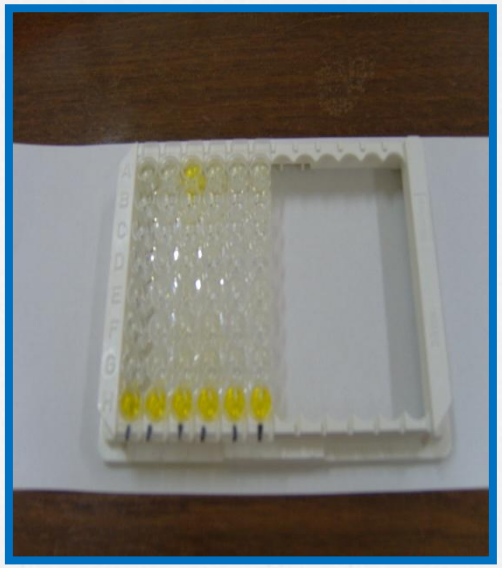
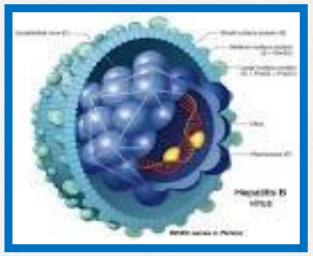
The Different Application of ELISA



Detection of Infectious Agents

- ✓ Bacteria e.g. *Campylobacter*

- ✓ Fungi
- ✓ Virus e.g. HBV



- ✓ Parasites e.g. *Leishmania*

Screening Donated Blood

- ✓ HIV
- ✓ Hepatitis C
- ✓ Hepatitis B

Measuring toxins in contaminated food

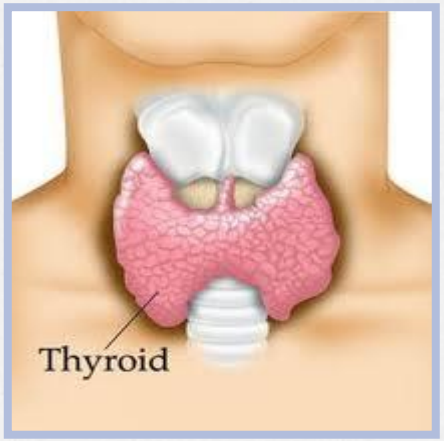
- ✓ Toxins of bacteria e.g. *Staph. aureus*
- ✓ Toxins of fungi e.g . Aflatoxins
- ✓ Environmental toxic substances e.g . Cadmium

Measuring food allergens in food industry

- ✓ e.g. Milk, peanuts & eggs

Measuring Hormone Levels

- ✓T3 & T4 (for thyroid function)
- ✓ HCG (as a test for pregnancy)
- ✓LH (determining the time of ovulation)



Measuring Proteins Levels

- ✓ Serum proteins e.g. albumin & immunoglobulin

Measuring Minerals Levels

- ✓ e.g. Ca

Measuring Vitamins Levels

- ✓ e.g. Vit. A, Vit. B 12 & Vit. D

Detection of Tumor Markers

- ✓ Carcinoembryonic antigen (CEA)
- ✓ α-fetoprotein (AFP)

Detection of Diseases Markers

- ✓ Detection rheumatoid factors which has important role in diagnosis rheumatoid arthritis

Detection of Drug Markers

- ✓ Drug residue in food e.g. Sulfamethazine
- ✓ Detection illicit drug e.g. Cocaine opiates
- ✓ Drug discovery by screening the compounds
- ✓ Toxicology as a rapid presumptive screen for drugs

New born Screening

✓ **e.g.** Sickle cell anaemia

Genetically Modified Organisms(GMO)

✓ Qualitative and quantitative detection for targeted protein

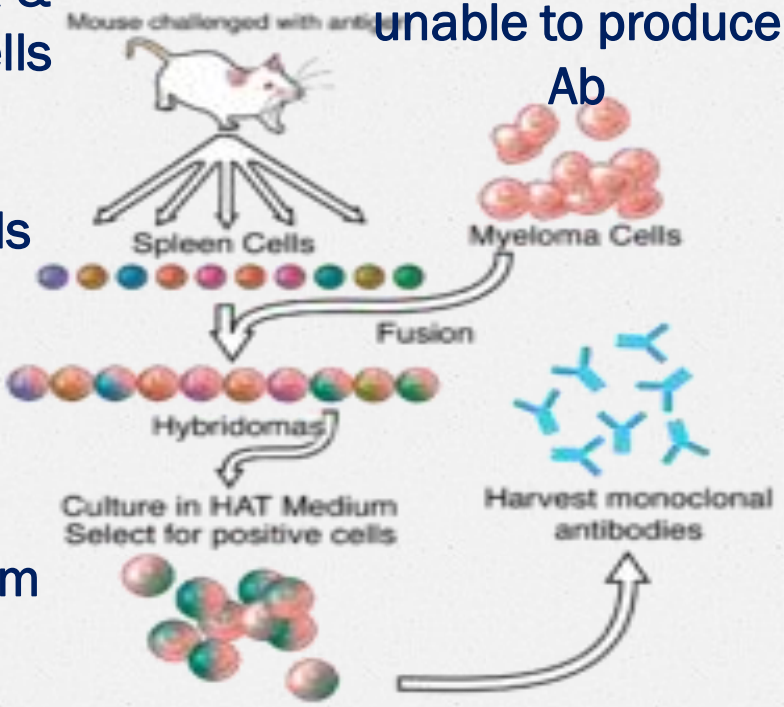
Commercial production of antibodies: Monoclonal

