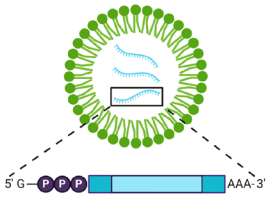
Eosinophilic Research at the Cincinnati Center for Eosinophilic Disorders (CCED)

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).

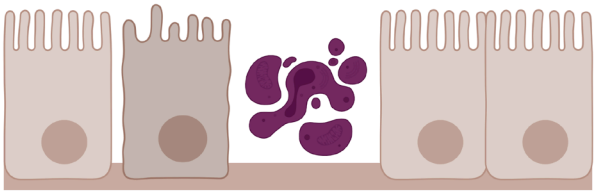
Stages of Therapeutic Development (*CCED Involvement)

Current Therapeutic Mechanisms and Diagnostics

Promote Immunologic Tolerance

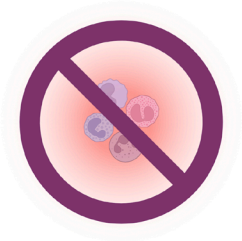


Modulate Epithelial Barrier, Allergen Sensing, and Microbiome



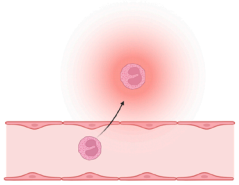
Molecular Diagnostics

Suppress Inflammatory Response



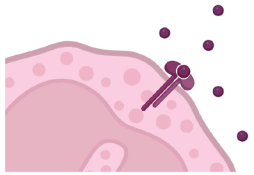
Inhibit Eosinophil Functions

Recruitment



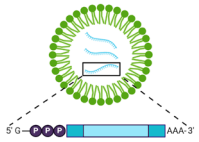
Activation

Survival



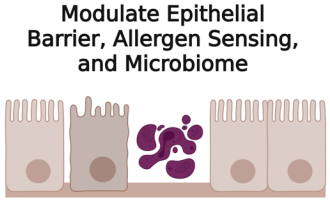
Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2026)

Promote Immunologic Tolerance



Mechanism	Target	CCED Publications	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Immune Tolerance					
Allergen mRNA Therapy	Immune responses	[1]	allergen mRNA lipid nanoparticle		Preclinical Research

Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2026)



Mechanism	Target	CCED Publications	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Modulate Epithelial Barrier, Allergen Sensing, and Microbiome[2, 3]					
Cysteine protease modulation	CAPN14	[4, 5]			Preclinical Research
Serine protease inhibitors	SPINK7, A1AT	[6, 7]		Current Trial	Phase II
Adhesion molecule inhibition	CDH26	[8, 9]			Fundamental Research
Barrier integrity modulation	Barrier function	[10, 11]			Fundamental Research
Ion channel modulation	ANO1	[12]			Fundamental Research
Hormone modulation	Estradiol	[13]			Preclinical Research
Ripoptosome (RIP–IL-33–Caspase 3, 7, and 8)	Caspase 3, 7, and 8	[14]	Caspase 8 inhibitors		Preclinical Research
Microbiome modulation	Esophageal dysbiosis	[15]	Fecal matter transplantation		Preclinical Research
Cytokine inhibitors	TSLP				Preclinical Research
Vitamin D Signaling	VDR	[16]			
Allergen mRNA Immunotherapy	Immune resetting	[1]			Preclinical Research

Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2026)

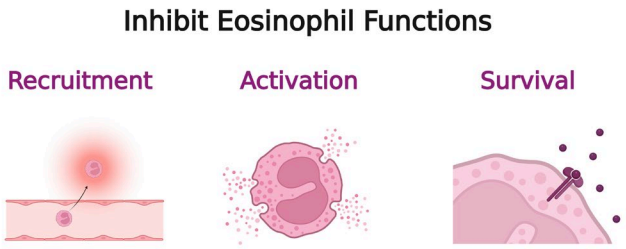
Molecular Diagnostics

Mechanism	Target	CCED Research	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Molecular Diagnostics					
Gene expression	Eosinophilic Esophagitis (EoE) Diagnostic Panel	[17-25]			Clinical Validation
	Eosinophilic Gastritis (EoG) Diagnostic Panel	[26]			Clinical Validation
	Eosinophilic Colitis (EoC) Diagnostic Panel	[27]			Clinical Validation
Blood Test	Blood Proteomic Signature				Clinical Validation

Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2026)

Mechanism	Target	CCED Research	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Suppress inflammatory response					
Systemic corticosteroids	Immune system	[17, 28, 29]			Off-label clinical use
Topical corticosteroids	Local inflammation	[17, 28-30]	Flovent	[31, 32] and Current Trial (enrollment closed)	Off-label clinical use
			Budesonide		FDA approved
Anti-inflammatory	CDH26	[8, 9]	CDH26-Fc		Preclinical Research
Anti-inflammatory	NTRK1 (aka TRKA)	[33]			Preclinical Research
Anti-inflammatory	SPINK7	[6, 7]			Preclinical Research
Anti-inflammatory	A1AT	[6, 7]		Current Trial (enrollment ongoing)	Phase II
Anti-Barrier	KLK5, PAR2 and other proteases	[6, 7]			Fundamental Research

Current* Pipeline of Diagnostic and Therapeutic CCED Research (*As of 2026)



Mechanism	Target	CCED Research	Therapeutic Agent	CCED Clinical Trials	Phase of Development
Inhibit Eosinophil Functions					
Inhibit eosinophil recruitment					
Chemokine inhibition	CCR3	34-61			Phase II
Chemokine inhibition	CCL11 (eotaxin-1)	34, 35, 37, 39, 42, 45, 47, 50-52, 55, 56, 58, 60-102	Bertilimumab		Phase III
Anti-inflammatory					
Cytokine inhibition	IL-13	11, 17, 19, 21, 29, 42, 43, 45, 52, 54, 55, 58, 59, 81, 84, 85, 87, 91, 95, 100, 103-137	QAX576	Phase II completed	Not Approved
		11, 19, 55, 104, 106, 107, 116, 128, 130, 138, 139	Cendakimab (formerly RPC4046)	Phase III completed	Pending

Cytokine receptor inhibition	IL-13R		Tralokinumab		Off-label clinical usage (FDA approved for atopic dermatitis)
Cytokine receptor inhibition	IL-4R	140, 141	Dupilumab	Post-marketing studies (enrollment open)	FDA approved for eosinophilic esophagitis in 2022
Anti-inflammatory	TGF-β	55, 97, 131, 142, 143	Lorsartan		Phase II Off-label clinical usage
Anti-inflammatory	TSLP		Tezepelumab Solrikitug	Phase II and III ongoing	Off-label clinical usage for Tezepelumab
Adhesion molecule inhibition	Periostin	144			Preclinical Research
Chemokine inhibition	CCL26 (eotaxin-3)	17, 29, 49, 54, 105, 108, 129, 145-147			Preclinical Research
Epigenome modifiers	Epigenome	108, 148			Fundamental and Preclinical Research
Short-chain fatty acid	FFAR3	149	Butyrate		Preclinical Research
Signal transduction inhibitors	JAK inhibitors		Upadicinab Tralokinumab	Phase II planning	Off-label clinical usage
Immunomodifiers	SP receptor modulator	150	Estrasimod	Phase II complete	Off-label clinical usage (approved for ulcerative colitis)
Inhibit eosinophil activation					
Cytokine inhibition	TSLP	151-154	AMG 157, Tezepelumab		Phase II (FDA approved for asthma)

Cytokine inhibition	IL-33	[155, 156]			Preclinical Research, Phase II for asthma
Inhibit eosinophil survival					
Cytokine inhibition	IL-5	[35, 39, 41-43, 50, 53, 54, 57-59, 66, 72, 74, 75, 77, 78, 81, 83-89, 91, 96, 98, 100, 101, 105, 130, 134, 157-180]	Mepolizumab	[53, 57, 165, 174]	FDA approved for eosinophilic asthma and hypereosinophilic syndrome
			Reslizumab	[177] and Current Trial (enrollment closed)	FDA approved for eosinophilic asthma
Aryl hydrocarbon receptor modulators	AHR	[181]	Tapinarof		FDA approved for atopic dermatitis
Eosinophil depletion	IL-5R-α		Benralizumab	Phase III completed	Phase III (FDA approved for asthma)
Activation of inhibitory receptor	Siglec-8	[161, 173, 182-184]	Lirentelimab	Phase III completed	Withdrawn for eosinophilic gastrointestinal disorders
Activation of inhibitory receptor	PIRB	[56, 185]			Preclinical Research

