

**B V C** Bristol Childrens Vaccine Centre

## Bacterial lipoprotein - effects of a TLR2(1/6) ligand on The importance of ICOS and systemic immune responses to pneumococcal protein antigens

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Liverpool 30<sup>th</sup> April 2009

**B V C** Different kinds of immunity to pneumococcus...

1. NP colonisation

2. Primary spread

3. Bacteremia

4. Secondary spread

Acquisition

Prevention of invasion

Clearance/duration. Prevention of e.g. otitis media

"Systemic" immunity

**B V C** Nasopharyngeal carriage

Adenoids

Bogaert et al (2004 June) Lancet 363:1871

**B V C**

PspA

CbpA

Capsule Polysaccharide

Cell Wall

Aur polysyn

LTA

TA

Pneumovysin

Membrane

Ply/Pdb

PsaA

**B V C** TLR agonists

Pattern recognition receptors - innate immunity

Toll like Receptors

TLR2 Bacterial lipopeptide BLP

**B V C** Cell culture

Stimulus: Pneumococcal culture supernatants

Cells: Adenoidal MNC

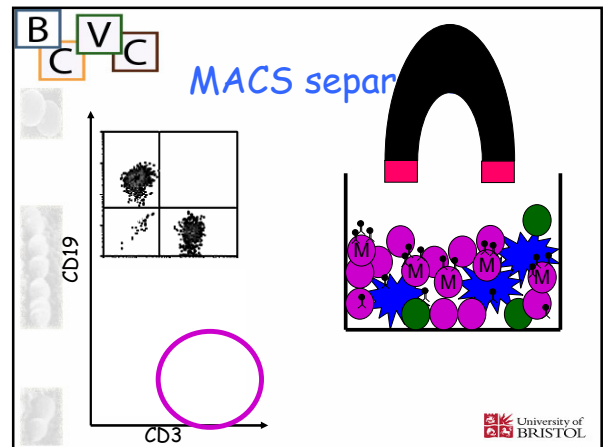
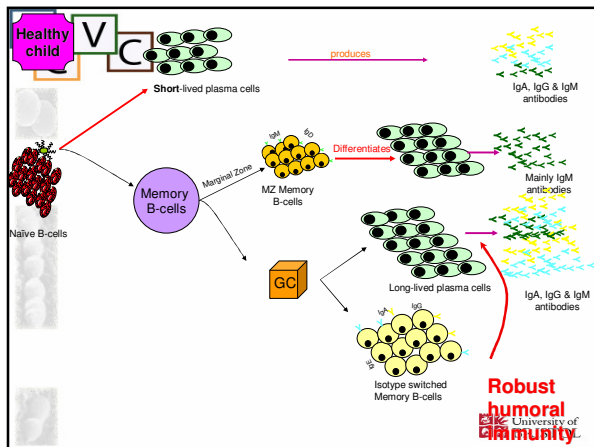
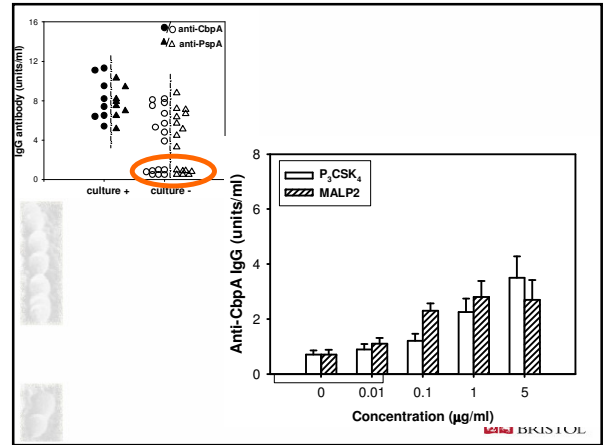
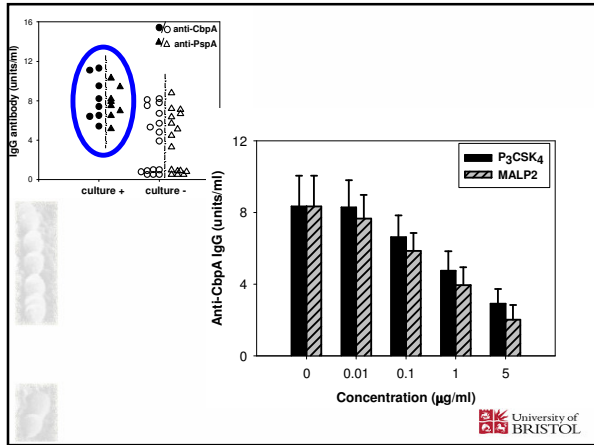
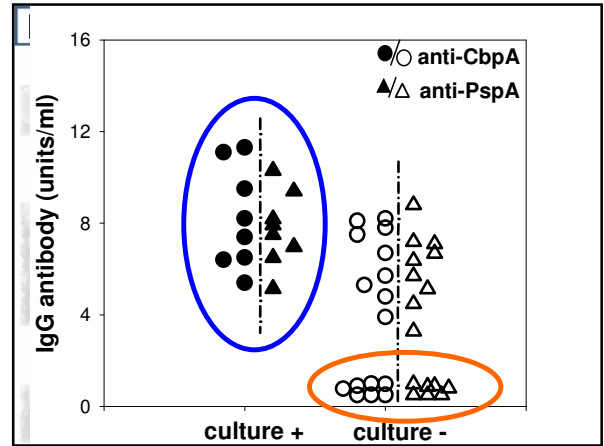
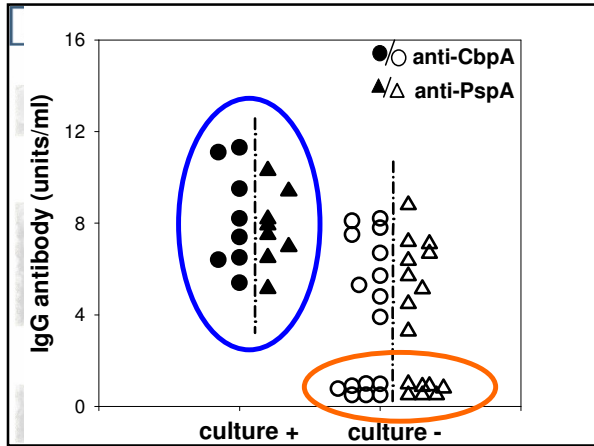
Response: B-cell responses: Anti-protein Abs by EIA

