# FLU-B-GONE INDUCES IL-6 RESPONSES IN MACROPHAGES

FLU-B-GONE IMMUNOLOGICAL RESPONSE UPDATE

Antia E Veal

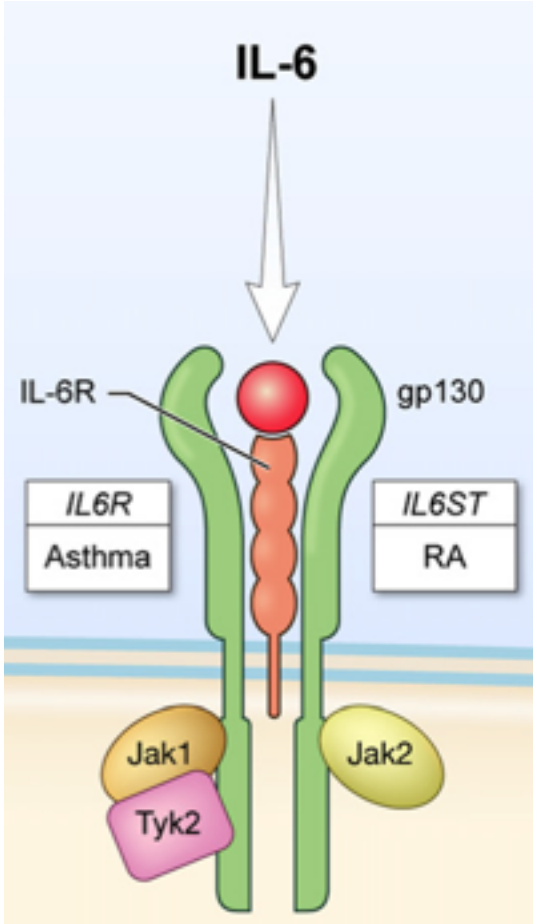
# Introduction

The immune response is differentially regulated by a diversity of **cytokines**

**Cytokines** are chemical messengers that recruits other immune cells to function and response to cellular processes, inflammation, and homeostasis.

## IL-6

- Pro-inflammatory cytokine and an anti-inflammatory cytokine
- Produced by a variety of cells including **macrophages**, dendritic cells, mast cells, B cells, and various non-leukocytic cells



# Previous Literature

Mucosal Immunol. 2012 May;5(3):258-66. doi: 10.1038/mi.2012.2. Epub 2012 Feb 1.

# Essential role of IL-6 in protection against H1N1 influenza virus by promoting neutrophil survival in the lung.

Dienz O[1], Rud JG, Eaton SM, Lanthier PA, Burg E, Drew A, Bunn J, Suratt BT, Haynes L, Rincon M.

Author information

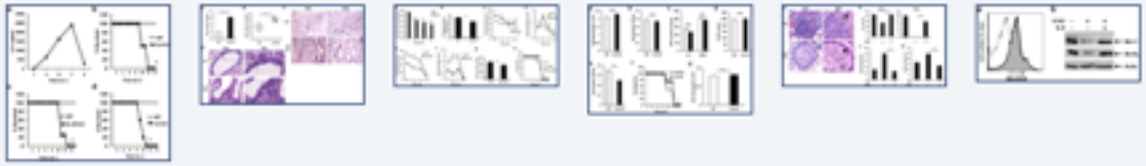
## Abstract

Influenza virus infection is considered a major worldwide public health problem. Seasonal infections with the most common influenza virus strains (e.g., H1N1) can usually be resolved, but they still cause a high rate of mortality. The factors that influence the outcome of the infection remain unclear. Here, we show that deficiency of interleukin (IL)-6 or IL-6 receptor is sufficient for normally sublethal doses of H1N1 influenza A virus to cause death in mice. IL-6 is necessary for resolution of influenza infection by protecting neutrophils from virus-induced death in the lung and by promoting neutrophil-mediated viral clearance. Loss of IL-6 results in persistence of the influenza virus in the lung leading to pronounced lung damage and, ultimately, death. Thus, we demonstrate that IL-6 is a vital innate immune cytokine in providing protection against influenza A infection. Genetic or environmental factors that impair IL-6 production or signaling could increase mortality to influenza virus infection.

PMID: 22294047 PMCID: PMC3328598 DOI: 10.1038/mi.2012.2

[Indexed for MEDLINE] Free PMC Article

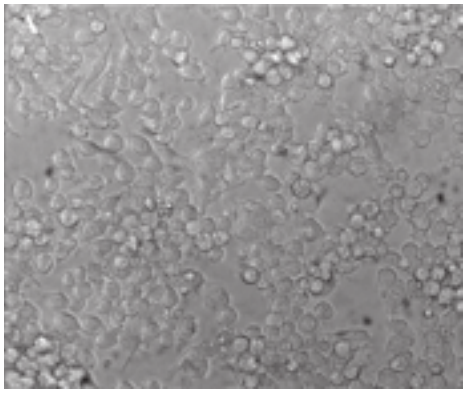




# Experimental Design

# Experimental Design

Balb/c mice macrophages were extracted and fused with cancerous cells creating an immortal mouse cell line called RAW 264.7 macrophages



RAW 264.7 macrophages were plated for 24hours for adherence

## Treatments/Conditions

Cells

Lipopolysaccaride (LPS)

LPS + FBG

RAW 264.7 macrophages cells were treated with various stimuli with and without the presence of FLU-B-GONE (FBG) to detect IL-6 reponses produced by macrophages

# Results

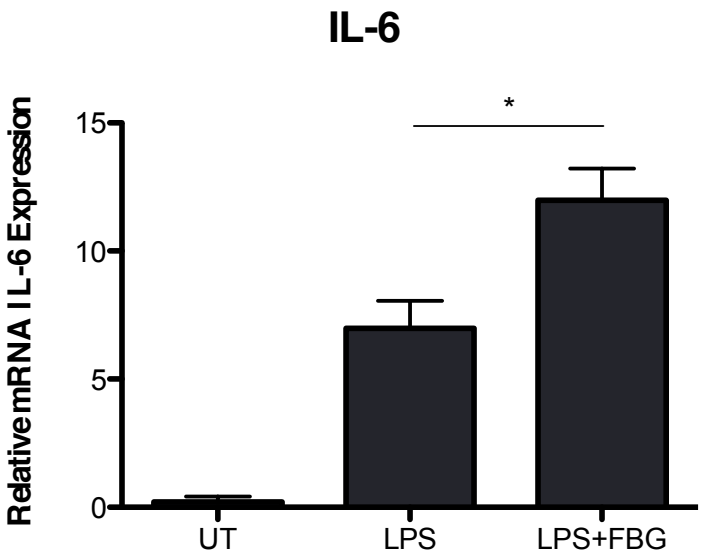



**Figure: IL-6 is significantly increased with the influence of LPS + Flu-B-Gone.** Cells were cultured with the presence and absence of FBG for IL-6 detection through quantitative PCR mRNA expression. Experiments were conducted five times (n=5). P value= 0.0183 (*)