References

1. Rochman Y, Kotliar M, Klingler AM, Rochman M, Alameh MG, Melamed JR, Osswald GA, Caldwell JM, Felton JM, Mack LE, Hargis J, Lewkowich IP, Barski A, Weissman D, Rothenberg ME. Allergen-specific mRNA-lipid nanoparticle therapy for prevention and treatment of experimental allergy in mice. J Clin Invest. 2025;135(21). Epub 20250923. doi: 10.1172/JCI194080. PubMed PMID: 40985871; PMCID: PMC12578384.
2. Rochman M, Rothenberg ME. Immune functions of the esophagus. The Journal of allergy and clinical immunology. 2026;157(2):316-28. Epub 20251210. doi: 10.1016/j.jaci.2025.12.001. PubMed PMID: 41386478; PMCID: PMC12805589.
3. Rochman M, Kellerman K, Jankowski MP, Rothenberg ME. The oesophagus as an immune organ. Nat Rev Gastroenterol Hepatol. 2025;22(9):657-67. Epub 20250618. doi: 10.1038/s41575-025-01086-4. PubMed PMID: 40533621; PMCID: PMC12584050.
4. Litosh VA, Rochman M, Rymer JK, Porollo A, Kottyan LC, Rothenberg ME. Calpain-14 and its association with eosinophilic esophagitis. The Journal of allergy and clinical immunology. 2017. doi: 10.1016/j.jaci.2016.09.027. PubMed PMID: 28131390.
5. Litosh VA, Rochman M, Rymer JK, Porollo A, Kottyan LC, Rothenberg ME. Calpain-14 and its association with eosinophilic esophagitis. J Allergy Clin Immunol. 2017;139(6):1762-71 e7. doi: 10.1016/j.jaci.2016.09.027. PubMed PMID: 28131390; PMCID: PMC5461191.
6. Azouz NP, Ynga-Durand MA, Caldwell JM, Jain A, Rochman M, Fischesser DM, Ray LM, Bedard MC, Mingler MK, Forney C, Eilerman M, Kuhl JT, He H, Biagini Myers JM, Mukkada VA, Putnam PE, Khurana Hershey GK, Kottyan LC, Wen T, Martin LJ, Rothenberg ME. The antiprotease SPINK7 serves as an inhibitory checkpoint for esophageal epithelial inflammatory responses. Sci Transl Med. 2018;10(444). Epub 2018/06/08. doi: 10.1126/scitranslmed.aap9736. PubMed PMID: 29875205; PMCID: PMC6065103.
7. Azouz NP, Klingler AM, Pathre P, Besse JA, Baruch-Morgenstern NB, Ballaban AY, Osswald GA, Brusilovsky M, Habel JE, Caldwell JM, Ynga-Durand MA, Abonia PJ, Hu YC, Wen T, Rothenberg ME. Functional role of kallikrein 5 and proteinase-activated receptor 2 in eosinophilic esophagitis. Sci Transl Med. 2020;12(545). Epub 2020/05/29. doi: 10.1126/scitranslmed.aaz7773. PubMed PMID: 32461336.
8. Caldwell JM, Collins MH, Kemme KA, Sherrill JD, Wen T, Rochman M, Stucke EM, Amin L, Tai H, Putnam PE, Jimenez-Dalmaroni MJ, Wormald MR, Porollo A, Abonia JP, Rothenberg ME. Cadherin 26 is an alpha integrin-binding epithelial receptor regulated during allergic inflammation. Mucosal Immunol. 2017. doi: 10.1038/mi.2016.120. PubMed PMID: 28051089.
9. Caldwell JM, Collins MH, Stucke EM, Putnam PE, Franciosi JP, Kushner JP, Abonia JP, Rothenberg ME. Histologic eosinophilic gastritis is a systemic disorder associated with blood and extragastric eosinophilia, TH2 immunity, and a unique gastric transcriptome. The Journal of allergy and clinical immunology. 2014;134(5):1114-24. Epub 2014/09/23. doi: 10.1016/j.jaci.2014.07.026. PubMed PMID: 25234644; PMCID: PMC4254306.
10. Hogan SP, Seidu L, Blanchard C, Groschwitz K, Mishra A, Karow ML, Ahrens R, Artis D, Murphy AJ, Valenzuela DM, Yancopoulos GD, Rothenberg ME. Resistin-like molecule beta regulates innate colonic function: Barrier integrity and inflammation susceptibility. The Journal of allergy and clinical immunology. 2006;118(1):257-68. PubMed PMID: 16815164.
11. Sivaprasad U, Warrier MR, Gibson AM, Chen W, Tabata Y, Bass SA, Rothenberg ME, Khurana Hershey GK. IL-13Ralpha2 has a protective role in a mouse model of cutaneous inflammation. J Immunol. 2010;185(11):6802-8. Epub 2010/10/26. doi: 10.4049/jimmunol.1002118. PubMed PMID: 20971924; PMCID: PMC4251801.
12. Vanoni S, Zeng C, Marella S, Uddin J, Wu D, Arora K, Ptaschinski C, Que J, Noah T, Waggoner L, Barski A, Kartashov A, Rochman M, Wen T, Martin L, Spence J, Collins M, Mukkada V, Putnam P, Naren A, Chehade M, Rothenberg ME, Hogan SP. Identification of anoctamin 1 (ANO1) as a key driver of esophageal epithelial proliferation in eosinophilic esophagitis. The Journal of allergy and clinical immunology. 2020;145(1):239-54 e2. Epub 2019/10/28. doi: 10.1016/j.jaci.2019.07.049. PubMed PMID: 31647967.
13. Wheeler JC, Vanoni S, Zeng C, Waggoner L, Yang Y, Wu D, Uddin J, Karns R, Kottyan L, Mukkada V, Rothenberg ME, Hogan SP. 17beta-Estradiol protects the esophageal epithelium from IL-13-induced barrier dysfunction and remodeling. The Journal of allergy and clinical immunology. 2019;143(6):2131-46. Epub 2018/12/24. doi: 10.1016/j.jaci.2018.10.070. PubMed PMID: 30578870; PMCID: PMC6556402.

14. Brusilovsky M, Rochman M, Rochman Y, Caldwell JM, Mack LE, Felton JM, Habel JE, Porollo A, Pasare C, Rothenberg ME. Environmental allergens trigger type 2 inflammation through ripoptosome activation. Nat Immunol. 2021;22(10):1316-26. Epub 20210916. doi: 10.1038/s41590-021-01011-2. PubMed PMID: 34531562; PMCID: PMC8487942.
15. Brusilovsky M, Bao R, Rochman M, Kemter AM, Nagler CR, Rothenberg ME. Host-Microbiota Interactions in the Esophagus During Homeostasis and Allergic Inflammation. Gastroenterology. 2022;162(2):521-34 e8. Epub 20211008. doi: 10.1053/j.gastro.2021.10.002. PubMed PMID: 34627858.
16. Brusilovsky M, Rochman M, Shoda T, Kotliar M, Caldwell JM, Mack LE, Besse JA, Chen X, Weirauch MT, Barski A, Rothenberg ME. Vitamin D receptor and STAT6 interactome governs oesophageal epithelial barrier responses to IL-13 signalling. Gut. 2023;72(5):834-45. Epub 20220802. doi: 10.1136/gutjnl-2022-327276. PubMed PMID: 35918104; PMCID: PMC9892355.
17. Blanchard C, Mingler MK, Vicario M, Abonia JP, Wu YY, Lu TX, Collins MH, Putnam PE, Wells SI, Rothenberg ME. IL-13 involvement in eosinophilic esophagitis: transcriptome analysis and reversibility with glucocorticoids. The Journal of allergy and clinical immunology. 2007;120(6):1292-300. Epub 2007/12/13. doi: 10.1016/j.jaci.2007.10.024. PubMed PMID: 18073124.
18. Abonia JP, Blanchard C, Butz BB, Rainey HF, Collins MH, Stringer K, Putnam PE, Rothenberg ME. Involvement of mast cells in eosinophilic esophagitis. The Journal of allergy and clinical immunology. 2010;126(1):140-9. Epub 2010/06/12. doi: S0091-6749(10)00658-5 [pii] 10.1016/j.jaci.2010.04.009. PubMed PMID: 20538331; PMCID: 2902643.
19. Zuo L, Fulkerson PC, Finkelman FD, Mingler M, Fischetti CA, Blanchard C, Rothenberg ME. IL-13 induces esophageal remodeling and gene expression by an eosinophil-independent, IL-13R alpha 2-inhibited pathway. J Immunol. 2010;185(1):660-9. doi: 10.4049/jimmunol.1000471. PubMed PMID: 20543112; PMCID: PMC3746758.
20. Lu TX, Hartner J, Lim EJ, Fabry V, Mingler MK, Cole ET, Orkin SH, Aronow BJ, Rothenberg ME. MicroRNA-21 limits in vivo immune response-mediated activation of the IL-12/IFN-gamma pathway, Th1 polarization, and the severity of delayed-type hypersensitivity. J Immunol. 2011;187(6):3362-73. Epub 2011/08/19. doi: 10.4049/jimmunol.1101235. PubMed PMID: 21849676; PMCID: PMC3175642.
21. Lu TX, Lim EJ, Wen T, Plassard AJ, Hogan SP, Martin LJ, Aronow BJ, Rothenberg ME. MiR-375 is downregulated in epithelial cells after IL-13 stimulation and regulates an IL-13-induced epithelial transcriptome. Mucosal Immunol. 2012;5(4):388-96. doi: 10.1038/mi.2012.16. PubMed PMID: 22453679; PMCID: PMC4154234.
22. Lu TX, Sherrill JD, Wen T, Plassard AJ, Besse JA, Abonia JP, Franciosi JP, Putnam PE, Eby M, Martin LJ, Aronow BJ, Rothenberg ME. MicroRNA signature in patients with eosinophilic esophagitis, reversibility with glucocorticoids, and assessment as disease biomarkers. The Journal of allergy and clinical immunology. 2012;129(4):1064-75 e9. doi: 10.1016/j.jaci.2012.01.060. PubMed PMID: 22391115; PMCID: 3466056.
23. Shoda T, Wen T, Aceves SS, Abonia JP, Atkins D, Bonis PA, Caldwell JM, Capocelli KE, Carpenter CL, Collins MH, Dellon ES, Eby MD, Gonsalves N, Gupta SK, Falk GW, Hirano I, Menard-Katcher P, Kuhl JT, Krischer JP, Leung J, Mukkada VA, Spergel JM, Trimarchi MP, Yang GY, Zimmermann N, Furuta GT, Rothenberg ME, Consortium of Eosinophilic Gastrointestinal Disease R. Eosinophilic oesophagitis endotype classification by molecular, clinical, and histopathological analyses: a cross-sectional study. Lancet Gastroenterol Hepatol. 2018;3(7):477-88. Epub 2018/05/08. doi: 10.1016/S2468-1253(18)30096-7. PubMed PMID: 29730081; PMCID: PMC5997568.
24. Dunn JLM, Shoda T, Caldwell JM, Wen T, Aceves SS, Collins MH, Dellon ES, Falk GW, Leung J, Martin LJ, Menard-Katcher P, Rudman-Spergel AK, Spergel JM, Wechsler JB, Yang GY, Furuta GT, Rothenberg ME, Consortium of Eosinophilic Gastrointestinal Disease R. Esophageal type 2 cytokine expression heterogeneity in eosinophilic esophagitis in a multisite cohort. The Journal of allergy and clinical immunology. 2020;145(6):1629-40 e4. Epub 2020/03/22. doi: 10.1016/j.jaci.2020.01.051. PubMed PMID: 32197970.
25. Min S, Shoda T, Wen T, Rothenberg ME. Diagnostic merits of the Eosinophilic Esophagitis Diagnostic Panel from a single esophageal biopsy. J Allergy Clin Immunol. 2022;149(2):782-7.e1. Epub 20210808. doi: 10.1016/j.jaci.2021.07.032. PubMed PMID: 34380050; PMCID: PMC8821114.
26. Shoda T, Wen T, Caldwell JM, Collins MH, Besse JA, Osswald GA, Abonia JP, Arva NC, Atkins D, Capocelli KE, Dellon ES, Falk GW, Gonsalves N, Gupta SK, Hirano I, Mukkada VA, Putnam PE, Sheridan RM, Rudman Spergel AK, Spergel JM, Wechsler JB, Yang GY, Aceves SS, Furuta GT,

