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Induction of lactogenic immunity to transmissible gastroenteritis virus of swine using an attenuated coronavirus mutant able to survive in the physicochemical environment of the digestive tract

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A transmissible gastroenteritis (TGE) coronavirus mutant (188-SG), selected as attenuated and resistant to acidity and proteases of the digestive tract of adult pigs, was used as vaccine ('Nouzilly strain') in sows to protect suckling piglets against a challenge exposure carried out with a highly virulent TGE strain. The pregnant sows were immunized once (42–49 days before farrowing) or twice (42–49 and 7–15 days before farrowing) by the oral, intramuscular or conjunctival route with the 188-SG strain. Sows exposed to virulent TGEV in the field and experimentally infected sows (two oral inoculations during pregnancy) were used as positive controls leading to high protection. The neutralizing antibody response to vaccination and/or infection was studied in serum and milk. No protection against mortality was observed in the litters of (1) the nine seronegative, susceptible sows with piglet mortality of 65/70,

(2) the seven once orally vaccinated sows, with mortality of 44/54 (3) the seven sows vaccinated twice by the conjunctival route, with mortality of 55/76. Moderate protection was observed in (1) the eight sows vaccinated intramuscularly twice with piglet mortality of 36/90, (2) the seven orally and intramuscularly vaccinated sows with piglet mortality of 31/51. In contrast, improved protection was observed in (1) the 10 sows vaccinated twice orally, with piglet mortality of 23/95, (2) the four naturally infected sows with piglet mortality of 6/41, (3) the six sows experimentally infected with virulent TGEV with piglet mortality of 1/59. No correlation was found between neutralizing antibodies titers in serum and milk and protection rate of the piglets. The results indicate that relative protective lactogenic immunity against TGEV is induced only by repeated ingestion of the attenuated 188-SG strain of TGEV.

A trial of the immunogenicity of inactivated hepatitis A vaccine administered with immune serum globulin

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SKB has prepared a purified, formalin-inactivated and alum-adsorbed hepatitis A virus (HAV) vaccine, which is administered in a schedule of 0, 1 and 6 months. It may be necessary to give immune serum globulin (ISG) concomitantly with the first dose to provide protection until adequate antibody response has developed. The effect of ISG on the immune response to the vaccine was evaluated in two groups of seronegative volunteers: 29 in group 1 were given HAV vaccine alone and 37 in group 2 received 5 ml of ISG (Cutter) at the

time of the first HAV vaccine dose. Each dose of HAV vaccine contained 720 Eu/ml. Anti-HAV was determined by means of the Abbott assay (HAVAB-EIA) and SKB's modified ELISA. After the first dose all had detectable antibodies by the SKB modified ELISA. Those who received ISG had a significantly lower response, although after the third dose, nearly all were positive by the Abbott ELISA. These findings have implications for the concomitant injection of ISG with other inactivated vaccines.

Transmissible gastroenteritis (TGE): prophylactic with live homo- and heterovaccines

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Effectivity of immunization of sows was dependent on injection method and vaccines dose. Combined intramuscular and intranasal immunization of pregnant sows with the live TGE-vaccine appears to be most effective. Additional intracutaneous vaccination failed to enhance immunity. The vaccines infection of sows *in utero* within the period of artificial fertilization was accompanied with manifested lactogenic immunity without reproductive function alterations. The

avirulent strain (CAPM V-355) of porcine respiratory coronavirus resulted in clear heterologous immunity of vaccinated sows. The combination of anti-TGE-vaccines high dose (≥ 9.0 lg TCID₅₀) and combined way immunization of pregnant sows provided the apparent piglets protection (≥ 85 per cent) of both under experimental and field conditions. Immunization of newborn piglets *per os* in farms unfavourable with TGM is ineffective.

Severity of rotavirus infection in relation to serotype, monotype and electropherotype

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Conflicting reports have been published about differences between subgroup 1 and subgroup 2 rotavirus disease, and little is known about differences between serotypes. Rotaviruses have

been stored and serotyped during epidemiological studies in Melbourne from 1974–1989. Retrospective review of clinical histories provided adequate information to assess severity of