



Treating Allergic Inflammation

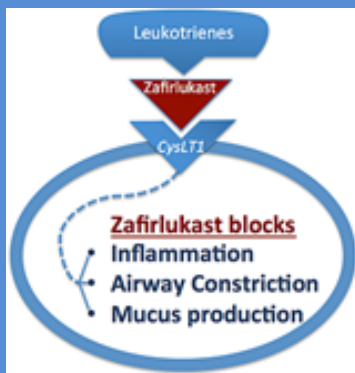
# Fact Sheet: Anti-leukotrienes & Zafirlukast

## About Us

Accolade is a specialty biopharmaceutical company focused on developing a range of products for the treatment of atopic and allergic disorders. Our team is dedicated to re-purposing the use of a known Leukotriene Receptor Antagonist (LTRA), called Zafirlukast (sold as Accolate®). Since our founding in 2012, we have made significant progress in advancing our portfolio based on novel use of Zafirlukast for atopic and allergic disorders, including inflammatory skin and eye disorders.

### LTRAs or Anti-leukotrienes

LTRAs are a unique class of non-steroidal, anti-inflammatory drugs. Originally, approved for the treatment of asthma, the anti-inflammatory effects of these drugs has significant potential for the treatment of other inflammatory conditions.

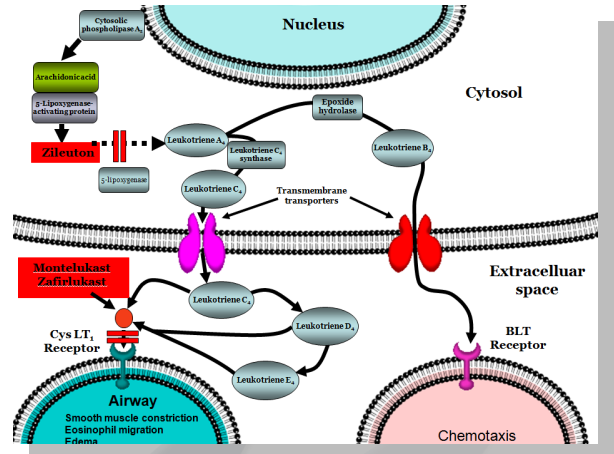


### ANTI-LEUKOTRIENES:

Originally approved for the treatment of asthma, anti-leukotrienes block the action of the cysteinyl leukotrienes on the CysLT1 receptors, thus reducing constriction of the airways, build-up of mucus in the lungs and inflammation of the breathing passages.

Anti-leukotrienes can be viewed as antihistamines that work faster, better and longer.

Leukotrienes C4, D4 and E4 are released from mast cells together with histamine in response to acute inflammatory mediators, from ragweed to cat dander to cigarette smoke, virtually anything that commonly causes a rash, sneezing, or itching.



The targets of anti-leukotrienes are those tissues that are directly exposed to irritants, which contain a specific cell type, mast cells. Mast cells produce leukotrienes and release them in response to allergens, irritants or infectious agents. They are, as would be expected, found in skin, esophagus and stomach, nose, conjunctivae, and airway.

### ZAFIRLUKAST:

Zafirlukast (Accolate) is an approved oral leukotriene receptor antagonist (LTRA) approved for the maintenance treatment of asthma, often used in conjunction with an inhaled steroid and/or long-acting bronchodilator. It was the first LTRA to be marketed in the US and is now approved in over 60 countries. The product is commercially available only in tablet form, dosed twice daily. The other major leukotriene receptor antagonist is montelukast (Singulair).

Unlike other members of the class, Zafirlukast has already been successfully formulated for topical use and shown safety and efficacy at 1/100 of the usual oral daily dosage while generating no (unmeasurably low) systemic blood levels. ACCOLADE is following up on this original work and has undertaken, together with established formulation companies, to re-purpose and develop topical products for uses in atopic inflammatory conditions, using proprietary formulations, devices (where appropriate).

**DEVELOPMENT ACTIVITIES:** Accolade is developing several topical formulations of Zafirlukast.

- Inhaled form for treatment of mild asthma and exercise induced bronchospasm
- Topical forms for seasonal allergic rhinitis, allergic conjunctivitis and dermatitis
- Pre-IND meeting held with FDA to confirm regulatory pathway to approval
- Inhaled topical formulation licensed to Invion in 2013
- Completed topical formulations for dermatitis and conjunctivitis in 2014
- IND supporting non-clinical studies targeted for completion in 2015
- Projected time-to-approval less than 4 years