Development of HA vaccines

Professor Ian Gust
University of Melbourne
VIRAL HEPATITIS
Studies in Human Volunteers

World War II
- Havens, Neefe and Francis USA
- Macallum et al UK

Studies conducted in
- groups of conscientious objectors
- prison volunteers
VIRAL HEPATITIS

Studies in Human Volunteers

Post World War II
- Krugman, Giles and Ward
- Melnick and Boggs

Studies conducted in
- groups of mentally retarded children
- prison volunteers
VIRAL HEPATITIS

Willowbrook State School Studies

Krugman, Giles and Ward
HEPATITIS A

Professor Saul Krugman

MS1 and MS2
VIRAL HEPATITIS

Joliet Prison Studies

Melnick and Boggs
HEPATITIS A
Discovery

Bob Purcell, Al Kapikian, Steve Feinstone, NIH 1973
HEPATITIS A

Aetiological agent.
HEPATITIS A
Animal Models

Dr. Fritz Deinhardt

Saguinus mystax
Development of HA vaccines

- Adaptation to cell culture
  - CR326
  - HM175
HEPATITIS A

Virus shedding in the faeces
HEPATITIS A

Vaccine Development
HEPATITIS A VACCINE
Production process

HAV → Cell Culture

- Virus extraction

Crude virus harvest

- Ultrafiltration, Chromatography

Purified virus

- Inactivation

Inactivated virus

- Absorption to alum

Vaccine
HEPATITIS A

Vaccine use in developed countries

To reduce risk of
- community wide outbreaks
- Disease in
  - travellers
  - homosexual, bisexual men
  - IV drug users
  - people with haemophilia
  - people with chronic liver disease
  - some laboratory workers
Development of HA vaccines

SERENDIPITY
- family outbreak
- second order issue
- transport problems
- surplus marmosets
- unexpected observation
- incorrect hypothesis