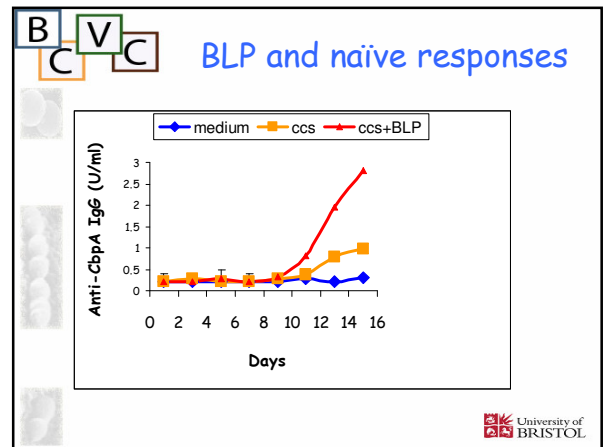
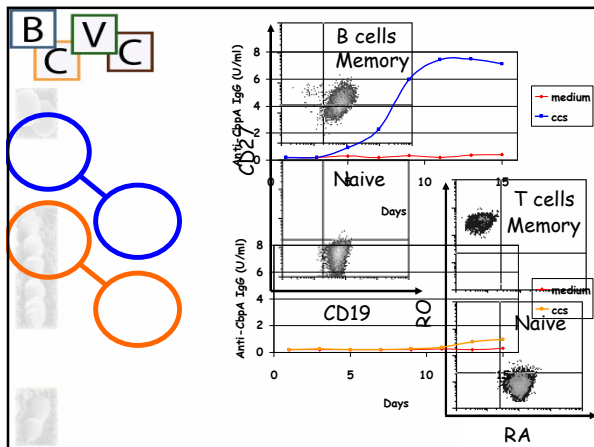
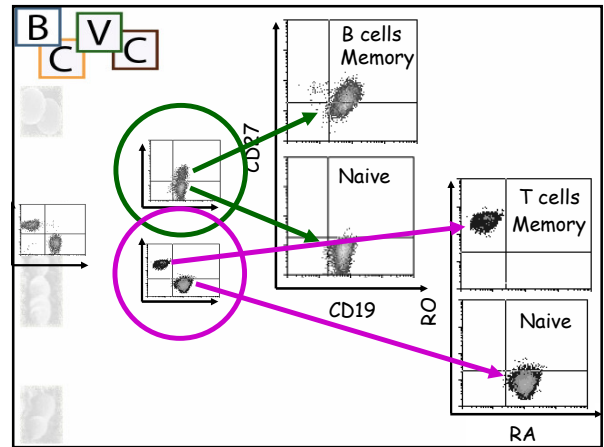
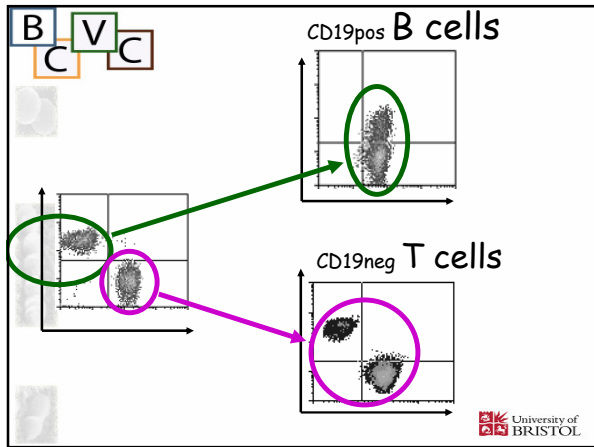
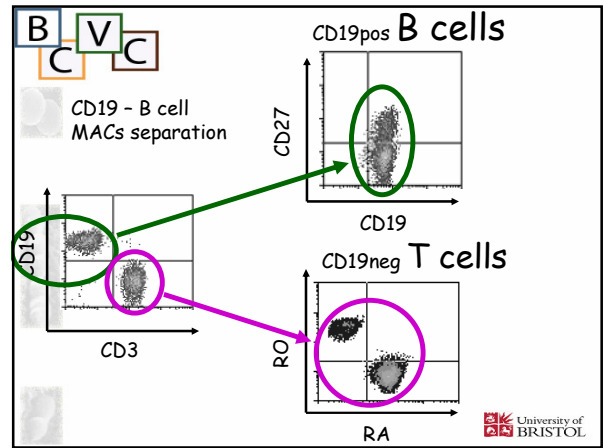
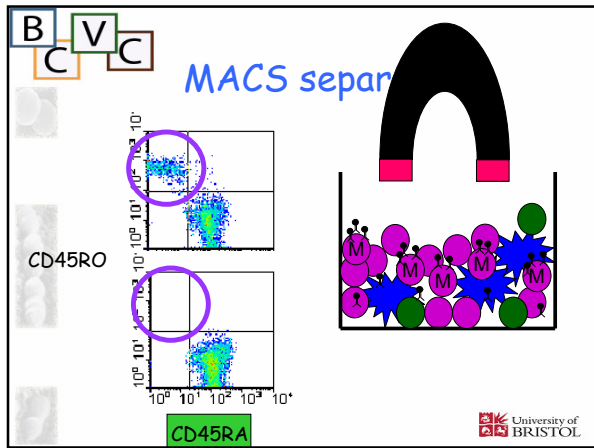
Adherent cell (APC)

