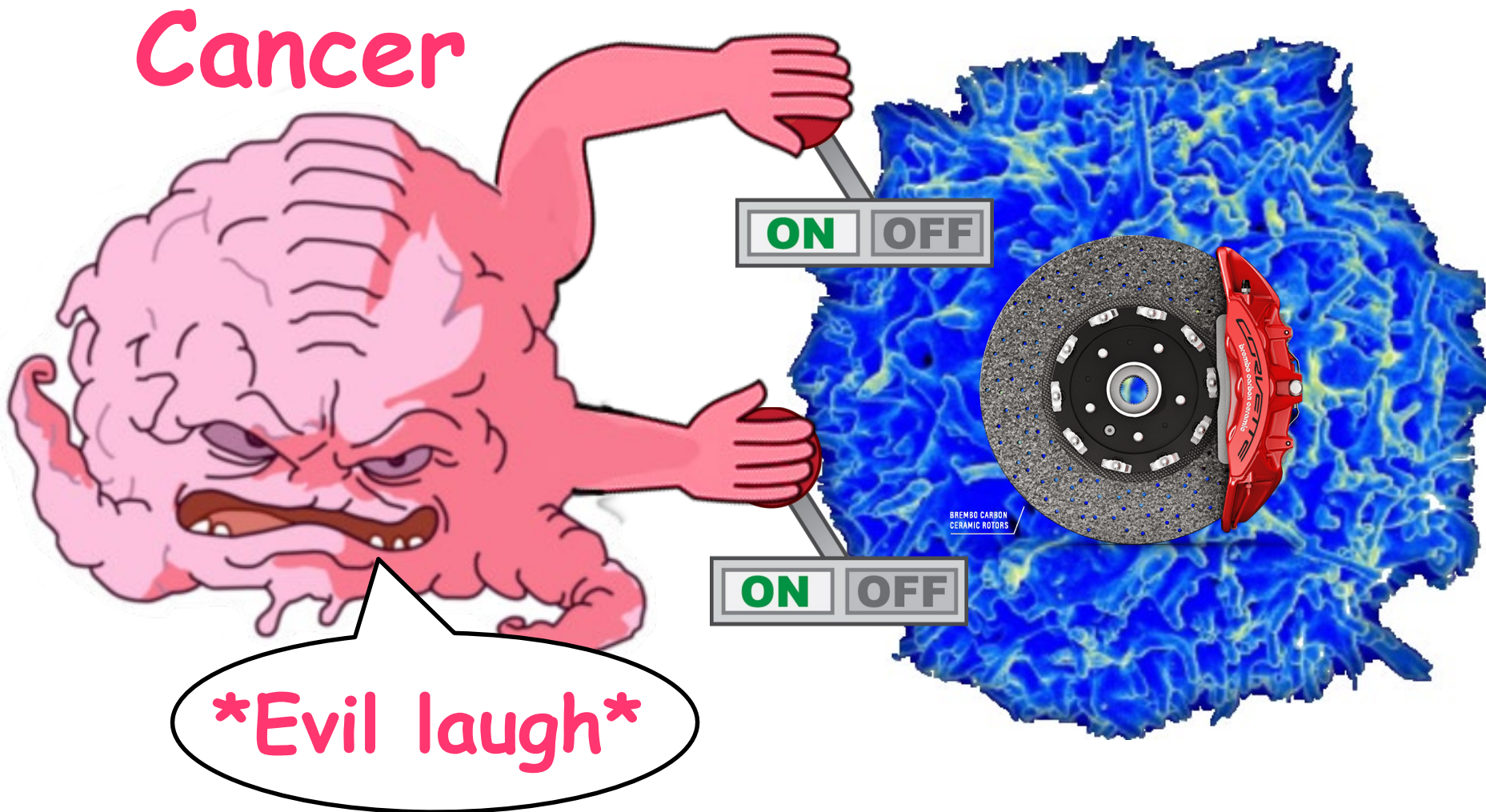
T-CELL CHECKPOINTS



T-cells have 'brakes' to turn them off and successful tumours exploit these brakes



