

# Novel Therapy for Drug



# VCU

Innovation Gateway

## Dapsone as novel therapy for Disease.

### Dapsone as therapy for chronic inflammatory airway disease

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Dapsone is a synthetic sulfone that has anti-inflammatory and neutrophil-inhibiting properties and is used to treat neutrophilic dermatosis (diseases characterized by skin lesions with no evidence of infection). Currently Dapsone is administered orally as a topical cream or ointment. Since it is already used to treat skin disorders, there is an established safety record and side effect profile. Current treatment for inflammatory airway disorder include the use of Macrolides (antibiotics). However Macrolides are widely-used and in conjunction with drug-resistant strains of bacteria, this is a significant problem. Another issue while administering macrolides is that some patients may not respond well to these drugs.

## The technology

VCU researchers have found a novel method for delivering Dapsone in use for chronic inflammatory disease. It has been found that Dapsone has an immunomodulatory effect (affects functioning of the immune system) and not an immunosuppressive (suppress the functioning of the immune system). Dapsone has been shown to be effective against neutrophils (inflammatory cell) by affecting the LPS-stimulated airway epithelial cells. Dapsone is able to modulate inflammation when cells are directly exposed making it possible to deliver the drug as a therapeutic aerosol (nebulization). While Dapsone is available as an oral and topical drug, the novel use of this established drug is novel. This could fill a major unmet medical need in use for refractory airway diseases such as cystic fibrosis (CF), pulmonary fibrosis, severe asthma and chronic sinusitis. Since there is already an established safety record and side effect profile, further work would be needed to specifically evaluate the safety of Dapsone given by inhalation. Also it will be important to formulate Dapsone not only as a nebulizer solution but also as a pressurized meter dose and as a dry powder inhaler.

## Benefits

- » Immunomodulator therapy
- » Alternative therapy
- » Decreased side effects

## Applications

- » Treatment of Refractory airway diseases such as Cystic Fibrosis (CF), COPD, asthma, pulmonary fibrosis.
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### Patent status:

Patent pending: U.S. and foreign rights are available.

### License status:

This technology is available for licensing to industry for further development and commercialization

### Category:

Biomedical

### VCU Tech #:

10-012

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### External resources:

### Contact us about this technology

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