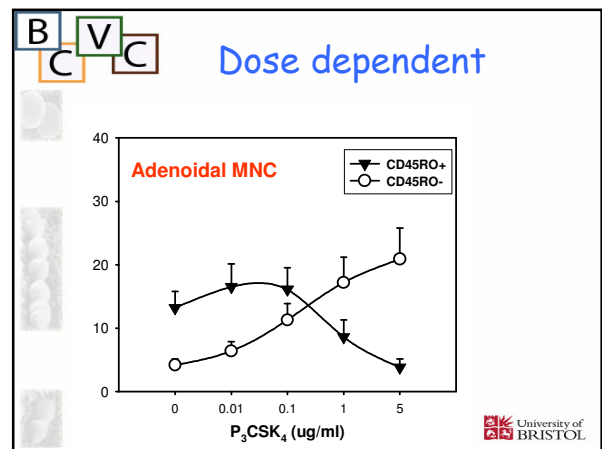
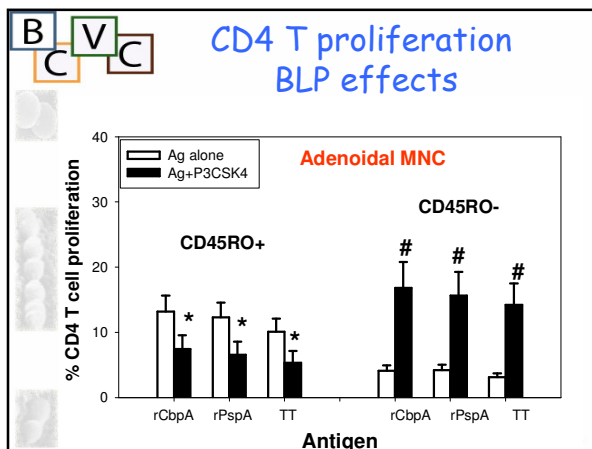
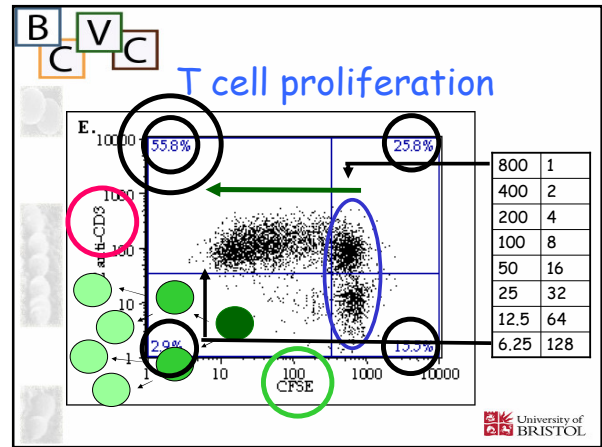
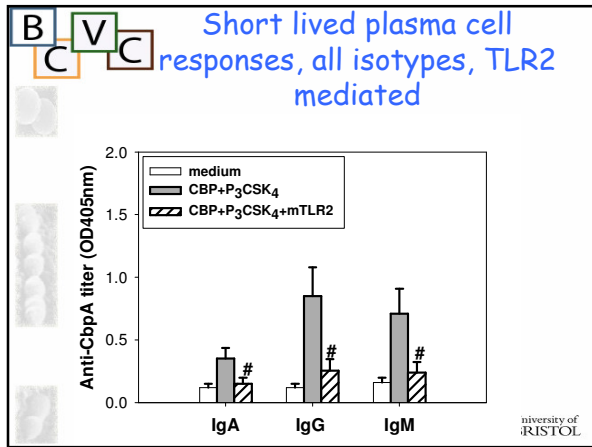
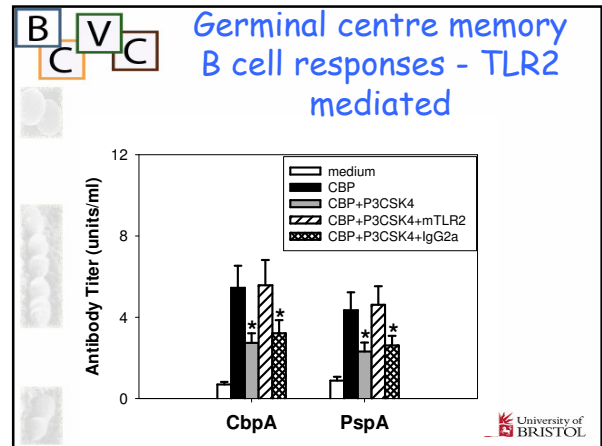
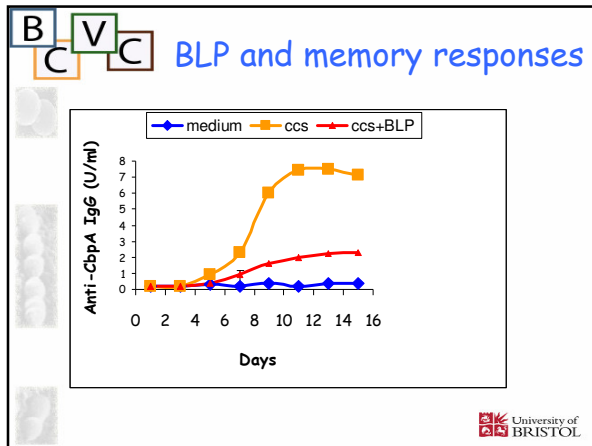
T-lymphocytes

