

American Enterprise Institute

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Applications of Animal Biotechnology

- Laboratory models in medicine
- Production of special foods, medications, and medical devices
- Animal improvements and products
- Industrial products
- Insect-based pest & disease control

Applications for Human Benefit

■ Food

- Specialized milk
- Better nutrition



■ Medical Devices

- Sutures
- Tendons
- Heart Valves

■ Drugs

- Alpha-1-antitrypsin
- Human lysozyme
- Plasminogen activator
- Factors VIII & IX
- Protein C
- Transmembrane conductance regulators
- Monoclonal antibodies

Xenotransplantation

- Parkinson's disease
- Diabetes
- Organ transplants
- Burns and other skin injuries

Applications for Animal Production

- Faster growth
- Environmental issues - "Enviropig"
- Disease resistance
- Allergenicity

Industrial Applications & Farming

- Manufacturing of new raw materials
 - body armor
 - bulletproof vests
 - canoes
- Insect-based pest & disease control
- Pesticide reduction
 - "predatory" mites

Public Health Risks

- Bioactive compounds
- Products derived from milk of transgenics
 - (e.g. TSE)
- Impact on animal
- New pathogens
- Unintended adverse outcomes
 - "pleiotropic effect"
- Human error

FDA's regulation of biotechnology

- Transgenic plants → GRAS
- Environmental impact
- Science-based risk assessments
- FD & C Act
- Compliance