

IIT OR NOT IIT – A QUESTION FOR THE SINGAPORE BIOTECH ENTERPRISE

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2000 – THE OXBURGH REPORT AND INTERNATIONAL ADVISORY PANEL

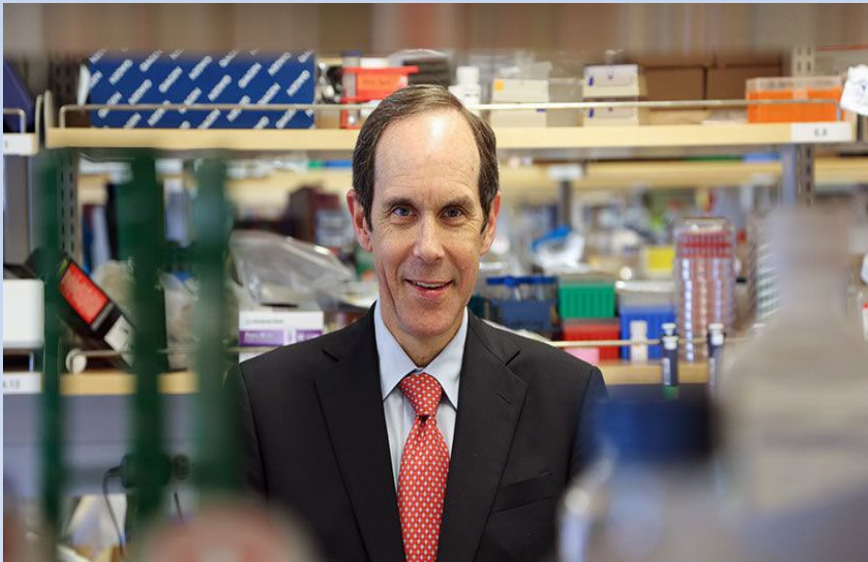
“Clearly staffing levels (in public hospitals) are very low by international standards and clinical loads are correspondingly very high.”

“it is clear that at present Singaporean bio-industry is severely hampered by a lack of doctors trained in research. Without such people, Singapore stands no chance of becoming the bio-medical hub for the region.”

“the time-scale for establishing a research base to support bio-industry in Singapore is much tighter and urgent action is required if Singapore is to grasp the commercial opportunities of biomedicine and derive full advantage from Biopolis.”

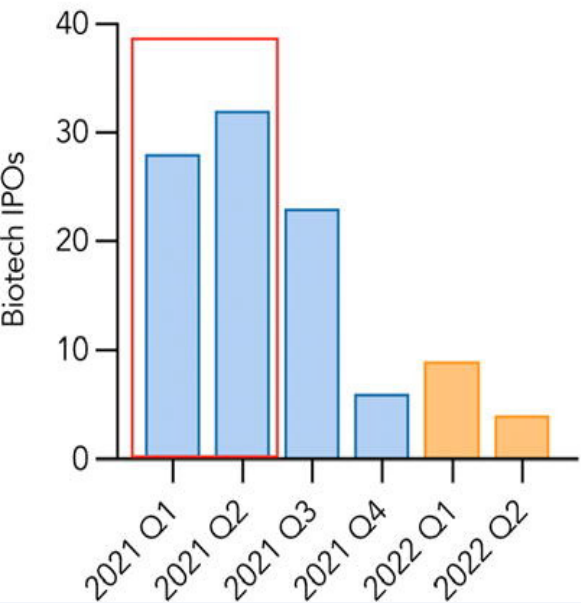
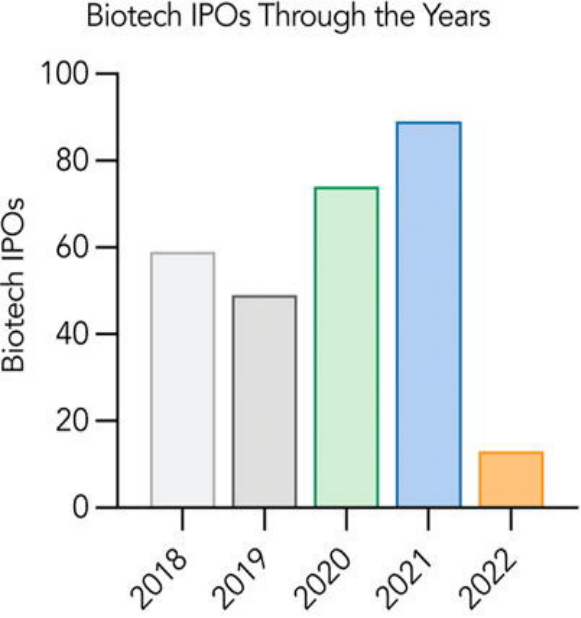
“a number of valuable initiatives are placed to support the bio-industry in Singapore but these will not succeed without a profound cultural change in Singapore medicine, especially the recognition of the role of physician-scientist