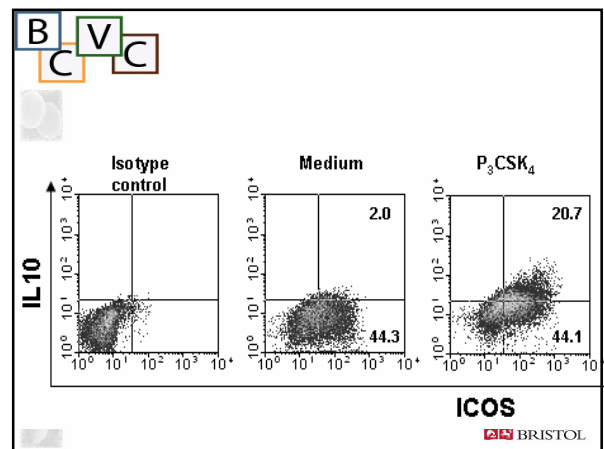
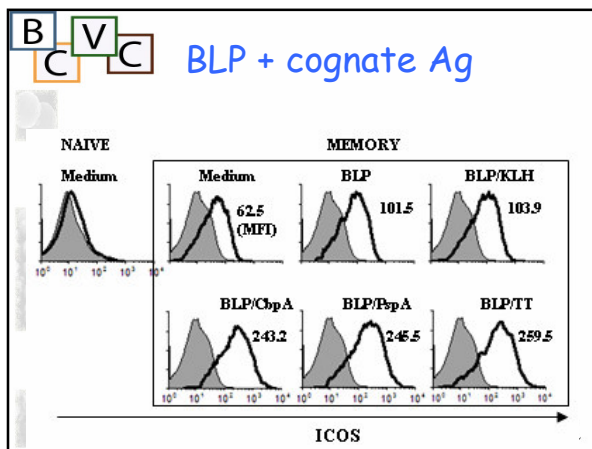
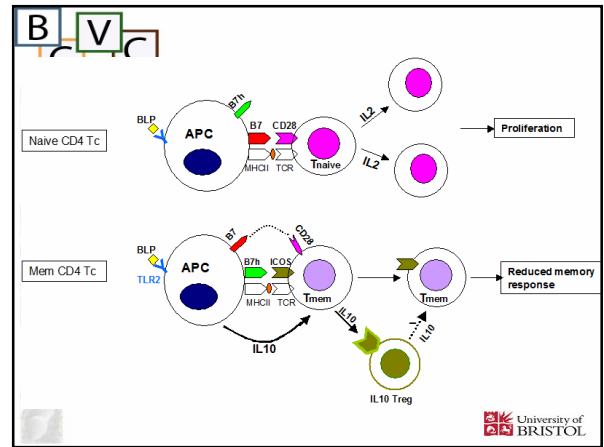
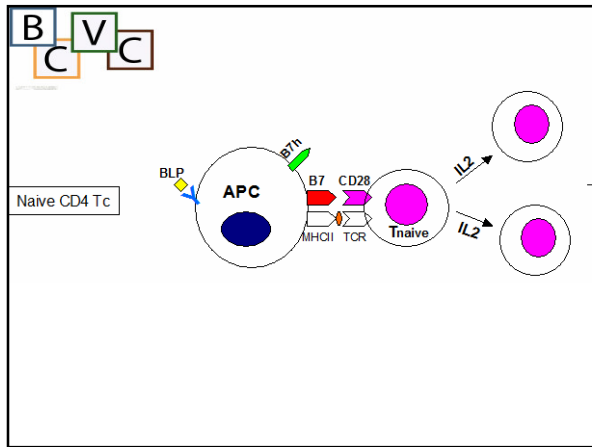
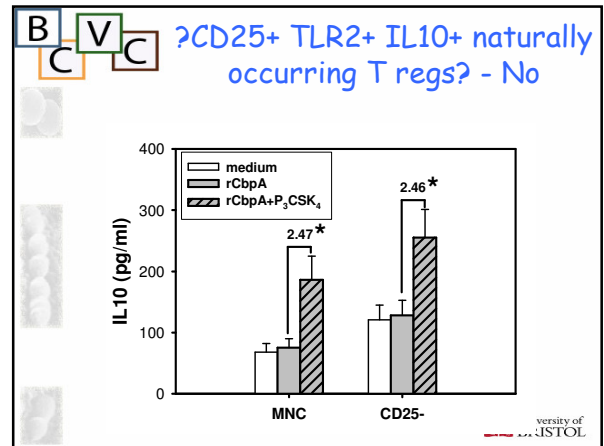
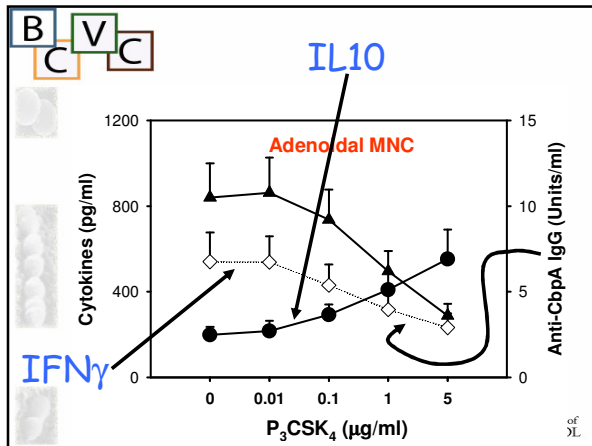
B-lymphocytes