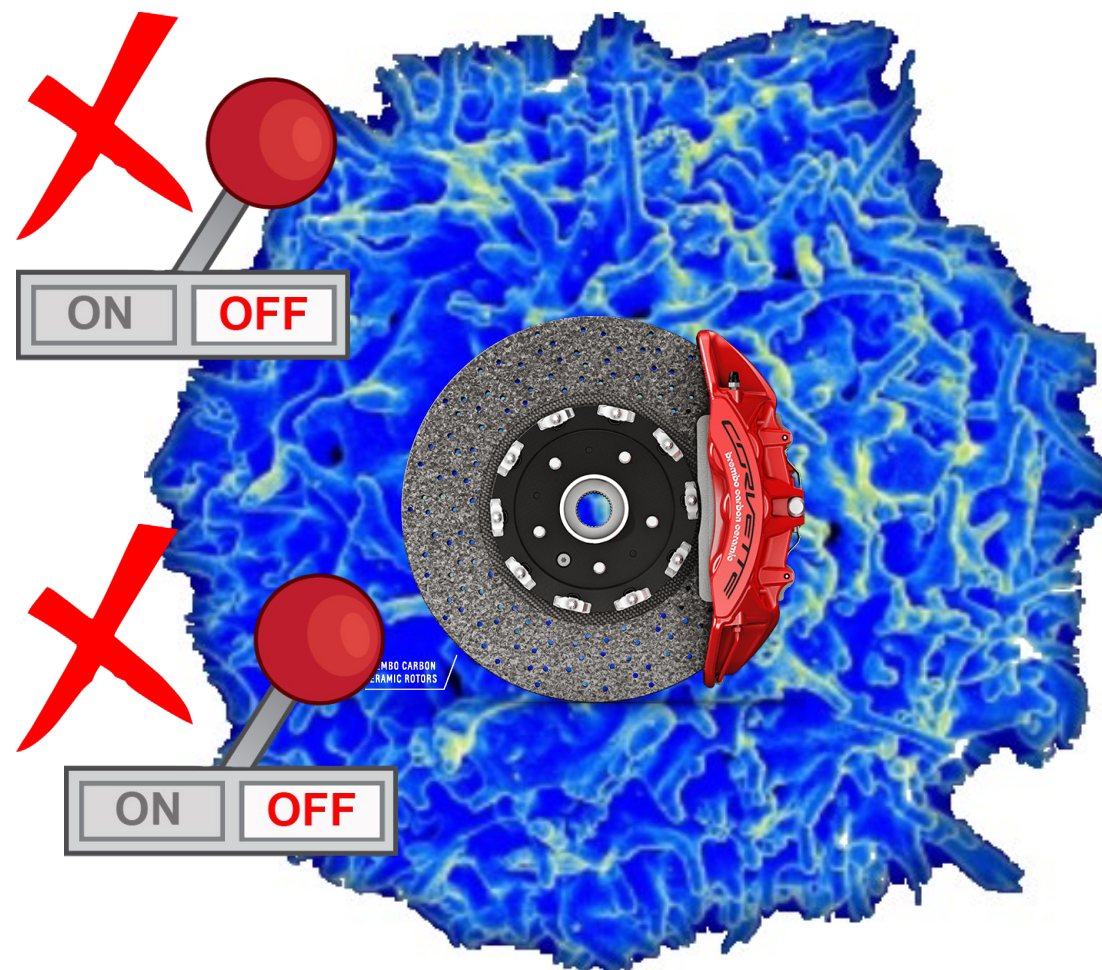
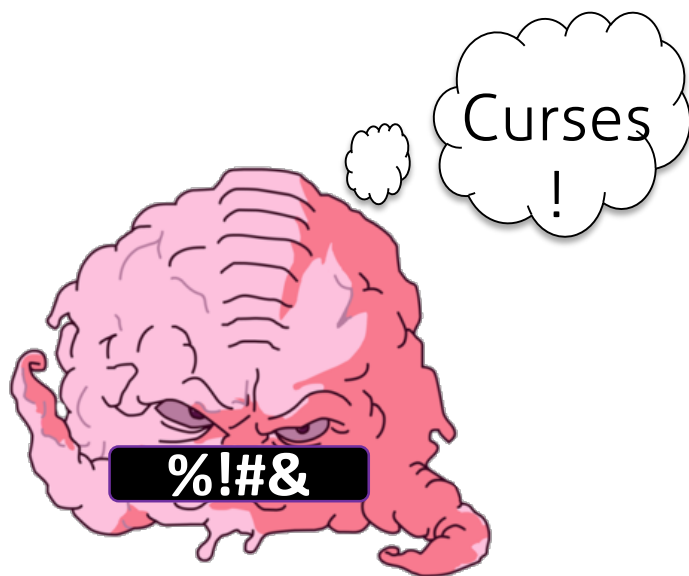
T-CELL CHECKPOINTS