Early 2000s and Today – the Birth of Targeted Therapy to the Power of Immunotherapy



THE PANDEMIC CHANGED THE WAY WE LOOK AT THE BIOMEDICAL ECOSYSTEM





CEO
Background

Founders
Background

Therapeutic
Modalities &
Indications

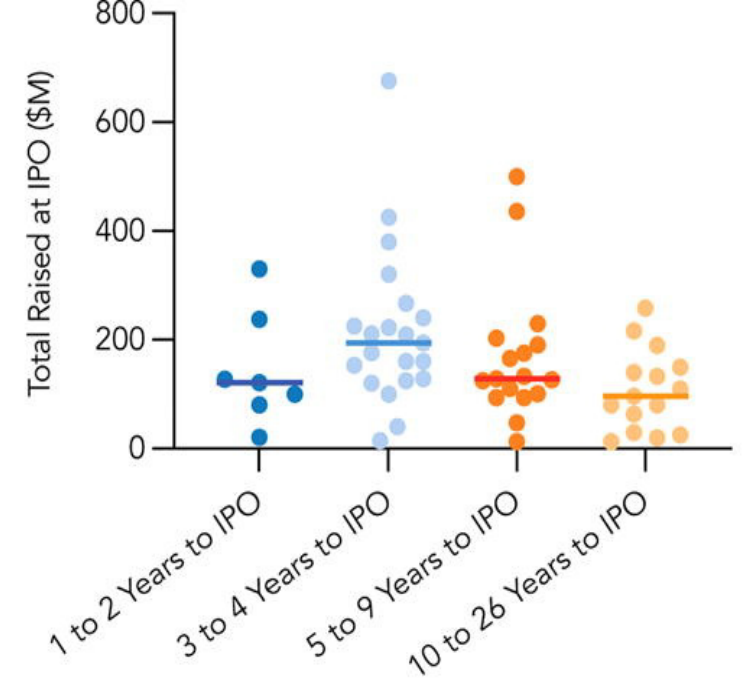
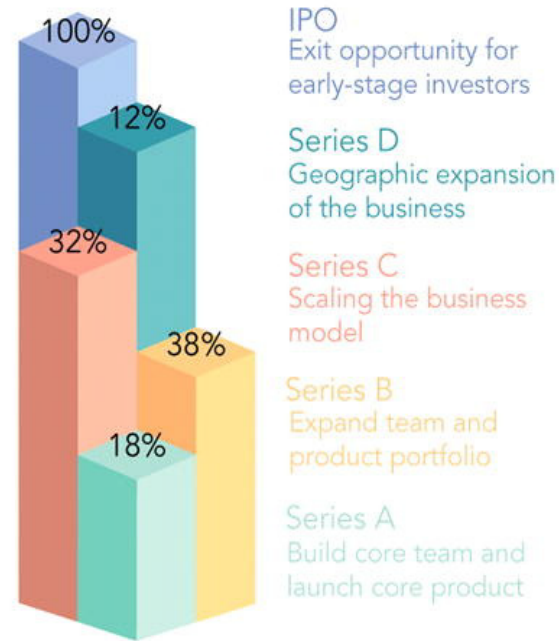
Clinical
Validation