Rothenberg ME, Consortium of Eosinophilic Gastrointestinal Disease R. Molecular, endoscopic, histologic, and circulating biomarker-based diagnosis of eosinophilic gastritis: Multi-site study. The Journal of allergy and clinical immunology. 2020;145(1):255-69. Epub 2019/11/19. doi: 10.1016/j.jaci.2019.11.007. PubMed PMID: 31738990; PMCID: PMC6949389.

27. Shoda T, Collins MH, Rochman M, Wen T, Caldwell JM, Mack LE, Osswald GA, Besse JA, Haberman Y, Aceves SS, Arva NC, Capocelli KE, Chehade M, Davis CM, Dellon ES, Falk GW, Gonsalves N, Gupta SK, Hirano I, Khoury P, Klion A, Menard-Katcher C, Leung J, Mukkada VA, Putnam PE, Spergel JM, Wechsler JB, Yang GY, Furuta GT, Denson LA, Rothenberg ME. Evaluating Eosinophilic Colitis as a Unique Disease Using Colonic Molecular Profiles: A Multi-Site Study. Gastroenterology. 2022. Epub 20220125. doi: 10.1053/j.gastro.2022.01.022. PubMed PMID: 35085569.
28. Furuta GT, Liacouras CA, Collins MH, Gupta SK, Justinich C, Putnam PE, Bonis P, Hassall E, Straumann A, Rothenberg ME, First International Gastrointestinal Eosinophil Research Symposium S. Eosinophilic esophagitis in children and adults: a systematic review and consensus recommendations for diagnosis and treatment. Gastroenterology. 2007;133(4):1342-63. Epub 2007/10/09. doi: 10.1053/j.gastro.2007.08.017. PubMed PMID: 17919504.
29. Caldwell JM, Blanchard C, Collins MH, Putnam PE, Kaul A, Aceves SS, Bouska CA, Rothenberg ME. Glucocorticoid-regulated genes in eosinophilic esophagitis: a role for FKBP51. The Journal of allergy and clinical immunology. 2010;125(4):879-88 e8. Epub 2010/04/08. doi: S0091-6749(10)00171-5 [pii] 10.1016/j.jaci.2010.01.038. PubMed PMID: 20371398; PMCID: 2865682.
30. Mepolizumab: 240563, anti-IL-5 monoclonal antibody - GlaxoSmithKline, anti-interleukin-5 monoclonal antibody - GlaxoSmithKline, SB 240563. Drugs R D. 2008;9(2):125-30. Epub 2008/02/27. doi: 926 [pii]. PubMed PMID: 18298130.
31. Noel RJ, Putnam PE, Collins MH, Assa'ad AH, Guajardo JR, Jameson SC, Rothenberg ME. Clinical and immunopathologic effects of swallowed fluticasone for eosinophilic esophagitis. Clin Gastroenterol Hepatol. 2004;2(7):568-75.
32. Konikoff MR, Noel RJ, Blanchard C, Kirby C, Jameson SC, Buckmeier BK, Akers R, Cohen MB, Collins MH, Assa'ad AH, Aceves SS, Putnam PE, Rothenberg ME. A randomized, double-blind, placebo-controlled trial of fluticasone propionate for pediatric eosinophilic esophagitis. Gastroenterology. 2006;131(5):1381-91. Epub 2006/11/15. doi: 10.1053/j.gastro.2006.08.033. PubMed PMID: 17101314.
33. Rochman M, Kartashov AV, Caldwell JM, Collins MH, Stucke EM, Kc K, Sherrill JD, Herren J, Barski A, Rothenberg ME. Neurotrophic tyrosine kinase receptor 1 is a direct transcriptional and epigenetic target of IL-13 involved in allergic inflammation. Mucosal Immunol. 2015;8(4):785-98. doi: 10.1038/mi.2014.109. PubMed PMID: 25389033; PMCID: PMC4429043.
34. Gao JL, Sen AI, Kitaura M, Yoshie O, Rothenberg ME, Murphy PM, Luster AD. Identification of a mouse eosinophil receptor for the CC chemokine eotaxin. Biochemical and biophysical research communications. 1996;223(3):679-84. Epub 1996/06/25. doi: 10.1006/bbrc.1996.0955. PubMed PMID: 8687456.
35. Rothenberg ME, Ownbey R, Mehlhop PD, Loiselle PM, van de Rijn M, Bonventre JV, Oettgen HC, Leder P, Luster AD. Eotaxin triggers eosinophil-selective chemotaxis and calcium flux via a distinct receptor and induces pulmonary eosinophilia in the presence of interleukin 5 in mice. Mol Med. 1996;2(3):334-48. PubMed PMID: 8784786.
36. Zimmermann N, Bernstein JA, Rothenberg ME. Polymorphisms in the human CC chemokine receptor-3 gene. Biochim Biophys Acta. 1998;1442(2-3):170-6.
37. Rothenberg ME. Eotaxin. An essential mediator of eosinophil trafficking into mucosal tissues. Am J Respir Cell Mol Biol. 1999;21(3):291-5.
38. Zimmermann N, Conkright JJ, Rothenberg ME. CC chemokine receptor-3 undergoes prolonged ligand-induced internalization. J Biol Chem. 1999;274(18):12611-8.
39. Hogan SP, Mishra A, Brandt EB, Foster PS, Rothenberg ME. A critical role for eotaxin in experimental oral antigen-induced eosinophilic gastrointestinal allergy. Proc Natl Acad Sci U S A. 2000;97(12):6681-6. PubMed PMID: 10841566; PMCID: PMC18701.
40. Zimmermann N, Daugherty BL, Kavanaugh JL, El-Awar FY, Moulton EA, Rothenberg ME. Analysis of the CC chemokine receptor 3 gene reveals a complex 5' exon organization, a functional role for untranslated exon 1, and a broadly active promoter with eosinophil-selective elements. Blood. 2000;96(7):2346-54.

