PEDIATRICS RESEARCH MONTHLY NEWSLETTER


Aortic Coarctation in Young Patients. Pediat Therapeut

Rao, P.S. Future Directions in the Management of

NIH Deadlines:

- (NOT-OD-15-057), Grants.gov will be down for system maintenance Saturday, February 14, 2015 at 12:01 AM ET to Tuesday, February 17, 2015 at 6:00 AM ET. During this time, you will be able to work on proposals in Cayuse424, however you will not be able to submit proposals until Grants.gov is back online on Tuesday, February 17.16th.

- FEBRUARY 25 R15 (NEW, RENEWAL, RESUBMISSION, REVISION)
- MARCH 5 R01, U01 (RENEWAL, RESUBMISSION, REVISION)
- MARCH 12 K SERIES (RENEWAL, RESUBMISSION, REVISION)
- MARCH 16 R03, R21, R33, R34, R36 (RENEWAL, RESUBMISSION, REVISION)

PUBLICATIONS


PEDIATRIC RESEARCH SYMPOSIUM

Fourth Annual Department of Pediatrics Research Symposium

May 8, 2015
9:00 AM—3:00 PM
Hermann Conference Center
Children’s Memorial Hermann Hospital
CME will be offered

PEDIATRIC RESEARCH

Vicki Huff, Ph.D.
Professor
Department of Genetics
The University of Texas MD Anderson Cancer Center

Presents:
WT1 in kidney development and human disease.

Friday, February 20, 2015
12:00-1:00 p.m.
MSB B.100

The Pediatrics Gastroenterology Research Lab was established in 2007. It is co-directed by Yuying Liu, Ph.D., M.Ed., Assistant Professor, and by J. Marc Rhoads, M.D., Professor and Division Head of Gastroenterology.

Since 2007, our basic research has been focusing on mechanisms of neonatal necrotizing enterocolitis (NEC) which is the leading cause of gastrointestinal morbidity in premature infants.

We have found the critical roles of Toll-like receptor (TLR) and TLR-signaling regulators and mediators, as well as an imbalance of Foxp3 regulatory T (Treg) and effector memory T (Tem) cells, which promote the development of NEC. In addition, we have been studying the effects of probiotic *Lactobacillus reuteri* (LR) strains on the development of NEC. Our studies showed that LR reduces the incidence and severity of NEC in animal models via modulation of TLR4 and NF-κB signaling in the intestine. LR also causes a redistribution of T cell subsets in the intestinal mucosa. Recently, we observed that LR prolongs the survival of Foxp3-deficient scurfy (sf) mice, which may provide evidence for using probiotic LR to treat clinical patients with IPEX syndrome (immune dysregulation, polyendocrinopathy, enteropathy, X-linked) or patients with other autoimmune diseases. We were initially supported by the Department of Pediatrics, Biogaia AB Sweden, and by the Texas Medical Center Digestive Diseases Center.

Drs. Liu & Rhoads recently were funded (NIH/NCCAM 1R01AT007083) to investigate the mechanisms by which probiotic LR regulates intestinal inflammation in vitro and animal models. The research will be done in collaboration with Dat Q. Tran, M.D., Assistant Professor of Pediatric Allergy, Immunology and Rheumatology, and Pediatric Research Center at UT Medical School, and Mike Ferris, Ph.D., Associate Professor of Pediatrics and Microbiology at Louisiana State University School of Medicine in New Orleans.

The project is designed to investigate how mucosal dendritic cells and T cells (T_h1, T_h17, and Tregs) respond to probiotics, and which cells control gastrointestinal inflammation of the newborn. Moreover, we will show if LR treatment increases fecal microbial richness and diversity and alters their metabolic products, in order to understand local and systemic beneficial effects. Ultimately, we hope to provide novel insights into the mechanisms of how probiotics regulate neonatal intestinal inflammation.

Our clinical research focuses on colic, which we showed to be an inflammatory condition of babies who cry excessively. We are analyzing the microbiota and fecal calprotectin in babies treated with *L. reuteri* versus placebo in a “road to discovery” trial (NIH R34 AT006727).

Recently, we were happily joined by Dr. Baokun He, Postdoctoral Fellow; Thomas K. Hoang, Research Technician II, and Ting Wang, a Visiting Scientist from China.