Intellectual
Property

Biotech
Venture
Capital

Pre-IPO
Entrepreneurial
Finances

Post-IPO
Stock
Performance



Lab Studies

Human Safety

Expanded Safety

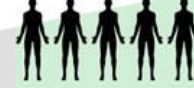
Efficacy and Safety



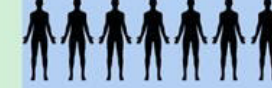
Preclinical



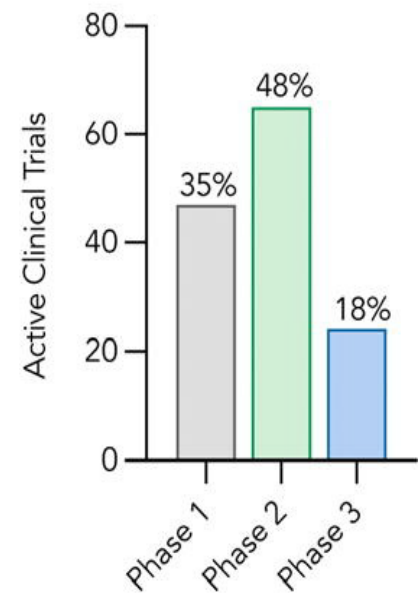
Phase 1



Phase 2



Phase 3



DOCTORS AND MILITARY PERSONNEL / CEOs LIKE ACRONYMS



NMRC

CSA

CTG

IIT

IRB

HSA

FDA

EMA

TGA

CFDA



T CELLS AS LIVING THERAPY

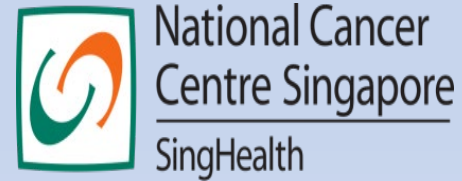


2017 : ARRIVAL OF CAR T CELL THERAPY – A REMARKABLE BREAKTHROUGH

A LANDMARK IIT



DEVELOPMENT OF EBV VIRUS-SPECIFIC T CELLS AGAINST SOLID TUMOUR – NASOPHARYNGEAL CANCER



1990s

2002-2007

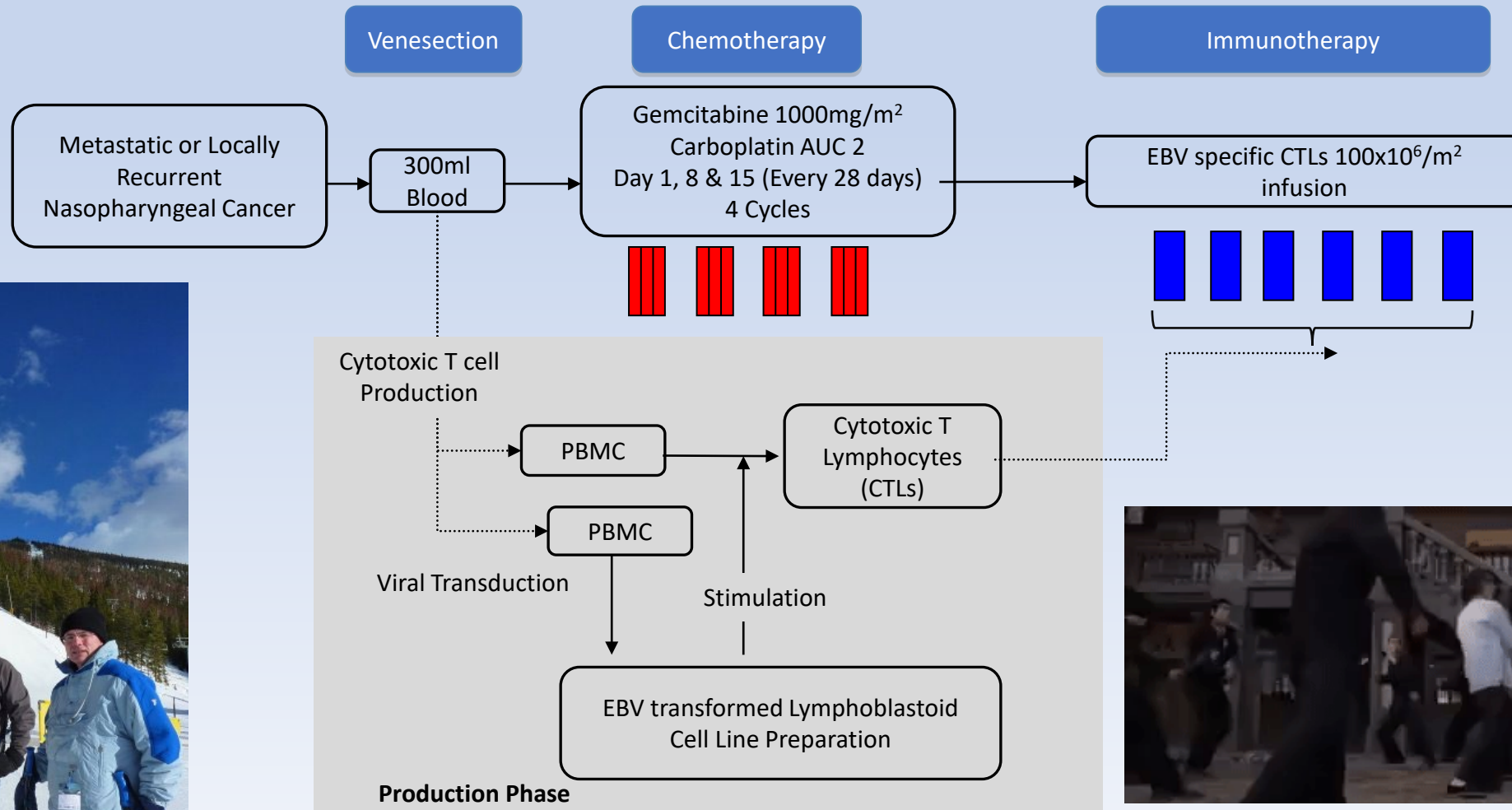
2008-2011

2012-2014

- Dr. Malcolm Brenner and his team at **Center for Cell and Gene Therapy (CAGT)** started studying body's natural anti-viral immune response to target cancer
- **Phase I** trials for patients with advanced Nasopharyngeal cancer (NPC) conducted at Baylor College of Medicine
