

Reciprocal Synergy



NACURES PLUS

N-Acetyl-L-Cysteine 600 mg and Lactoferrin 50 mg Tablets

FIRST TIME IN INDIA



La Renon

MUCUS PHYSIOLOGY

Mucus is essential for body function and acts as a protective and moisturizing layer to keep critical organs from drying out. This layer protects the airway from inhaled irritants and also entraps and clears bacteria, inhibits bacterial growth and biofilm formation.

Mucus is an adhesive, viscoelastic gel polymer containing inorganic salts, antiseptic enzymes, immunoglobulins and glycoproteins such as lactoferrin and mucins.¹

SYNERGISTIC MUCOLYTIC COMBINATION-NAC AND LACTOFERRIN

The mucolytic effect observed through the reduction of mucus viscosity. NAC as expected show a strong mucolytic effect due to its ability to break down the disulfide bond. Interestingly, Lactoferrin at all concentration showed a potent mucolytic effect and the aforementioned effect was also concentration dependent in which the effect became stronger with the increase of Lactoferrin concentration.

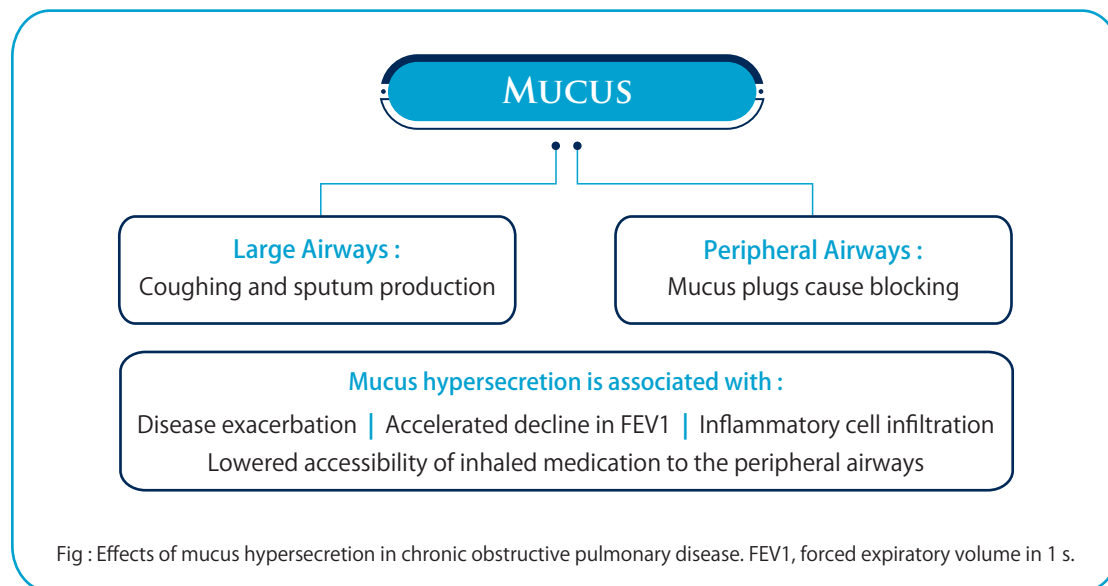
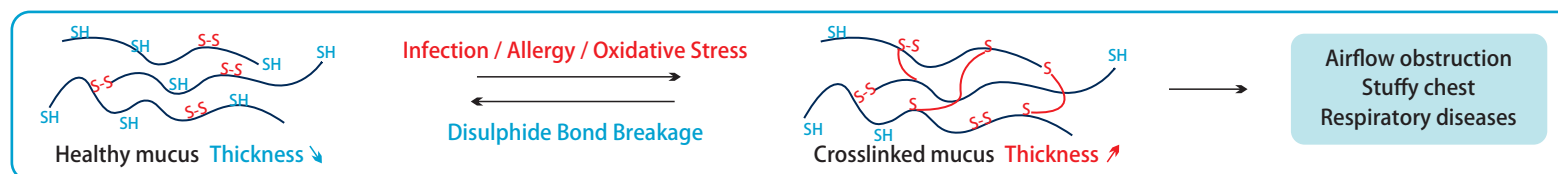


