



THE UNIVERSITY of TEXAS

HEALTH SCIENCE CENTER AT HOUSTON

Office of Technology Management

C3A RECEPTOR "KNOCK OUT" MICE

Market: Global sales of asthma and COPD treatments are currently worth around US\$20 billion. In the US asthma affected 29.5 million people in 2005. Asthmatics visited the doctor in offices and outpatient clinics 14.6 million times in 2004, and there were 1.8 million visits to the emergency room. Unfortunately, asthma was the cause of death for 3,780 people in the US in 2004. There is a significant and growing market looking for earlier diagnosis and better treatment options.

The Technology: A researcher at the University of Texas Health Science Center at Houston (UTHSC-H) has developed complement anaphylatoxin C3a-deficient mice on C57Black6 genetic background via the disruption of the C3aR gene by replacing the entire open reading frame. It is becoming increasingly clear that C3aR plays an important role in the development of Th2 responses in a mouse model of pulmonary allergy. This well-characterized model lacks the complement C3a, making it an excellent model for studying the complement activation fragments which mediate immune response to asthma.

Publications:

- Drouin SM, Corry DB, Hollman TJ, Kildsgaard J, Wetsel RA. Absence of the complement anaphylatoxin C3a receptor suppresses Th2 effector functions in a murine model of pulmonary allergy. *J Immunol.* 2002 Nov 15;169(10):5926-33.
- Kildsgaard J, Hollmann TJ, Matthews KW, Bian K, Murad F, Wetsel RA. Cutting edge: targeted disruption of the C3a receptor gene demonstrates a novel protective anti-inflammatory role for C3a in endotoxin-shock. *J Immunol.* 2000 Nov 15;165(10):5406-9.

NON-CONFIDENTIAL TECHNOLOGY DESCRIPTION

The preceding is intended to be a non-confidential summary of a novel technology created at the University of Texas Health Science center at Houston (UTHSCH), for which the University has obtained patent protection.

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Inventors: Wetsel

Patent Status: N/A

License Available: world-wide; non-exclusive

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