Successful cancers apply the T-cell brakes

CHECKPOINTS INHIBITION

Checkpoint *inhibitors* are drugs that block the brake switches and prevent them from coming on



CHECKPOINTS INHIBITION



The NEW ENGLAND
JOURNAL of MEDICINE

N Engl J Med. 2015 Jul 2;373(1):23-34

N Engl J Med. 2015 Nov 5;373(19):1803-13

N Engl J Med. 2017 Oct 5;377(14):1345-1356

N Engl J Med. 2017 Nov 9;377(19):1824-1835

N Engl J Med. 2018 Apr 12;378(15):1408-1418

N Engl J Med. 2018 Apr 5;378(14):1277-1290

CHECKPOINTS INHIBITION



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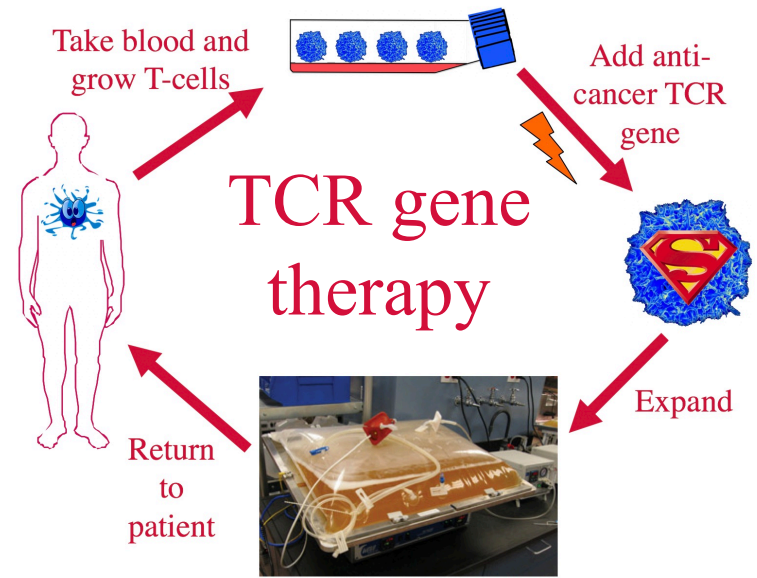
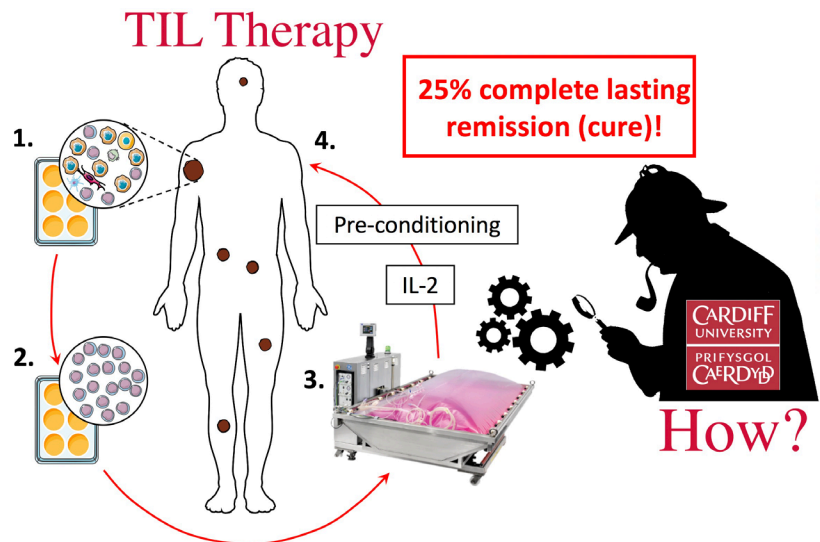