41. Zimmermann N, Daugherty BL, Stark JM, Rothenberg ME. Molecular analysis of CCR-3 events in eosinophilic cells. J Immunol. 2000;164(2):1055-64. PubMed PMID: 10623856.
42. Foster PS, Mould AW, Yang M, Mackenzie J, Mattes J, Hogan SP, Mahalingam S, McKenzie AN, Rothenberg ME, Young IG, Matthaei KI, Webb DC. Elemental signals regulating eosinophil accumulation in the lung. Immunological reviews. 2001;179:173-81. Epub 2001/04/09. PubMed PMID: 11292021.
43. Yang M, Hogan SP, Mahalingam S, Pope SM, Zimmermann N, Fulkerson P, Dent LA, Young IG, Matthaei KI, Rothenberg ME, Foster PS. Eotaxin-2 and IL-5 cooperate in the lung to regulate IL-13 production and airway eosinophilia and hyperreactivity. The Journal of allergy and clinical immunology. 2003;112(5):935-43.
44. Zimmermann N, Rothenberg ME. Receptor internalization is required for eotaxin-induced responses in human eosinophils. The Journal of allergy and clinical immunology. 2003;111(1):97-105.
45. Fulkerson PC, Zimmermann N, Brandt EB, Muntel EE, Doepker MP, Kavanaugh JL, Mishra A, Witte DP, Zhang H, Farber JM, Yang M, Foster PS, Rothenberg ME. Negative regulation of eosinophil recruitment to the lung by the chemokine monokine induced by IFN-gamma (Mig, CXCL9). Proc Natl Acad Sci U S A. 2004;101(7):1987-92.
46. Fulkerson PC, Zhu H, Williams DA, Zimmermann N, Rothenberg ME. CXCL9 inhibits eosinophil responses by a CCR3- and Rac2-dependent mechanism. Blood. 2005;106(2):436-43. PubMed PMID: 15802529.
47. Pope SM, Zimmermann N, Stringer KF, Karow ML, Rothenberg ME. The eotaxin chemokines and CCR3 are fundamental regulators of allergen-induced pulmonary eosinophilia. J Immunol. 2005;175(8):5341-50. PubMed PMID: 16210640.
48. Zimmermann N, Colyer JL, Koch LE, Rothenberg ME. Analysis of the CCR3 promoter reveals a regulatory region in exon 1 that binds GATA-1. BMC immunology. 2005;6:7. Epub 2005/04/06. doi: 10.1186/1471-2172-6-7. PubMed PMID: 15807893; PMCID: PMC1080127.
49. Blanchard C, Wang N, Stringer KF, Mishra A, Fulkerson PC, Abonia JP, Jameson SC, Kirby C, Konikoff MR, Collins MH, Cohen MB, Akers R, Hogan SP, Assa'ad AH, Putnam PE, Aronow BJ, Rothenberg ME. Eotaxin-3 and a uniquely conserved gene-expression profile in eosinophilic esophagitis. J Clin Invest. 2006;116(2):536-47. doi: 10.1172/JCI26679. PubMed PMID: 16453027; PMCID: PMC1359059.
50. Dixon H, Blanchard C, Deschoolmeester ML, Yuill NC, Christie JW, Rothenberg ME, Else KJ. The role of Th2 cytokines, chemokines and parasite products in eosinophil recruitment to the gastrointestinal mucosa during helminth infection. Eur J Immunol. 2006;36(7):1753-63. PubMed PMID: 16783848.
51. Fulkerson PC, Fischetti CA, McBride ML, Hassman LM, Hogan SP, Rothenberg ME. A central regulatory role for eosinophils and the eotaxin/CCR3 axis in chronic experimental allergic airway inflammation. Proc Natl Acad Sci U S A. 2006;103(44):16418-23. Epub 2006/10/25. doi: 10.1073/pnas.0607863103. PubMed PMID: 17060636; PMCID: PMC1637597.
52. Fulkerson PC, Fischetti CA, Rothenberg ME. Eosinophils and CCR3 regulate interleukin-13 transgene-induced pulmonary remodeling. Am J Pathol. 2006;169(6):2117-26. PubMed PMID: 17148674.
53. Stein ML, Collins MH, Villanueva JM, Kushner JP, Putnam PE, Buckmeier BK, Filipovich AH, Assa'ad AH, Rothenberg ME. Anti-IL-5 (mepolizumab) therapy for eosinophilic esophagitis. The Journal of allergy and clinical immunology. 2006;118(6):1312-9. PubMed PMID: 17157662.
54. Bullock JZ, Villanueva JM, Blanchard C, Filipovich AH, Putnam PE, Collins MH, Risma KA, Akers RM, Kirby CL, Buckmeier BK, Assa'ad AH, Hogan SP, Rothenberg ME. Interplay of adaptive th2 immunity with eotaxin-3/c-C chemokine receptor 3 in eosinophilic esophagitis. J Pediatr Gastroenterol Nutr. 2007;45(1):22-31. PubMed PMID: 17592361.
55. Munitz A, Brandt EB, Mingler M, Finkelman FD, Rothenberg ME. Distinct roles for IL-13 and IL-4 via IL-13 receptor alpha1 and the type II IL-4 receptor in asthma pathogenesis. Proc Natl Acad Sci U S A. 2008;105(20):7240-5. PubMed PMID: 18480254.
56. Munitz A, McBride ML, Bernstein JS, Rothenberg ME. A dual activation and inhibition role for the paired immunoglobulin-like receptor B in eosinophils. Blood. 2008;111(12):5694-703. PubMed PMID: 18316626.

57. Stein ML, Villanueva JM, Buckmeier BK, Yamada Y, Filipovich AH, Assa'ad AH, Rothenberg ME. Anti-IL-5 (mepolizumab) therapy reduces eosinophil activation ex vivo and increases IL-5 and IL-5 receptor levels. The Journal of allergy and clinical immunology. 2008;121(6):1473-83, 83 e1-4. PubMed PMID: 18410960.
58. Rayapudi M, Mavi P, Zhu X, Pandey AK, Abonia JP, Rothenberg ME, Mishra A. Indoor insect allergens are potent inducers of experimental eosinophilic esophagitis in mice. Journal of leukocyte biology. 2010;88(2):337-46. Epub 2010/04/24. doi: 10.1189/jlb.0110025. PubMed PMID: 20413729; PMCID: PMC2908938.
59. Wen T, Besse JA, Mingler MK, Fulkerson PC, Rothenberg ME. Eosinophil adoptive transfer system to directly evaluate pulmonary eosinophil trafficking in vivo. Proc Natl Acad Sci U S A. 2013;110(15):6067-72. doi: 10.1073/pnas.1220572110. PubMed PMID: 23536294; PMCID: PMC3625276.
60. Miyazaki D, Nakamura T, Ohbayashi M, Kuo CH, Komatsu N, Yakura K, Tominaga T, Inoue Y, Higashi H, Murata M, Takeda S, Fukushima A, Liu FT, Rothenberg ME, Ono SJ. Ablation of type I hypersensitivity in experimental allergic conjunctivitis by eotaxin-1/CCR3 blockade. International immunology. 2009;21(2):187-201. Epub 2009/01/17. doi: 10.1093/intimm/dxn137. PubMed PMID: 19147836; PMCID: PMC2638875.
61. Takeda A, Baffi JZ, Kleinman ME, Cho WG, Nozaki M, Yamada K, Kaneko H, Albuquerque RJ, Dridi S, Saito K, Raisler BJ, Budd SJ, Geisen P, Munitz A, Ambati BK, Green MG, Ishibashi T, Wright JD, Humbles AA, Gerard CJ, Ogura Y, Pan Y, Smith JR, Grisanti S, Hartnett ME, Rothenberg ME, Ambati J. CCR3 is a target for age-related macular degeneration diagnosis and therapy. Nature. 2009;460(7252):225-30. Epub 2009/06/16. doi: nature08151 [pii] 10.1038/nature08151. PubMed PMID: 19525930; PMCID: 2712122.
62. Rothenberg ME, Luster AD, Leder P. Murine eotaxin: an eosinophil chemoattractant inducible in endothelial cells and in interleukin 4-induced tumor suppression. Proc Natl Acad Sci U S A. 1995;92(19):8960-4. Epub 1995/09/12. PubMed PMID: 7568052; PMCID: PMC41087.
63. Rothenberg ME, Luster AD, Lilly CM, Drazen JM, Leder P. Constitutive and allergen-induced expression of eotaxin mRNA in the guinea pig lung. J Exp Med. 1995;181(3):1211-6.
64. Garcia-Zepeda EA, Rothenberg ME, Ownbey RT, Celestin J, Leder P, Luster AD. Human eotaxin is a specific chemoattractant for eosinophil cells and provides a new mechanism to explain tissue eosinophilia. Nature medicine. 1996;2(4):449-56. Epub 1996/04/01. PubMed PMID: 8597956.
65. Garcia-Zepeda EA, Rothenberg ME, Weremowicz S, Sarafi MN, Morton CC, Luster AD. Genomic organization, complete sequence, and chromosomal location of the gene for human eotaxin (SCYA11), an eosinophil-specific CC chemokine. Genomics. 1997;41(3):471-6. Epub 1997/05/01. doi: 10.1006/geno.1997.4656. PubMed PMID: 9169149.
66. Lamkhioued B, Renzi PM, Abi-Younes S, Garcia-Zepada EA, Allakhverdi Z, Ghaffar O, Rothenberg MD, Luster AD, Hamid Q. Increased expression of eotaxin in bronchoalveolar lavage and airways of asthmatics contributes to the chemotaxis of eosinophils to the site of inflammation. J Immunol. 1997;159(9):4593-601. PubMed PMID: 9379061.
67. Lilly CM, Nakamura H, Kesselman H, Nagler-Anderson C, Asano K, Garcia-Zepeda EA, Rothenberg ME, Drazen JM, Luster AD. Expression of eotaxin by human lung epithelial cells: induction by cytokines and inhibition by glucocorticoids. J Clin Invest. 1997;99(7):1767-73. Epub 1997/04/01. doi: 10.1172/JCI119341. PubMed PMID: 9120022; PMCID: PMC507998.
68. Luster AD, Rothenberg ME. Role of the monocyte chemoattractant protein and eotaxin subfamily of chemokines in allergic inflammation. Journal of leukocyte biology. 1997;62(5):620-33. Epub 1997/11/19. PubMed PMID: 9365117.
69. Minshall EM, Cameron L, Lavigne F, Leung DY, Hamilos D, Garcia-Zepada EA, Rothenberg M, Luster AD, Hamid Q. Eotaxin mRNA and protein expression in chronic sinusitis and allergen-induced nasal responses in seasonal allergic rhinitis. Am J Respir Cell Mol Biol. 1997;17(6):683-90. Epub 1997/12/31. doi: 10.1165/ajrcmb.17.6.2865. PubMed PMID: 9409555.
70. Rothenberg ME, MacLean JA, Pearlman E, Luster AD, Leder P. Targeted disruption of the chemokine eotaxin partially reduces antigen-induced tissue eosinophilia. J Exp Med. 1997;185(4):785-90.
71. Cook EB, Stahl JL, Lilly CM, Haley KJ, Sanchez H, Luster AD, Graziano FM, Rothenberg ME. Epithelial cells are a major cellular source of the chemokine eotaxin in the guinea pig lung. Allergy Asthma Proc. 1998;19(1):15-22.

