

Eosinophilic Research at the Cincinnati Center for Eosinophilic Disorders (CCED)

The [Cincinnati Center for Eosinophilic Disorders](#) (CCED) is a leader in research for these often-misunderstood conditions. Our research spans all states of therapeutic development. Developing new treatments and cures is an involved process that requires significant time and investment, especially during the fundamental stages of basic research and discovery validation, which are a major priority of the CCED. The CCED has a critical role in this process, working tirelessly on each stage, and has already had a key role in the development of therapeutic strategies for eosinophilic disorders, such as eosinophilic esophagitis ([EoE](#)) and hypereosinophilic syndrome (HES).

Stages of Therapeutic Development (*CCED Involvement)



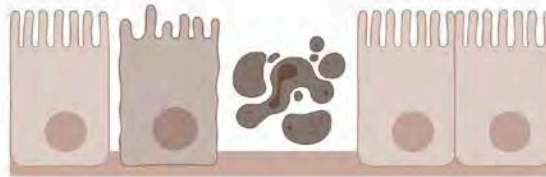
Current Therapeutic Mechanisms and Diagnostics

Current Therapeutic Mechanisms and Diagnostics

Suppress Inflammatory Response



Modulate Epithelial Barrier, Allergen Sensing, and Microbiome

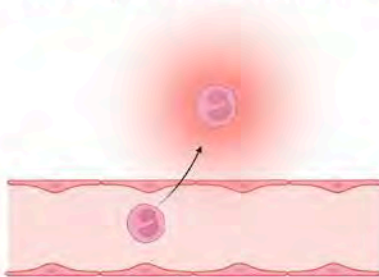


Molecular Diagnostics



Inhibit Eosinophil Functions

Eosinophil Recruitment



Eosinophil Activation



Eosinophil Survival



Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2022)

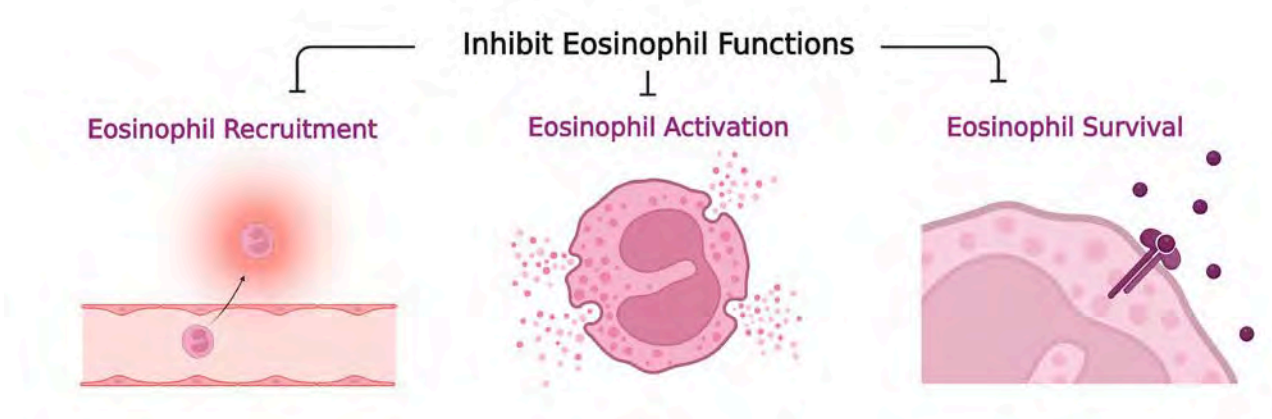
Suppress Inflammatory Response



Mechanism	Target	CCED Research	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Suppress inflammatory response					
Systemic corticosteroids	Immune system	1-3			Off-label clinical use
Topical corticosteroids	Local inflammation	1-4	Flovent	5,6 and Current Trial (enrollment closed)	Off-label clinical use
			Budesonide		Phase III
Anti-inflammatory	CDH26	7,8	CDH26-Fc		Preclinical Research
Anti-inflammatory	NTRK1 (aka TRKA)	9			Preclinical Research
Anti-inflammatory	SPINK7	10,11			Preclinical Research
Anti-inflammatory	A1AT	10,11		Current Trial (enrollment not yet open)	Phase II
Anti-Barrier	KLK5, PAR2 and other proteases	10,11			Fundamental Research



Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2022)



Mechanism	Target	CCED Research	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Inhibit Eosinophil Functions					
Inhibit eosinophil recruitment					
Chemokine inhibition	CCR3	12-39			Phase II
Chemokine inhibition	CCL11 (eotaxin-1)	12,13,15,17,20,23,25,28-30,33,34,36,38-80	Bertilimumab		Phase III
Cytokine inhibition	IL-13	1,3,20,21,23,30,32,33,36,37,59,62,63,65,69,73,78,81-118	QAX576	Current Trial (enrollment closed)	Phase III
		33,82,84,85,94,106,108,110,111	Cendakimab (formerly RPC4046)	Current Trial (enrollment open)	Phase III
Cytokine receptor inhibition	IL-13R				Preclinical Research



Cytokine receptor inhibition	IL-4R	119-121	Dupilumab	Current Trial (enrollment open)	Phase III (FDA approved for asthma and eczema; FDA 2022 review for eosinophilic esophagitis)
Anti-inflammatory	TGF-β	33,75,109,122	Lorsartan	Current Trial (enrollment closed)	Phase II
Adhesion molecule inhibition	Periostin	123			Preclinical Research
Chemokine inhibition	CCL26 (eotaxin-3)	1,3,27,32,83,86,107,124-126			Preclinical Research
Epigenome modifiers	Epigenome	86,127			Fundamental and Preclinical Research
Short-chain fatty acid	FFAR3	128	Butyrate		Preclinical Research

Inhibit eosinophil activation



Cytokine inhibition	TSLP	129-131	AMG 157, Tezepelumab		Phase II (FDA approved for asthma)
Cytokine inhibition	IL-33	132,133			Preclinical Research, Phase II for asthma

Inhibit eosinophil survival



Cytokine inhibition	IL-5	13,17,19-21,28,31,32,35-37,44,50,52,53,55,56,59,61-67,69,74,76,78,79,83,108,115,134-157	Mepolizumab	31,35,142,151	FDA approved for eosinophilic asthma and hypereosinophilic syndrome
			Reslizumab	154 and Current Trial (enrollment closed)	FDA approved for eosinophilic asthma




Eosinophil depletion	IL-5R- α		Benralizumab	Current Trial (enrollment open)	Phase III (FDA approved for asthma)
Activation of inhibitory receptor	Siglec-8	138,150,158-160	Lirentelimab	Current Trial (enrollment closed)	Phase III
Activation of inhibitory receptor	PIRB	34,161			Preclinical Research

Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2022)

Modulate Epithelial Barrier,
Allergen Sensing, and Microbiome



Mechanism	Target	CCED Research	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Modulate Epithelial Barrier, Allergen Sensing, and Microbiome					
Cysteine protease modulation	CAPN14	162,163			Preclinical Research
Serine protease inhibitors	SPINK7, A1AT	10,11		Current Trial	Phase II
Adhesion molecule inhibition	CDH26	7,8			Fundamental Research
Barrier integrity modulation	Barrier function	110,164			Fundamental Research
Ion channel modulation	ANO1	165			Fundamental Research
Hormone modulation	Estradiol	166			Preclinical Research
Ripoptosome (RIP-IL-33-Caspase 3, 7, and 8)	Caspase 3, 7, and 8	167	Caspase 8 inhibitors		Preclinical Research
Microbiome modulation	Esophageal dysbiosis	168	Fecal matter transplantation		Preclinical Research

Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2022)

Molecular Diagnostics



Mechanism	Target	CCED Research	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Molecular Diagnostics					
Gene expression	Eosinophilic Esophagitis (EoE) Diagnostic Panel	1,111,113,169-174			Clinical Validation
	Eosinophilic Gastritis (EoG) Diagnostic Panel	175			Clinical Validation
	Eosinophilic Colitis (EoC) Diagnostic Panel	176			Clinical Validation



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