**Swansea
University**

**Prifysgol
Abertawe**

John Wagstaff

FOUR NEW APPROACHES



CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Adaptimmune
TRANSFORMING T CELL THERAPY

nature
medicine

2009

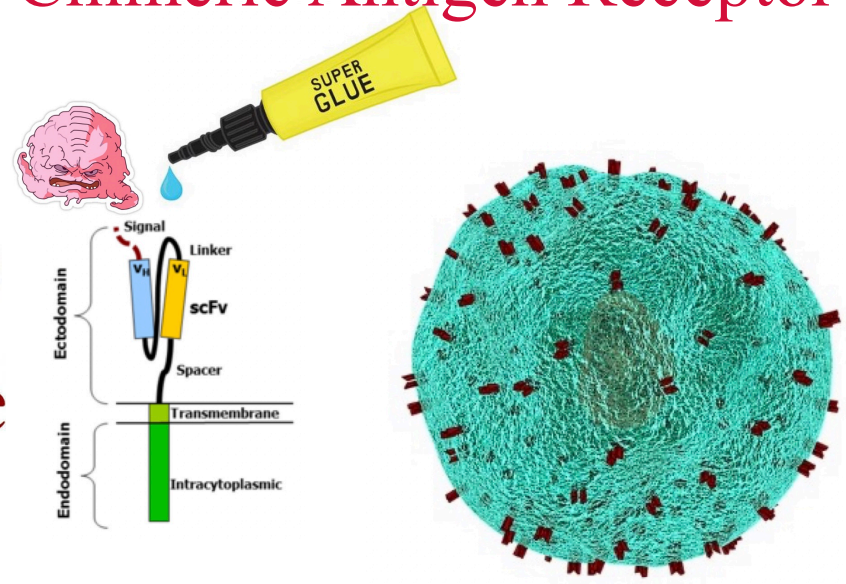
CAR: Chimeric Antigen Receptor

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

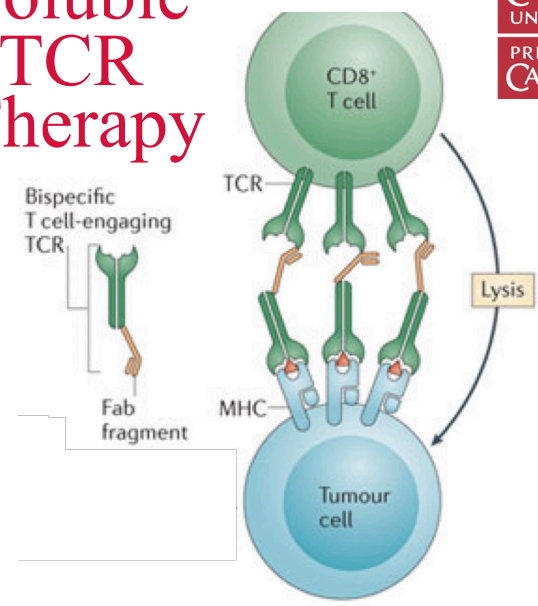
Autolus

nature
medicine

2017



Soluble TCR Therapy



CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

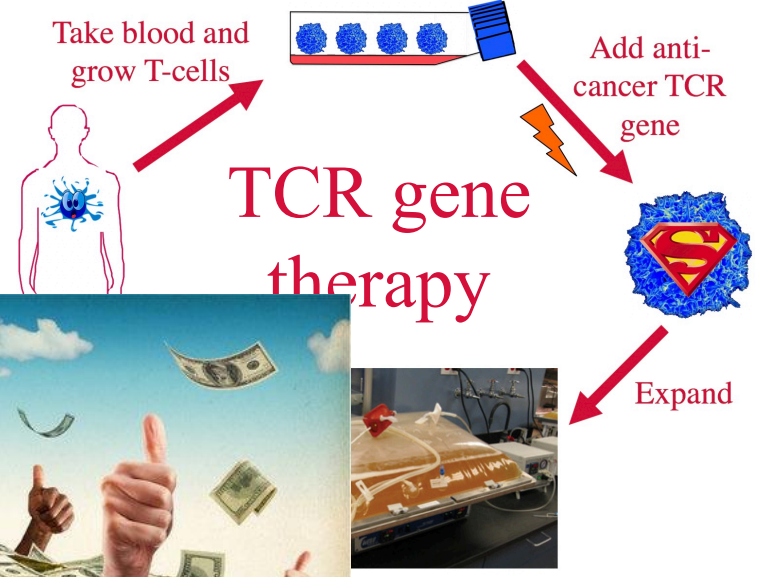
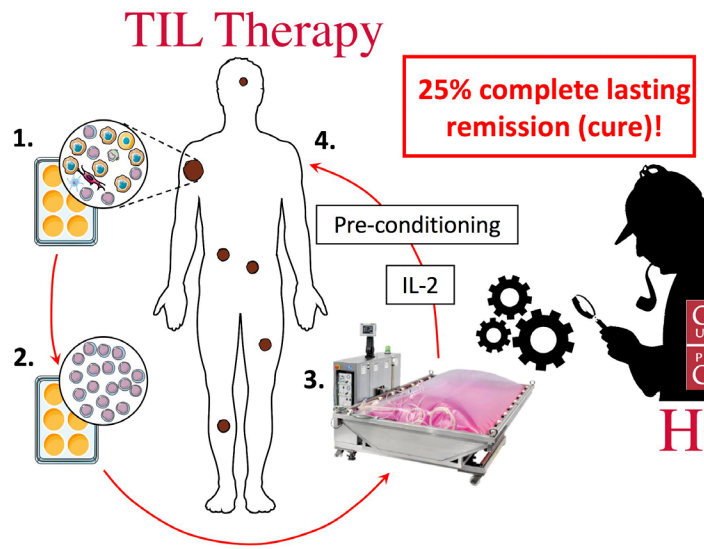
IMMUNOCORE
targeting T cell receptors