72. Hogan SP, Mould AW, Young JM, Rothenberg ME, Ramsay AJ, Matthaei K, Young IG, Foster PS. Cellular and molecular regulation of eosinophil trafficking to the lung. Immunol Cell Biol. 1998;76(5):454-60.
73. Matthews AN, Friend DS, Zimmermann N, Sarafi MN, Luster AD, Pearlman E, Wert SE, Rothenberg ME. Eotaxin is required for the baseline level of tissue eosinophils. Proc Natl Acad Sci U S A. 1998;95(11):6273-8. PubMed PMID: 9600955.
74. van de Rijn M, Mehlhop PD, Judkins A, Rothenberg ME, Luster AD, Oettgen HC. A murine model of allergic rhinitis: studies on the role of IgE in pathogenesis and analysis of the eosinophil influx elicited by allergen and eotaxin. The Journal of allergy and clinical immunology. 1998;102(1):65-74.
75. Mishra A, Hogan SP, Lee JJ, Foster PS, Rothenberg ME. Fundamental signals that regulate eosinophil homing to the gastrointestinal tract. J Clin Invest. 1999;103(12):1719-27.
76. Gouon-Evans V, Rothenberg ME, Pollard JW. Postnatal mammary gland development requires macrophages and eosinophils. Development. 2000;127(11):2269-82.
77. Mishra A, Hogan SP, Brandt EB, Rothenberg ME. Peyer's patch eosinophils: identification, characterization, and regulation by mucosal allergen exposure, interleukin-5, and eotaxin. Blood. 2000;96(4):1538-44. Epub 2000/08/15. PubMed PMID: 10942403.
78. Mould AW, Ramsay AJ, Matthaei KI, Young IG, Rothenberg ME, Foster PS. The effect of IL-5 and eotaxin expression in the lung on eosinophil trafficking and degranulation and the induction of bronchial hyperreactivity. J Immunol. 2000;164(4):2142-50. PubMed PMID: 10657668.
79. Hogan SP, Mishra A, Brandt EB, Royalty MP, Pope SM, Zimmermann N, Foster PS, Rothenberg ME. A pathological function for eotaxin and eosinophils in eosinophilic gastrointestinal inflammation. Nat Immunol. 2001;2(4):353-60. PubMed PMID: 11276207.
80. Mishra A, Weaver TE, Beck DC, Rothenberg ME. Interleukin-5-mediated allergic airway inflammation inhibits the human surfactant protein C promoter in transgenic mice. J Biol Chem. 2001;276(11):8453-9. doi: 10.1074/jbc.M009481200. PubMed PMID: 11113143.
81. Pope SM, Brandt EB, Mishra A, Hogan SP, Zimmermann N, Matthaei KI, Foster PS, Rothenberg ME. IL-13 induces eosinophil recruitment into the lung by an IL-5- and eotaxin-dependent mechanism. The Journal of allergy and clinical immunology. 2001;108(4):594-601.
82. Rothenberg ME, Mishra A, Brandt EB, Hogan SP. Gastrointestinal eosinophils in health and disease. Adv Immunol. 2001;78:291-328.
83. Rothenberg ME, Mishra A, Brandt EB, Hogan SP. Gastrointestinal eosinophils. Immunological reviews. 2001;179:139-55.
84. Webb DC, McKenzie AN, Matthaei KI, Rothenberg ME, Foster PS. Distinct spatial requirement for eosinophil-induced airways hyperreactivity. Immunol Cell Biol. 2001;79(2):165-9.
85. Yang M, Hogan SP, Henry PJ, Matthaei KI, McKenzie AN, Young IG, Rothenberg ME, Foster PS. Interleukin-13 mediates airways hyperreactivity through the IL-4 receptor-alpha chain and STAT-6 independently of IL-5 and eotaxin. Am J Respir Cell Mol Biol. 2001;25(4):522-30.
86. Hogan SP, Foster PS, Rothenberg ME. Experimental analysis of eosinophil-associated gastrointestinal diseases. Current opinion in allergy and clinical immunology. 2002;2(3):239-48. Epub 2002/06/05. PubMed PMID: 12045421.
87. Mattes J, Yang M, Mahalingam S, Kuehr J, Webb DC, Simson L, Hogan SP, Koskinen A, McKenzie AN, Dent LA, Rothenberg ME, Matthaei KI, Young IG, Foster PS. Intrinsic defect in T cell production of interleukin (IL)-13 in the absence of both IL-5 and eotaxin precludes the development of eosinophilia and airways hyperreactivity in experimental asthma. J Exp Med. 2002;195(11):1433-44. Epub 2002/06/05. PubMed PMID: 12045241; PMCID: PMC2193548.
88. Mishra A, Hogan SP, Brandt EB, Rothenberg ME. IL-5 promotes eosinophil trafficking to the esophagus. J Immunol. 2002;168(5):2464-9. PubMed PMID: 11859139.
89. Mishra A, Hogan SP, Brandt EB, Wagner N, Crossman MW, Foster PS, Rothenberg ME. Enterocyte expression of the eotaxin and interleukin-5 transgenes induces compartmentalized dysregulation of eosinophil trafficking. J Biol Chem. 2002;277(6):4406-12. PubMed PMID: 11733500.
90. Mattes J, Hulett M, Xie W, Hogan S, Rothenberg ME, Foster P, Parish C. Immunotherapy of cytotoxic T cell-resistant tumors by T helper 2 cells: an eotaxin and STAT6-dependent process. J Exp Med. 2003;197(3):387-93. Epub 2003/02/05. PubMed PMID: 12566422; PMCID: PMC2193835.
91. Mishra A, Rothenberg ME. Intratracheal IL-13 induces eosinophilic esophagitis by an IL-5, eotaxin-1, and STAT6-dependent mechanism. Gastroenterology. 2003;125(5):1419-27.

92. Forbes E, Smart VE, D'Aprile A, Henry P, Yang M, Matthaei KI, Rothenberg ME, Foster PS, Hogan SP. T helper-2 immunity regulates bronchial hyperresponsiveness in eosinophil-associated gastrointestinal disease in mice. Gastroenterology. 2004;127(1):105-18.
93. Fulkerson PC, Zimmermann N, Hassman LM, Finkelman FD, Rothenberg ME. Pulmonary chemokine expression is coordinately regulated by STAT1, STAT6, and IFN-gamma. J Immunol. 2004;173(12):7565-74. PubMed PMID: 15585884.
94. Hogan SP, Rothenberg ME. Review article: The eosinophil as a therapeutic target in gastrointestinal disease. Alimentary pharmacology & therapeutics. 2004;20(11-12):1231-40. Epub 2004/12/21. doi: 10.1111/j.1365-2036.2004.02259.x. PubMed PMID: 15606385.
95. Pope SM, Fulkerson PC, Blanchard C, Akei HS, Nikolaidis NM, Zimmermann N, Molkentin JD, Rothenberg ME. Identification of a cooperative mechanism involving interleukin-13 and eotaxin-2 in experimental allergic lung inflammation. J Biol Chem. 2005;280(14):13952-61. Epub 2005/01/14. doi: 10.1074/jbc.M406037200. PubMed PMID: 15647285.
96. Simons JE, Rothenberg ME, Lawrence RA. Eotaxin-1-regulated eosinophils have a critical role in innate immunity against experimental Brugia malayi infection. Eur J Immunol. 2005;35(1):189-97. PubMed PMID: 15593125.
97. Letuve S, Lajoie-Kadoch S, Audusseau S, Rothenberg ME, Fiset PO, Ludwig MS, Hamid Q. IL-17E upregulates the expression of proinflammatory cytokines in lung fibroblasts. The Journal of allergy and clinical immunology. 2006;117(3):590-6. PubMed PMID: 16522458.
98. Simson L, Ellyard JI, Dent LA, Matthaei KI, Rothenberg ME, Foster PS, Smyth MJ, Parish CR. Regulation of carcinogenesis by IL-5 and CCL11: a potential role for eosinophils in tumor immune surveillance. J Immunol. 2007;178(7):4222-9. PubMed PMID: 17371978.
99. Ahrens R, Waddell A, Seidu L, Blanchard C, Carey R, Forbes E, Lampinen M, Wilson T, Cohen E, Stringer K, Ballard E, Munitz A, Xu H, Lee N, Lee JJ, Rothenberg ME, Denson L, Hogan SP. Intestinal macrophage/epithelial cell-derived CCL11/eotaxin-1 mediates eosinophil recruitment and function in pediatric ulcerative colitis. J Immunol. 2008;181(10):7390-9. Epub 2008/11/05. doi: 181/10/7390 [pii]. PubMed PMID: 18981162.
100. Johnson TR, Rothenberg ME, Graham BS. Pulmonary eosinophilia requires interleukin-5, eotaxin-1, and CD4+ T cells in mice immunized with respiratory syncytial virus G glycoprotein. Journal of leukocyte biology. 2008;84(3):748-59. doi: 10.1189/jlb.0907621. PubMed PMID: 18519743; PMCID: PMC2516895.
101. Munitz A, Seidu L, Cole ET, Ahrens R, Hogan SP, Rothenberg ME. Resistin-like molecule alpha decreases glucose tolerance during intestinal inflammation. J Immunol. 2009;182(4):2357-63. Epub 2009/02/10. doi: 182/4/2357 [pii] 10.4049/jimmunol.0803130. PubMed PMID: 19201890.
102. Waddell A, Ahrens R, Steinbrecher K, Donovan B, Rothenberg ME, Munitz A, Hogan SP. Colonic eosinophilic inflammation in experimental colitis is mediated by Ly6C(high) CCR2(+) inflammatory monocyte/macrophage-derived CCL11. J Immunol. 2011;186(10):5993-6003. doi: 10.4049/jimmunol.1003844. PubMed PMID: 21498668; PMCID: 3423906.
103. Wan H, Kaestner KH, Ang SL, Ikegami M, Finkelman FD, Stahlman MT, Fulkerson PC, Rothenberg ME, Whitsett JA. Foxa2 regulates alveolarization and goblet cell hyperplasia. Development. 2004;131(4):953-64. PubMed PMID: 14757645.
104. Brandt EB, Munitz A, Orekov T, Mingler MK, McBride M, Finkelman FD, Rothenberg ME. Targeting IL-4/IL-13 signaling to alleviate oral allergen-induced diarrhea. The Journal of allergy and clinical immunology. 2009;123(1):53-8. Epub 2008/11/11. doi: S0091-6749(08)01742-9 [pii] 10.1016/j.jaci.2008.10.001. PubMed PMID: 18996576.
105. Blanchard C, Stucke EM, Rodriguez-Jimenez B, Burwinkel K, Collins MH, Ahrens A, Alexander ES, Butz BK, Jameson SC, Kaul A, Franciosi JP, Kushner JP, Putnam PE, Abonia JP, Rothenberg ME. A striking local esophageal cytokine expression profile in eosinophilic esophagitis. The Journal of allergy and clinical immunology. 2011;127(1):208-17, 17 e1-7. doi: 10.1016/j.jaci.2010.10.039. PubMed PMID: 21211656; PMCID: 3027004.
106. Rothenberg ME, Wen T, Shik D, Cole ET, Mingler MM, Munitz A. IL-13 receptor alpha1 differentially regulates aeroallergen-induced lung responses. J Immunol. 2011;187(9):4873-80. doi: 10.4049/jimmunol.1004159. PubMed PMID: 21957151; PMCID: 3197875.
107. Wu D, Ahrens R, Osterfeld H, Noah TK, Groschwitz K, Foster PS, Steinbrecher KA, Rothenberg ME, Shroyer NF, Matthaei KI, Finkelman FD, Hogan SP. Interleukin-13 (IL-13)/IL-13 receptor alpha1 (IL-13Ralpha1) signaling regulates intestinal epithelial cystic fibrosis transmembrane conductance regulator