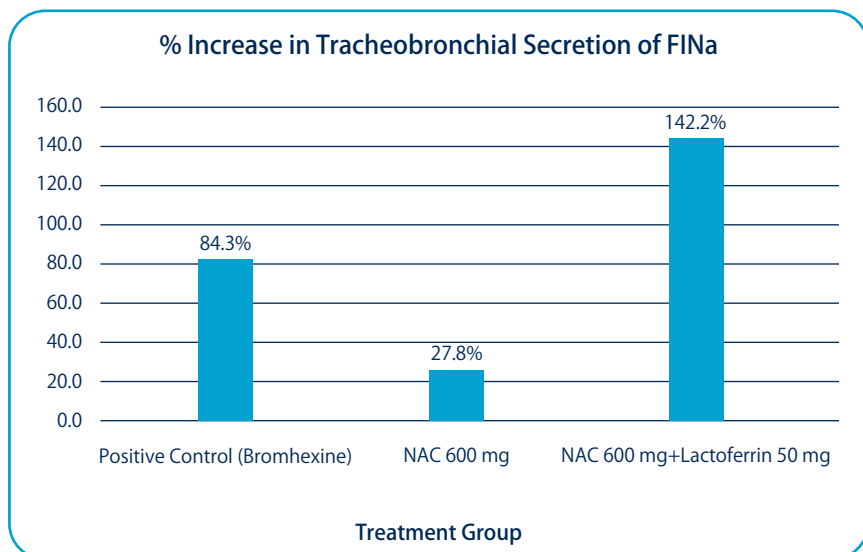
Fig : Effects of mucus hypersecretion in chronic obstructive pulmonary disease. FEV1, forced expiratory volume in 1 s.



STUDY TITLE : In Vivo Evaluation of Mucolytic Effect of N-Acetyl Cysteine (NAC) and Lactoferrin

Description : The aim of the study was to evaluate the mucolytic activity of NAC, Lactoferrin and Combinations were evaluated and compared with known mucolytic agents Bromhexine in rat

Method : Tracheobronchial secretion in rats, expressed by the amount of fluorescein sodium (FINa) dye excreted into the respiratory tract, was measured by modification of methods published earlier. The fluorescence intensity of the supernatant was measured with a Genesys 20 spectrophotometer set at a wavelength of 510 nm (emission).



Results : Mucolytic effect : N-Acetyl Cysteine, Lactoferrin and their combinations exerted dose-dependent augmentation of tracheobronchial secretion of FINa.

Overall, the Lactoferrin and their combination groups shows a dose-dependent effect on tracheobronchial secretions of FINa. A higher dose in combination with NAC will increase the higher volume of bronchial secretion and shows significant mucolytic effect.

% Increase in tracheobronchial secretion in the Lactoferrin 50 mg+ NAC600 mg group were about Five Times more than % increase in tracheobronchial secretion in NAC 600 mg group alone (27.8 % vs 142.2 %).

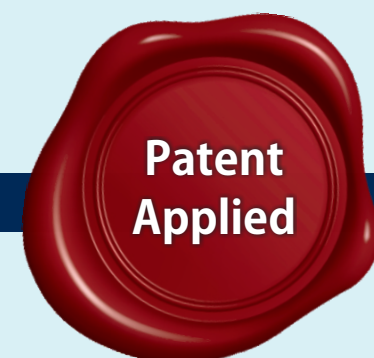
Conclusion : The Lactoferrin + NAC (Combination groups) shows **5 times higher mucolytic effect** than NAC group (alone) due to synergistic action.

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DESCRIPTION : Nacyres plus is unique Patent applied combination of N-acetyl derivative of the endogenous amino acid N-acetyl-L-cysteine and glycoprotein-Lactoferrin which shows synergetic mucolytic action.

INDICATIONS : NACYRES Plus Tablet is indicated as adjuvant therapy for patients with abnormal, viscid or inspissated mucus secretions in such conditions as :

- Chronic bronchopulmonary disease (chronic emphysema, emphysema with bronchitis, chronic asthmatic bronchitis, tuberculosis, bronchiectasis and primary amyloidosis of the lungs)
- Acute bronchopulmonary disease (pneumonia, bronchitis, tracheobronchitis)
- Tracheostomy care
- Atelectasis due to mucus obstruction
- Pulmonary complications of cystic fibrosis
- Pulmonary complications associated with surgery
- Diagnostic bronchial studies (bronchograms, bronchspirometry and bronchial- wedge catheterization)
- Post-traumatic chest conditions

MODE OF ACTION

As a Mucolytic Agent - The viscosity of pulmonary mucus secretions depends on the concentrations of mucoprotein. The latter increases with increasing purulence owing to the presence of cellular debris. The mucolytic action of acetylcysteine is related to the sulphhydryl group in the molecule. This group "opens" disulphide linkages in the mucus, thereby lowering the viscosity.

As an Antioxidant - Increasing evidence shows that oxidative stress plays a major role in the development of various human diseases. The antioxidant effect is due to the ability of NAC to act as a reduced glutathione (GSH) precursor; GSH is a well-known direct antioxidant and a substrate of several antioxidant enzymes.

ADVANTAGES

- The Lactoferrin + NAC (Combination groups) shows **5 times higher mucolytic effect** than NAC group (alone) due to synergistic action¹.
- These combination complement mucolytic and protective roles in respiratory disorder.

DOSAGE : 1-2 NACYRES Plus Tablet is recommended daily for adults and adolescents, aged 14 years and older. Use as directed by your physician.

PACKAGING INFORMATION : NACYRES Plus Tablet : Strip of 10 film coated tablets.

La Renon Healthcare Private Limited

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