- **Phase II** trial at NCCS demonstrated best 2-year survival data in patients with advanced NPC
- Tessa founded
- Commencement of **Tessa's Phase III** trial recruiting 330 patients across 30 hospitals in 5 countries



CELL THERAPY IIT : COMBINATION CHEMOTHERAPY & EBV CTL THERAPY IN ADVANCED NPC INVESTIGATOR-INITIATED TRIAL AT NCCS



TESSA THERAPEUTICS - STARTING OUT IN A YOUNG BIOTECH GOING STRAIGHT INTO A LANDMARK PHASE III TRIAL

THIS IS LIKE ADOPTING A 1000 POUND GORILLA INSTEAD OF REARING YOUNG PUPPIES WHICH WHAT MOST BIOTECHS DO

SINGAPORE WAS THEN YOUNG TO THERAPEUTIC BIOTECH

CELL THERAPY WAS NOT FAMILIAR IN MANY COUNTRIES ESPECIALLY SE ASIA BEFORE THE ARRIVAL OF CAR T CELL THERAPY

HUMAN CAPITAL IN CELL AND GENE THERAPY WAS THEN LIMITED



BIOPHARMA IND TRIALS CAN BE LIKE THE ENGLAND FOOTBALL TEAM





Only those who dare to fail greatly can ever
achieve greatly.

(Robert Kennedy)

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THANK
YOU