channel-dependent Cl- secretion. J Biol Chem. 2011;286(15):13357-69. Epub 2011/02/10. doi: 10.1074/jbc.M110.214965. PubMed PMID: 21303908; PMCID: PMC3075682.
108. Lim EJ, Lu TX, Blanchard C, Rothenberg ME. Epigenetic regulation of the IL-13-induced human eotaxin-3 gene by CREB-binding protein-mediated histone 3 acetylation. J Biol Chem. 2011;286(15):13193-204. Epub 2011/02/18. doi: 10.1074/jbc.M110.210724. PubMed PMID: 21325281; PMCID: PMC3075666.
109. Rosa-Rosa L, Zimmermann N, Bernstein JA, Rothenberg ME, Khurana Hershey GK. The R576 IL-4 receptor alpha allele correlates with asthma severity. The Journal of allergy and clinical immunology. 1999;104(5):1008-14.
110. Nikolaidis NM, Zimmermann N, King NE, Mishra A, Pope SM, Finkelman FD, Rothenberg ME. Trefoil factor-2 is an allergen-induced gene regulated by Th2 cytokines and STAT6 in the lung. Am J Respir Cell Mol Biol. 2003;29(4):458-64. Epub 2003/04/19. doi: 10.1165/rcmb.2002-0309OC. PubMed PMID: 12702542.
111. Zimmermann N, Hershey GK, Foster PS, Rothenberg ME. Chemokines in asthma: cooperative interaction between chemokines and IL-13. The Journal of allergy and clinical immunology. 2003;111(2):227-42; quiz 43. PubMed PMID: 12589338.
112. Zimmermann N, King NE, Laporte J, Yang M, Mishra A, Pope SM, Muntel EE, Witte DP, Pegg AA, Foster PS, Hamid Q, Rothenberg ME. Dissection of experimental asthma with DNA microarray analysis identifies arginase in asthma pathogenesis. J Clin Invest. 2003;111(12):1863-74.
113. King NE, Zimmermann N, Pope SM, Fulkerson PC, Nikolaidis NM, Mishra A, Witte DP, Rothenberg ME. Expression and regulation of a disintegrin and metalloproteinase (ADAM) 8 in experimental asthma. Am J Respir Cell Mol Biol. 2004;31(3):257-65. Epub 2004/04/17. doi: 10.1165/rcmb.2004-0026OC. PubMed PMID: 15087305.
114. Blanchard C, Mishra A, Saito-Akei H, Monk P, Anderson I, Rothenberg ME. Inhibition of human interleukin-13-induced respiratory and oesophageal inflammation by anti-human-interleukin-13 antibody (CAT-354). Clin Exp Allergy. 2005;35(8):1096-103. PubMed PMID: 16120093.
115. Finkelman FD, Rothenberg ME, Brandt EB, Morris SC, Strait RT. Molecular mechanisms of anaphylaxis: lessons from studies with murine models. The Journal of allergy and clinical immunology. 2005;115(3):449-57; quiz 58. PubMed PMID: 15753886.
116. Finkelman FD, Yang M, Perkins C, Schleifer K, Sproles A, Santeliz J, Bernstein JA, Rothenberg ME, Morris SC, Wills-Karp M. Suppressive effect of IL-4 on IL-13-induced genes in mouse lung. J Immunol. 2005;174(8):4630-8. Epub 2005/04/09. doi: 174/8/4630 [pii]. PubMed PMID: 15814686.
117. Zimmermann N, Doepker MP, Witte DP, Stringer KF, Fulkerson PC, Pope SM, Brandt EB, Mishra A, King NE, Nikolaidis NM, Wills-Karp M, Finkelman FD, Rothenberg ME. Expression and regulation of small proline-rich protein 2 in allergic inflammation. Am J Respir Cell Mol Biol. 2005;32(5):428-35. Epub 2005/02/26. doi: 10.1165/rcmb.2004-0269OC. PubMed PMID: 15731505.
118. Brandt EB, Scribner TA, Akei HS, Rothenberg ME. Experimental gastrointestinal allergy enhances pulmonary responses to specific and unrelated allergens. The Journal of allergy and clinical immunology. 2006;118(2):420-7. PubMed PMID: 16890767.
119. Fulkerson PC, Fischetti CA, Hassman LM, Nikolaidis NM, Rothenberg ME. Persistent Effects Induced by IL-13 in the Lung. Am J Respir Cell Mol Biol. 2006;35(3):337-46. PubMed PMID: 16645178.
120. Yang M, Rangasamy D, Matthaei KI, Frew AJ, Zimmmermann N, Mahalingam S, Webb DC, Tremethick DJ, Thompson PJ, Hogan SP, Rothenberg ME, Cowden WB, Foster PS. Inhibition of arginase I activity by RNA interference attenuates IL-13-induced airways hyperresponsiveness. J Immunol. 2006;177(8):5595-603. Epub 2006/10/04. doi: 177/8/5595 [pii]. PubMed PMID: 17015747.
121. McGraw DW, Elwing JM, Fogel KM, Wang WC, Glinka CB, Mihlbachler KA, Rothenberg ME, Liggett SB. Crosstalk between Gi and Gq/Gs pathways in airway smooth muscle regulates bronchial contractility and relaxation. J Clin Invest. 2007;117(5):1391-8. Epub 2007/04/07. doi: 10.1172/JCI30489. PubMed PMID: 17415415; PMCID: PMC1838924.
122. Mishra A, Wang M, Schlotman J, Nikolaidis NM, DeBrosse CW, Karow ML, Rothenberg ME. Resistin-like molecule-beta is an allergen-induced cytokine with inflammatory and remodeling activity in the murine lung. Am J Physiol Lung Cell Mol Physiol. 2007;293(2):L305-13. PubMed PMID: 17545488.