Nat Liddy Katy Adams

nature
medicine

2012

FOUR NEW APPROACHES

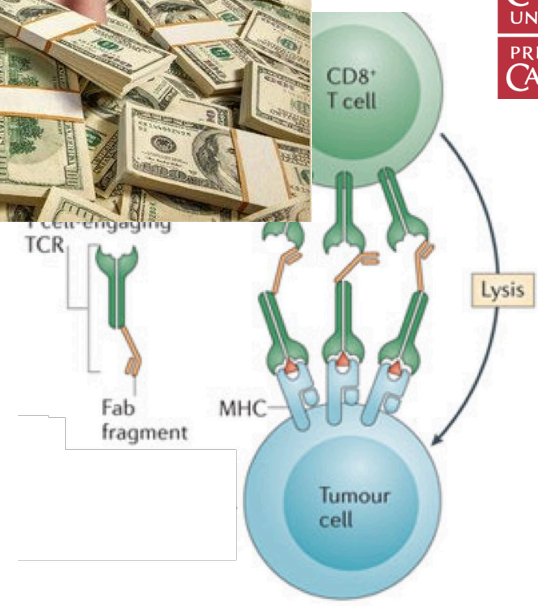
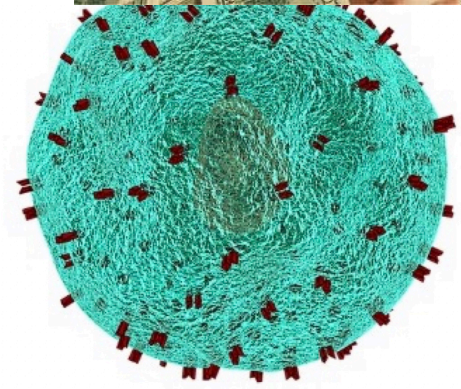
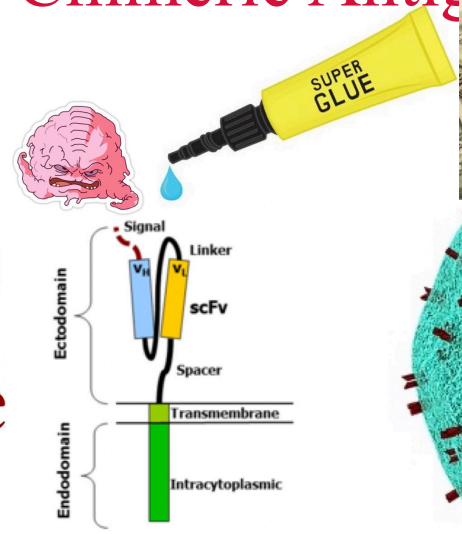