Mouse is immunized with antigen x & mouse spleen produces plasma cells that secret Ab against Ag

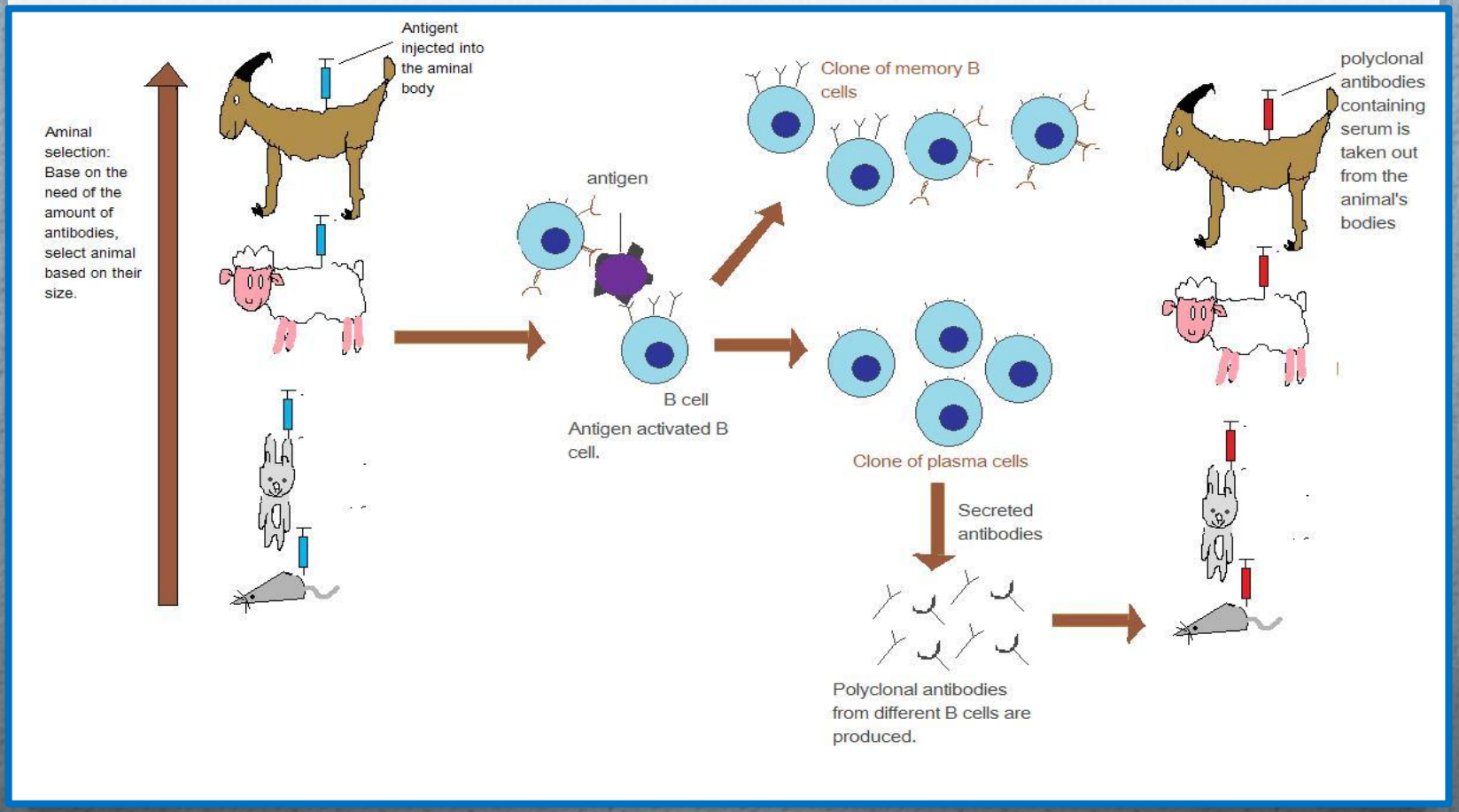
Mouse spleen removed. Plasma cells from spleen are isolated and mixed with myeloma cells. Cell fusion is induced to produce hybridoma

Cells are transferred to HAT medium

Myeloma cell unable to produce Ab



Commercial production of antibodies: Polyclonal



Thank
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