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# Pathogenetic and prognostic roles of bloodborne fibrocytes in asthma

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**Key words:** Airway remodeling, Asthma, Biomarker,  
Chronic inflammation, Fibrocyte

# Sections

## **1 Introduction**

## **2 Background information on Fc identification and isolation**

## **3 Pathogenetic roles in asthma**

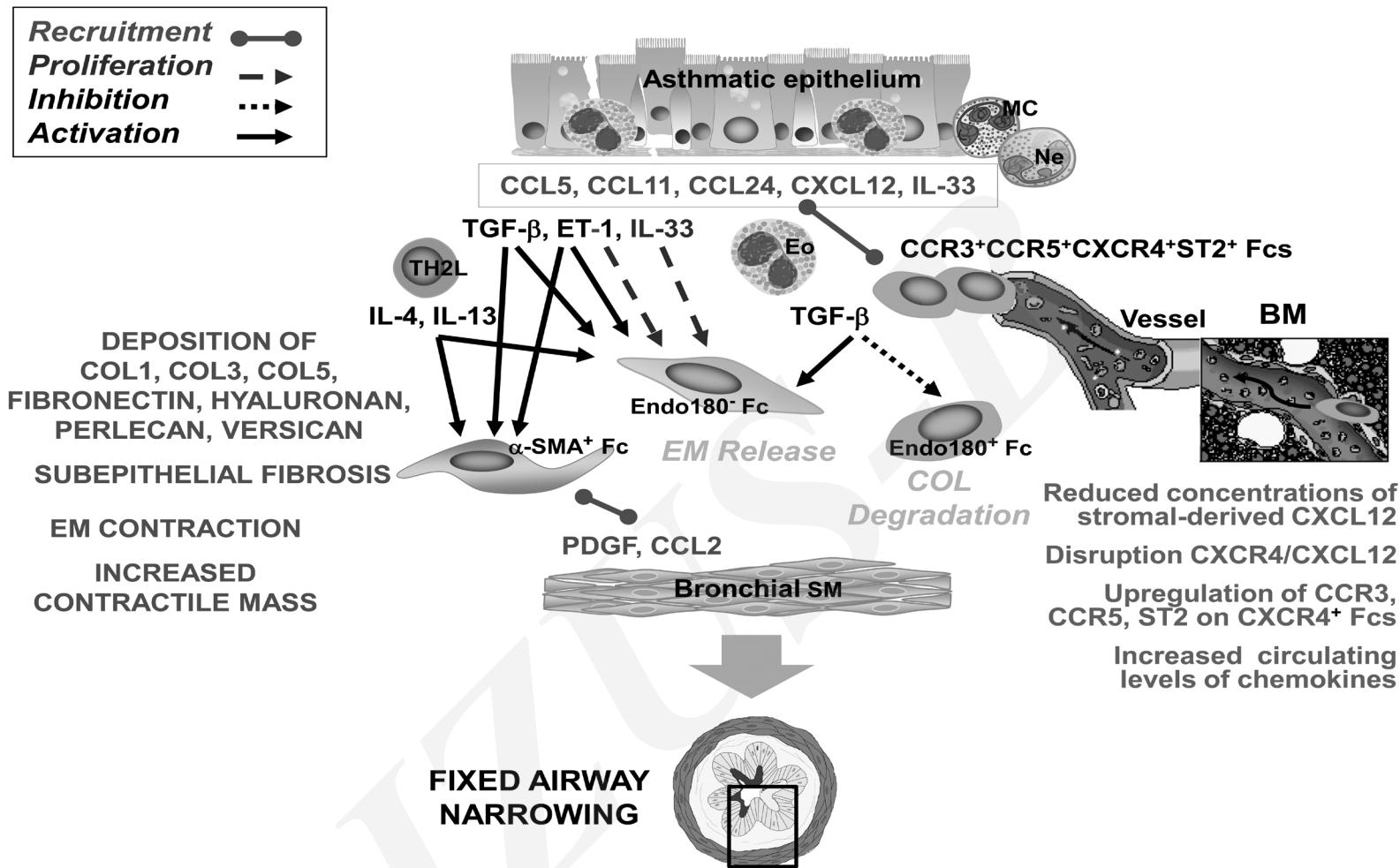
3.1 Amplification of inflammation induced by allergen exposure and viral infections

3.2 Contribution to airway remodeling in persistent Asthma

3.3 Factors regulating Fc trafficking and activation

## **4 Prognostic roles in asthma**

## **5 Concluding remarks**



**Fig. 1 Schematic illustration of the main molecular mechanisms and signaling pathways through which fibrocytes are mobilized and participate in the remodeling of the bronchial structure in inadequately treated asthma with persisting inflammation**

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# Conclusions

- Blood fibrocyte (Fc) count is an emerging biomarker of asthma control, because elevated numbers of circulating Fcs reflect ongoing airway inflammation and distinguish patients with adequately controlled disease from those whose asthma is chronically undertreated or resistant to available therapies.
- Blood Fc count is also an emerging biomarker of disease progression because elevated numbers of circulating Fcs reflect ongoing airway remodeling.
- Persistently elevated blood Fc counts are associated with persisting airway fibrocytosis, which causes further structural alterations and also increases the risk of acute exacerbations by amplifying TH2L-driven inflammation after every allergen exposure and rhinovirus infection and by delaying the resolution of viral infections.
- For these reasons, the integration of agents targeting Fc trafficking and activation into the management strategy for patients with asthma resistant to currently available drugs may greatly reduce the future risk of acute exacerbations and adverse outcomes.