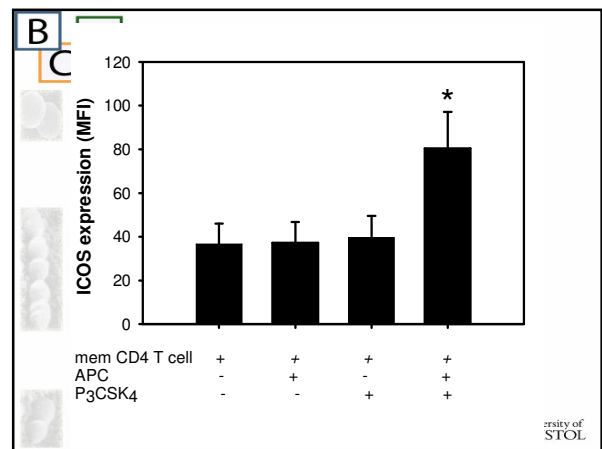
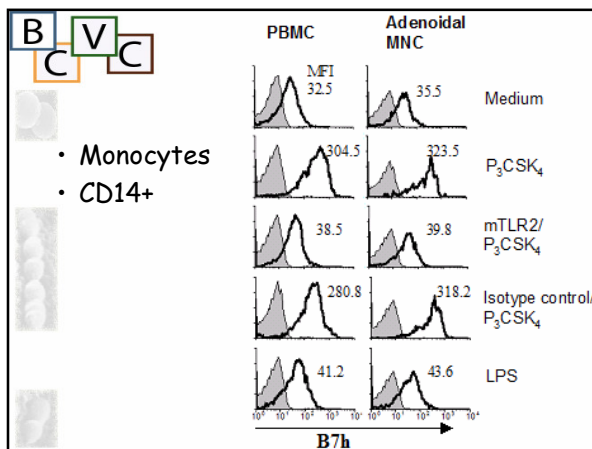
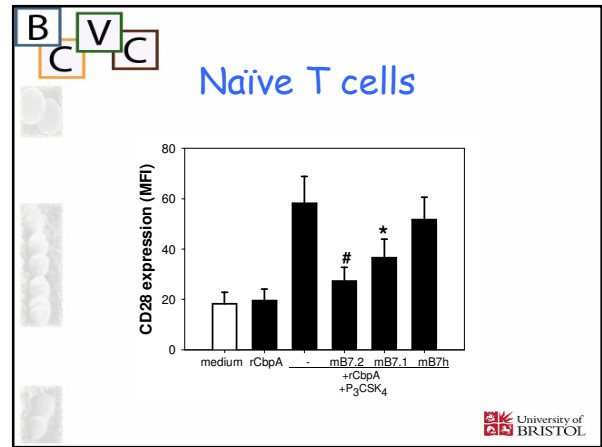
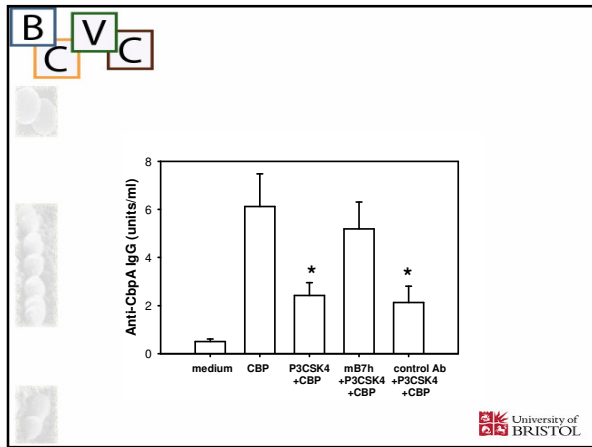
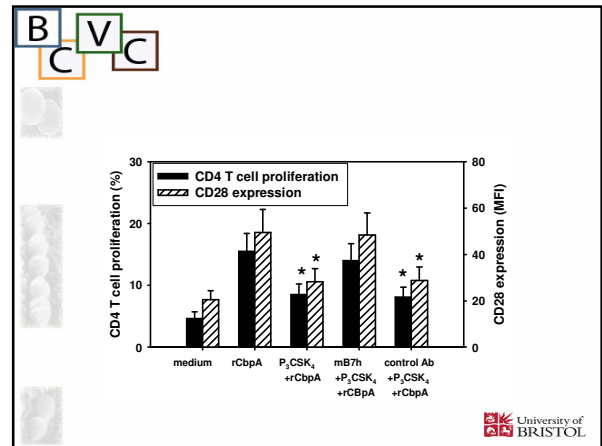
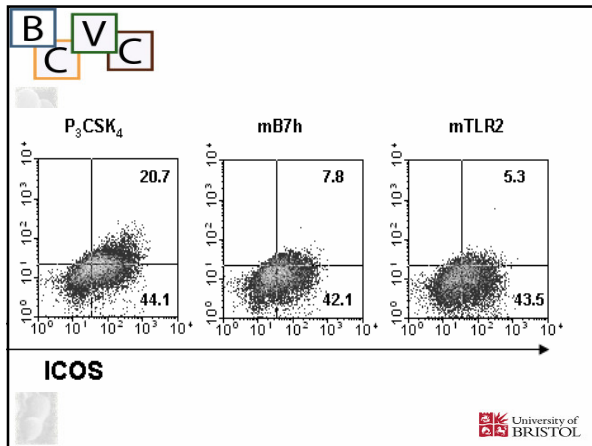
+/- TLR agonist

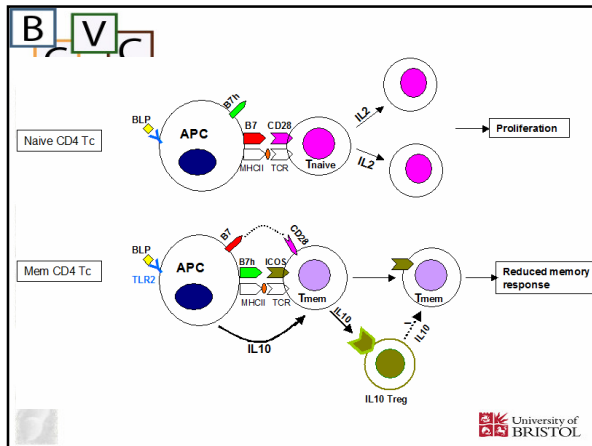












**B V C** So what?....

- TLR agonists as adjuvants...
  - SSVI Nasal flu vaccine, Escherichia coli enterotoxin & Bell's Palsy
  - Cervarix - ASO4 - monophosphoryl lipid A
- Primary/memory responses
- Autoimmunity/autoinflammatory effects

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PATH

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