123. Munitz A, Bachelet I, Finkelman FD, Rothenberg ME, Levi-Schaffer F. CD48 is critically involved in allergic eosinophilic airway inflammation. Am J Respir Crit Care Med. 2007;175(9):911-8. PubMed PMID: 17290046.
124. Brandt EB, Mingler MK, Stevenson MD, Wang N, Khurana Hershey GK, Whitsett JA, Rothenberg ME. Surfactant protein D alters allergic lung responses in mice and human subjects. The Journal of allergy and clinical immunology. 2008;121(5):1140-7 e2. PubMed PMID: 18355911.
125. Herbert DR, Orekov T, Perkins C, Rothenberg ME, Finkelman FD. IL-4R alpha expression by bone marrow-derived cells is necessary and sufficient for host protection against acute schistosomiasis. J Immunol. 2008;180(7):4948-55. PubMed PMID: 18354220.
126. Rothenberg ME. 2007 E. Mead Johnson award: scientific pursuit of the allergy problem. Pediatr Res. 2008;64(1):110-5. Epub 2008/04/17. doi: 10.1203/PDR.0b013e3181794507. PubMed PMID: 18414146.
127. Herbert DR, Yang JQ, Hogan SP, Groschwitz K, Khodoun M, Munitz A, Orekov T, Perkins C, Wang Q, Brombacher F, Urban JF, Jr., Rothenberg ME, Finkelman FD. Intestinal epithelial cell secretion of RELM-beta protects against gastrointestinal worm infection. J Exp Med. 2009;206(13):2947-57. Epub 2009/12/10. doi: jem.20091268 [pii] 10.1084/jem.20091268. PubMed PMID: 19995957; PMCID: 2806463.
128. Lu TX, Munitz A, Rothenberg ME. MicroRNA-21 is up-regulated in allergic airway inflammation and regulates IL-12p35 expression. J Immunol. 2009;182(8):4994-5002. Epub 2009/04/04. doi: 10.4049/jimmunol.0803560. PubMed PMID: 19342679; PMCID: PMC4280862.
129. Blanchard C, Stucke EM, Burwinkel K, Caldwell JM, Collins MH, Ahrens A, Buckmeier BK, Jameson SC, Greenberg A, Kaul A, Franciosi JP, Kushner JP, Martin LJ, Putnam PE, Abonia JP, Wells SI, Rothenberg ME. Coordinate interaction between IL-13 and epithelial differentiation cluster genes in eosinophilic esophagitis. J Immunol. 2010;184(7):4033-41. Epub 2010/03/09. doi: jimmunol.0903069 [pii] 10.4049/jimmunol.0903069. PubMed PMID: 20208004.
130. Finkelman FD, Hogan SP, Hershey GK, Rothenberg ME, Wills-Karp M. Importance of cytokines in murine allergic airway disease and human asthma. J Immunol. 2010;184(4):1663-74. Epub 2010/02/05. doi: 184/4/1663 [pii] 10.4049/jimmunol.0902185. PubMed PMID: 20130218.
131. Herbert DR, Orekov T, Roloson A, Ilies M, Perkins C, O'Brien W, Cederbaum S, Christianson DW, Zimmermann N, Rothenberg ME, Finkelman FD. Arginase I suppresses IL-12/IL-23p40-driven intestinal inflammation during acute schistosomiasis. J Immunol. 2010;184(11):6438-46. Epub 2010/05/21. doi: jimmunol.0902009 [pii] 10.4049/jimmunol.0902009. PubMed PMID: 20483789.
132. Sherrill JD, Rothenberg ME. Genetic dissection of eosinophilic esophagitis provides insight into disease pathogenesis and treatment strategies. The Journal of allergy and clinical immunology. 2011;128(1):23-32; quiz 3-4. doi: 10.1016/j.jaci.2011.03.046. PubMed PMID: 21570716; PMCID: 3129465.
133. Munitz A, Cole ET, Karo-Atar D, Finkelman FD, Rothenberg ME. Resistin-like molecule-alpha regulates IL-13-induced chemokine production but not allergen-induced airway responses. Am J Respir Cell Mol Biol. 2012;46(5):703-13. doi: 10.1165/rcmb.2011-0391OC. PubMed PMID: 22246861; PMCID: 3359904.
134. Collison A, Hatchwell L, Verrills N, Wark PA, de Siqueira AP, Tooze M, Carpenter H, Don AS, Morris JC, Zimmermann N, Bartlett NW, Rothenberg ME, Johnston SL, Foster PS, Mattes J. The E3 ubiquitin ligase midline 1 promotes allergen and rhinovirus-induced asthma by inhibiting protein phosphatase 2A activity. Nature medicine. 2013;19(2):232-7. Epub 2013/01/22. doi: 10.1038/nm.3049. PubMed PMID: 23334847.
135. Hirano I, Collins MH, Assouline-Dayan Y, Evans L, Gupta S, Schoepfer AM, Straumann A, Safroneeva E, Grimm M, Smith H, Tompkins CA, Woo A, Peach R, Frohna P, Gujrathi S, Penenberg DN, Li C, Opiteck GJ, Olson A, Aranda R, Rothenberg ME, Dellon ES, Group HS. RPC4046, a Monoclonal Antibody Against IL13, Reduces Histologic and Endoscopic Activity in Patients With Eosinophilic Esophagitis. Gastroenterology. 2018. Epub 2018/11/06. doi: 10.1053/j.gastro.2018.10.051. PubMed PMID: 30395812.
136. Dellon ES, Collins MH, Rothenberg ME, Assouline-Dayan Y, Evans L, Gupta S, Schoepfer A, Straumann A, Safroneeva E, Rodriguez C, Minton N, Hua SY, Hirano I. Long-Term Efficacy and Tolerability of RPC4046 in an Open-Label Extension Trial of Patients With Eosinophilic Esophagitis. Clin Gastroenterol Hepatol. 2020. Epub 2020/03/25. doi: 10.1016/j.cgh.2020.03.036. PubMed PMID: 32205221.
137. Hirano I, Collins MH, Assouline-Dayan Y, Evans L, Gupta S, Schoepfer AM, Straumann A, Safroneeva E, Grimm M, Smith H, Tompkins CA, Woo A, Peach R, Frohna P, Gujrathi S, Penenberg DN, Li C, Opiteck GJ, Olson A, Aranda R, Rothenberg ME, Dellon ES, Group HS. RPC4046, a Monoclonal

Antibody Against IL13, Reduces Histologic and Endoscopic Activity in Patients With Eosinophilic Esophagitis. Gastroenterology. 2019;156(3):592-603 e10. Epub 2018/11/06. doi: 10.1053/j.gastro.2018.10.051. PubMed PMID: 30395812.

138. Dellon ES, Charriez CM, Zhang S, Falk GW, Oliva S, Ma C, Siffledeen J, Schroeder S, Philpott H, Vanuytsel T, Abe Y, Li K, Zema CL, Venkatasamy A, Yeshokumar AK, Oh YS, Schoepfer A. Cendakimab in Adults and Adolescents with Eosinophilic Esophagitis. NEJM Evid. 2025;4(10):EVIDoa2500095. Epub 20250923. doi: 10.1056/EVIDoa2500095. PubMed PMID: 40985784.
139. Caldwell JM, Ballaban AY, Li J, Maddux R, Harris S, Dellon ES, Rothenberg ME. Cendakimab (anti-IL-13) administration improves esophageal gene expression in eosinophilic esophagitis. The Journal of allergy and clinical immunology. 2026;157(1):118-30 e7. Epub 20251009. doi: 10.1016/j.jaci.2025.08.032. PubMed PMID: 41067281.
140. Hirano I, Dellon ES, Hamilton JD, Collins MH, Peterson K, Chehade M, Schoepfer AM, Safroneeva E, Rothenberg ME, Falk GW, Assouline-Dayan Y, Zhao Q, Chen Z, Swanson BN, Pirozzi G, Mannent L, Graham NMH, Akinlade B, Stahl N, Yancopoulos GD, Radin A. Efficacy of Dupilumab in a Phase 2 Randomized Trial of Adults With Active Eosinophilic Esophagitis. Gastroenterology. 2020;158(1):111-22 e10. Epub 2019/10/09. doi: 10.1053/j.gastro.2019.09.042. PubMed PMID: 31593702.
141. Bitton A, Avlas S, Reichman H, Itan M, Karo-Atar D, Azouz NP, Rozenberg P, Diesendruck Y, Nahary L, Rothenberg ME, Benhar I, Munitz A. A key role for IL-13 signaling via the type 2 IL-4 receptor in experimental atopic dermatitis. Sci Immunol. 2020;5(44). Epub 2020/02/16. doi: 10.1126/sciimmunol.aaw2938. PubMed PMID: 32060143.
142. Abonia JP, Franciosi JP, Rothenberg ME. TGF-beta1: Mediator of a feedback loop in eosinophilic esophagitis--or should we really say mastocytic esophagitis? The Journal of allergy and clinical immunology. 2010;126(6):1205-7. Epub 2010/12/08. doi: 10.1016/j.jaci.2010.10.031. PubMed PMID: 21134572; PMCID: PMC3220165.
143. Abonia JP, Rudman Spergel AK, Hirano I, Shoda T, Zhang X, Martin LJ, Mukkada VA, Putnam PE, Blacklidge M, Neilson D, Collins MH, Yang GY, Capocelli KE, Foote H, Eby M, Dong S, Aceves SS, Rothenberg ME, Consortium of Eosinophilic Gastrointestinal Disease R. Losartan Treatment Reduces Esophageal Eosinophilic Inflammation in a Subset of Eosinophilic Esophagitis. J Allergy Clin Immunol Pract. 2024;12(9):2427-38 e3. Epub 20240725. doi: 10.1016/j.jaip.2024.07.011. PubMed PMID: 39059581; PMCID: PMC11552403.
144. Blanchard C, Mingler MK, McBride M, Putnam PE, Collins MH, Chang G, Stringer K, Abonia JP, Molkentin JD, Rothenberg ME. Periostin facilitates eosinophil tissue infiltration in allergic lung and esophageal responses. Mucosal Immunol. 2008;1(4):289-96. Epub 2008/12/17. doi: mi200815 [pii] 10.1038/mi.2008.15. PubMed PMID: 19079190.
145. Blanchard C, Wang N, Rothenberg ME. Eosinophilic esophagitis: pathogenesis, genetics, and therapy. The Journal of allergy and clinical immunology. 2006;118(5):1054-9. Epub 2006/11/08. doi: 10.1016/j.jaci.2006.07.038. PubMed PMID: 17088129.
146. Konikoff MR, Blanchard C, Kirby C, Buckmeier BK, Cohen MB, Heubi JE, Putnam PE, Rothenberg ME. Potential of blood eosinophils, eosinophil-derived neurotoxin, and eotaxin-3 as biomarkers of eosinophilic esophagitis. Clin Gastroenterol Hepatol. 2006;4(11):1328-36. Epub 2006/10/25. doi: 10.1016/j.cgh.2006.08.013. PubMed PMID: 17059896.
147. Rothenberg ME. Biology and treatment of eosinophilic esophagitis. Gastroenterology. 2009;137(4):1238-49. Epub 2009/07/15. doi: S0016-5085(09)01156-1 [pii] 10.1053/j.gastro.2009.07.007. PubMed PMID: 19596009.
148. Jensen ET, Kuhl JT, Martin LJ, Langefeld CD, Dellon ES, Rothenberg ME. Early-life environmental exposures interact with genetic susceptibility variants in pediatric patients with eosinophilic esophagitis. The Journal of allergy and clinical immunology. 2017. doi: 10.1016/j.jaci.2017.07.010. PubMed PMID: 29029802.
149. Wen T, Aronow BJ, Rochman Y, Rochman M, Kc K, Dexheimer PJ, Putnam P, Mukkada V, Foote H, Rehn K, Darko S, Douek D, Rothenberg ME. Single-cell RNA sequencing identifies inflammatory tissue T cells in eosinophilic esophagitis. J Clin Invest. 2019;129(5):2014-28. Epub 2019/04/09. doi: 10.1172/JCI125917. PubMed PMID: 30958799; PMCID: PMC6486341.