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PRIFYSGOL CAERDYDD

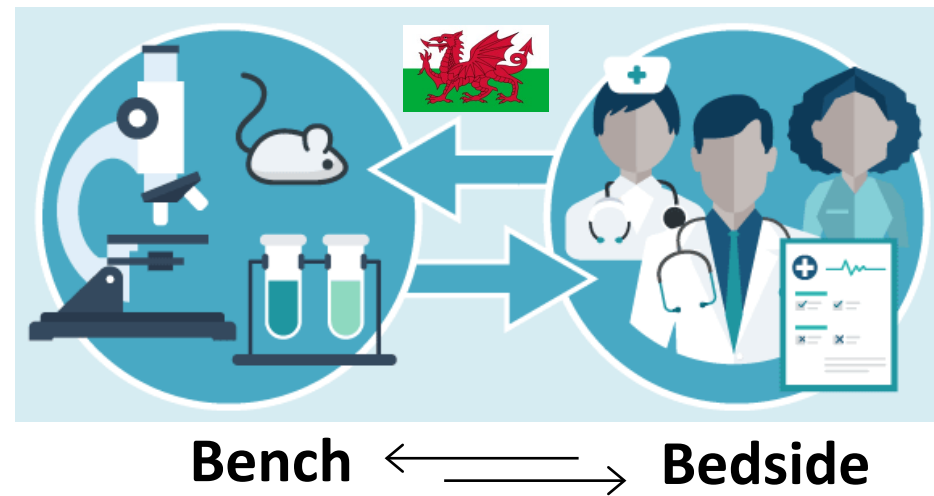
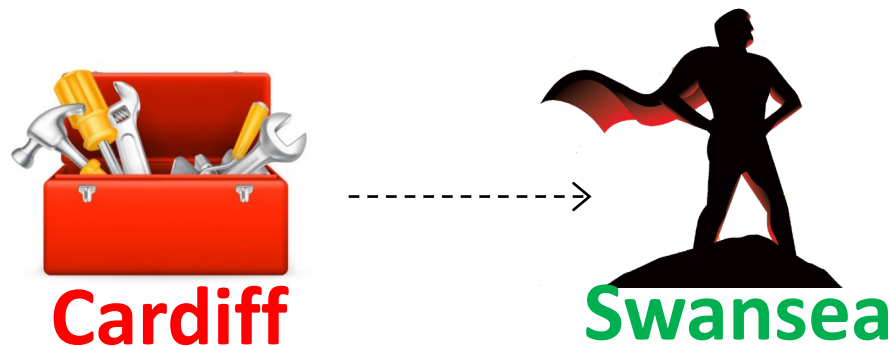
