

CONTROL OF DIETARY AND MICROBIAL EXPOSURE IN EARLY LIFE AS A NOVEL APPROACH TO TARGET ALLERGY DEVELOPMENT IN INFANTS

Knoop, Kathryn, McDonald, Keely, Newberry, Rodney

Hardin, Clyde "Frank"

T-016480

Background: The frequency of allergic disorders has been rapidly increasing in children in Western societies. Previous studies have shown reduced allergic outcomes in at-risk children upon breast feeding with complementary introduction of food allergens combined with limited oral antibiotic exposure in the first year of life. The biological mechanism behind the observed reduced allergic outcome had not yet been fully elucidated.

Technology Description: Researchers at Washington University in St. Louis have identified a luminal antigen bypass followed by the expansion of a long lived population of regulatory T-cells. The regulatory T-cells can be directed towards dietary and microbial antigens, promote immune tolerance, and control the response by T Helper (Th2) type cells. The researchers show that luminal EGF in breast milk controls regional and temporal pattern of antigen exposure in the offspring's immune system. This technology describes the biological basis behind the differences in allergic outcomes between formula and breast feeding, and indicates that supplementing formulas with EGFR ligands in patterns similar to those in breast milk will help to reduce allergic outcomes in children.