COMPOSITIONS AND METHODS FOR TREATING OTITIS MEDIA AND OTHER CONDITIONS WITH INHIBITORS OF CYLD

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Introduction: There is an ever-increasing demand for strategies to treat inflammation and auto-immune diseases. In this regard, developing anti-inflammatory agents by targeting positive regulators has been a key strategy. But, this is associated with several adverse effects such as infection susceptibility and induction of apoptosis. To overcome the disadvantages of the current therapeutics, inhibition of negative regulators offers a useful strategy for treating inflammation.

Technology: Using this novel approach, Georgia State University researchers have discovered that targeting the tumor suppressor CYLD, a crucial negative regulator of inflammation, is advantageous for treating overactive inflammation in many diseases. The invention discloses methods for treating inflammatory conditions through upregulation of CYLD, by administering a phosphodiesterase 4 (PDE4) or c-jun-N-terminus kinase 2 (JNK2) inhibitor. The methodology has been effectively demonstrated in the treatment of otitis media.

Applications:
- Treatment of upper respiratory infections that cause otitis media, rhinitis, sinusitis and infectious disease causing inflammation of ear, nose, throat, lung or nasal passage
- New therapeutic strategy for preventing lung fibrosis
- Treatment of COPD, asthma, bronchitis, pulmonary fibrosis, sarcoidosis and many others
- Inflammation of reproductive organs, such as prostatitis and pelvic inflammatory disease
- Autoimmune disease, such as psoriasis and rheumatoid arthritis
- Treatment of obesity

Advantages:
- Avoiding serious side effects associated with targeting positive regulators of inflammation
- Novel strategy of targeting negative regulators of inflammation
- Can be used for treating infants and children

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