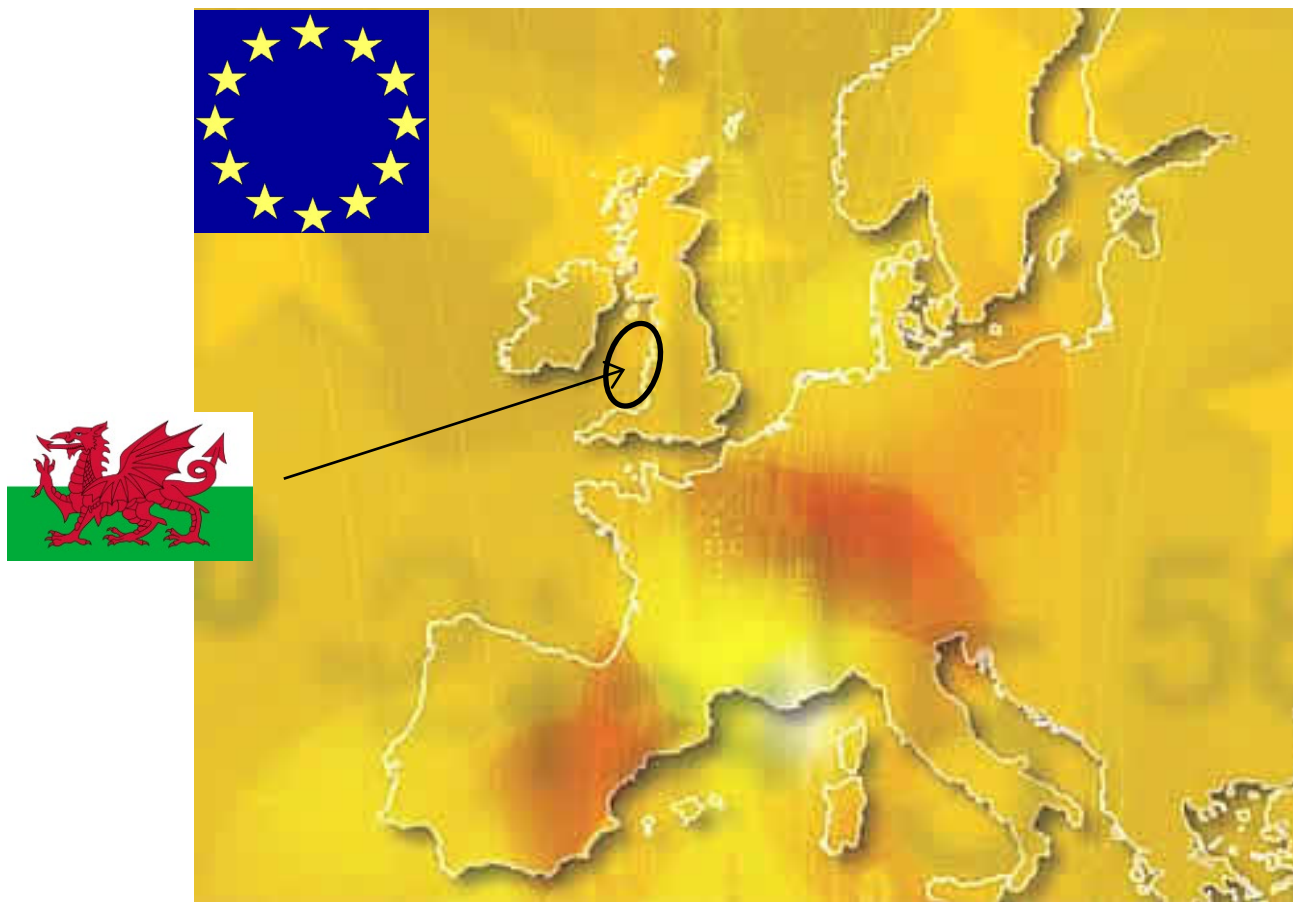
Autolus

nature
medicine

2017



WE WILL WIN THE WAR ON CANCER!



>90% CURE IN 15 YEARS!