A Natural Mouse Model That Enables the Discovery and Characterization of Bacterial and Host Factors That Mediate Neisseria Colonization and Persistence, and Targets for Vaccines and Antimicrobials

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Title: A Natural Mouse Model Enabling the Discovery and Characterization of Bacterial and Host Factors that Mediate Neisseria Colonization and Persistence While Targeting for Vaccines and Antimicrobials

Invention: This technology is a natural small animal model that circumvents the barriers of host restriction, often seen when studying Neisseria species. This model can be used to study host determinants controlling colonization resistance and factors involved in Neisseria-host interactions and screening therapeutics and vaccines against Neisseria.

Background: Neisseria gonorrhoeae (Ngo) and Neisseria meningitidis (Nme) cause several high impact diseases in humans, most notably gonorrhea and meningitis. Ngo causes more than 160 million new infections each year, has developed antibiotic resistance and no vaccine exists. The absence of a valid animal model is the biggest barrier to understanding how Ngo and Nme cause infection.

Applications:

- Vaccine/antimicrobial R&D
- Laboratory research
- Method of screening therapeutic candidates for treatment or prevention of bacterial infection

Advantages:

- Does not require the use of antibiotics, hormones, invasive procedures or genetic manipulation
- Assesses vaccine efficacy
- Provides a tool for development and validation of Nme and Ngo targeting compounds
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