150. Dellon ES, Collins MH, Bredenoord AJ, Philpott H, Biedermann L, Dulcine M, Nguyen-Cleary T, Su C, Yu J, Tan H, Cataldi F, Wu J, Wang W, Clax P, Woolcott JC, Hirano I. Etrasimod as a treatment for eosinophilic oesophagitis (VOYAGE): a double-blind, placebo-controlled, randomised, phase 2 trial. Lancet Gastroenterol Hepatol. 2025;10(7):622-33. Epub 20250514. doi: 10.1016/S2468-1253(25)00062-7. PubMed PMID: 40381637.
151. Rothenberg ME, Spergel JM, Sherrill JD, Annaiah K, Martin LJ, Cianferoni A, Gober L, Kim C, Glessner J, Frackelton E, Thomas K, Blanchard C, Liacouras C, Verma R, Aceves S, Collins MH, Brown-Whitehorn T, Putnam PE, Franciosi JP, Chiavacci RM, Grant SF, Abonia JP, Sleiman PM, Hakonarson H. Common variants at 5q22 associate with pediatric eosinophilic esophagitis. Nat Genet. 2010;42(4):289-91. Epub 2010/03/09. doi: 10.1038/ng.547. PubMed PMID: 20208534; PMCID: PMC3740732.
152. Sherrill JD, Gao PS, Stucke EM, Blanchard C, Collins MH, Putnam PE, Franciosi JP, Kushner JP, Abonia JP, Assa'ad AH, Kovacic MB, Biagini Myers JM, Bochner BS, He H, Hershey GK, Martin LJ, Rothenberg ME. Variants of thymic stromal lymphopoietin and its receptor associate with eosinophilic esophagitis. The Journal of allergy and clinical immunology. 2010;126(1):160-5 e3. Epub 2010/07/14. doi: S0091-6749(10)00734-7 [pii] 10.1016/j.jaci.2010.04.037. PubMed PMID: 20620568; PMCID: 2904342.
153. Picozzi VJ, Abrams RA, Decker PA, Traverso W, O'Reilly EM, Greeno E, Martin RC, Wilfong LS, Rothenberg ML, Posner MC, Pisters PW, American College of Surgeons Oncology G. Multicenter phase II trial of adjuvant therapy for resected pancreatic cancer using cisplatin, 5-fluorouracil, and interferon-alfa-2b-based chemoradiation: ACOSOG Trial Z05031. Ann Oncol. 2011;22(2):348-54. Epub 2010/07/31. doi: 10.1093/annonc/mdq384. PubMed PMID: 20670978; PMCID: PMC3030467.
154. Rochman Y, Kotliar M, Ben-Baruch Morgenstern N, Barski A, Wen T, Rothenberg ME. TSLP shapes the pathogenic responses of memory CD4(+) T cells in eosinophilic esophagitis. Sci Signal. 2023;16(802):eadg6360. Epub 20230912. doi: 10.1126/scisignal.adg6360. PubMed PMID: 37699081; PMCID: PMC10602003.
155. Travers J, Rochman M, Caldwell JM, Besse JA, Miracle CE, Rothenberg ME. IL-33 is induced in undifferentiated, non-dividing esophageal epithelial cells in eosinophilic esophagitis. Sci Rep. 2017;7(1):17563. doi: 10.1038/s41598-017-17541-5. PubMed PMID: 29242581; PMCID: PMC5730585.
156. Travers J, Rochman M, Miracle CE, Habel JE, Brusilovsky M, Caldwell JM, Rymer JK, Rothenberg ME. Chromatin regulates IL-33 release and extracellular cytokine activity. Nat Commun. 2018;9(1):3244. Epub 2018/08/16. doi: 10.1038/s41467-018-05485-x. PubMed PMID: 30108214; PMCID: PMC6092330.
157. Owen WF, Rothenberg ME, Petersen J, Weller PF, Silberstein D, Sheffer AL, Stevens RL, Soberman RJ, Austen KF. Interleukin 5 and phenotypically altered eosinophils in the blood of patients with the idiopathic hypereosinophilic syndrome. J Exp Med. 1989;170(1):343-8. Epub 1989/07/01. doi: 10.1084/jem.170.1.343. PubMed PMID: 2787385; PMCID: PMC2189380.
158. Rothenberg ME, Petersen J, Stevens RL, Silberstein DS, McKenzie DT, Austen KF, Owen WF, Jr. IL-5-dependent conversion of normodense human eosinophils to the hypodense phenotype uses 3T3 fibroblasts for enhanced viability, accelerated hypodensity, and sustained antibody-dependent cytotoxicity. J Immunol. 1989;143(7):2311-6. Epub 1989/10/01. PubMed PMID: 2506282.
159. Post TW, Bozic CR, Rothenberg ME, Luster AD, Gerard N, Gerard C. Molecular characterization of two murine eosinophil beta chemokine receptors. J Immunol. 1995;155(11):5299-305. Epub 1995/12/01. PubMed PMID: 7594543.
160. Mishra A, Hogan SP, Brandt EB, Rothenberg ME. An etiological role for aeroallergens and eosinophils in experimental esophagitis. J Clin Invest. 2001;107(1):83-90. Epub 2001/01/03. doi: 10.1172/JCI10224. PubMed PMID: 11134183; PMCID: PMC198543.
161. Aizawa H, Zimmermann N, Carrigan PE, Lee JJ, Rothenberg ME, Bochner BS. Molecular analysis of human Siglec-8 orthologs relevant to mouse eosinophils: identification of mouse orthologs of Siglec-5 (mSiglec-F) and Siglec-10 (mSiglec-G). Genomics. 2003;82(5):521-30.
162. Khaldoyanidi S, Sikora L, Broide DH, Rothenberg ME, Sriramarao P. Constitutive overexpression of IL-5 induces extramedullary hematopoiesis in the spleen. Blood. 2003;101(3):863-8.

163. Garrett JK, Jameson SC, Thomson B, Collins MH, Wagoner LE, Freese DK, Beck LA, Boyce JA, Filipovich AH, Villanueva JM, Sutton SA, Assa'ad AH, Rothenberg ME. Anti-interleukin-5 (mepolizumab) therapy for hypereosinophilic syndromes. The Journal of allergy and clinical immunology. 2004;113(1):115-9.
164. Rothenberg ME. Eosinophilic gastrointestinal disorders (EGID). The Journal of allergy and clinical immunology. 2004;113(1):11-28.
165. Stein ML, Rothenberg ME. Hypereosinophilic syndromes and new therapeutic approaches including anti-IL-5. Expert Rev Clin Immunol. 2005;1(4):633-44. doi: 10.1586/1744666X.1.4.633. PubMed PMID: 20477604.
166. Sutton SA, Assa'ad AH, Rothenberg ME. Anti-IL-5 and hypereosinophilic syndromes. Clin Immunol. 2005;115(1):51-60. PubMed PMID: 15870021.
167. Brandt EB, Zimmermann N, Muntel EE, Yamada Y, Pope SM, Mishra A, Hogan SP, Rothenberg ME. The alpha4bbeta7-integrin is dynamically expressed on murine eosinophils and involved in eosinophil trafficking to the intestine. Clin Exp Allergy. 2006;36(4):543-53. PubMed PMID: 16630161.
168. Rothenberg ME, Hogan SP. The eosinophil. Annu Rev Immunol. 2006;24:147-74. PubMed PMID: 16551246.
169. Yamada Y, Rothenberg ME, Lee AW, Akei HS, Brandt EB, Williams DA, Cancelas JA. The FIP1L1-PDGFRA fusion gene cooperates with IL-5 to induce murine hypereosinophilic syndrome (HES)/chronic eosinophilic leukemia (CEL)-like disease. Blood. 2006;107(10):4071-9. PubMed PMID: 16418325.
170. Fulkerson PC, Rothenberg ME. Origin, regulation and physiological function of intestinal oeosinophils. Best Pract Res Clin Gastroenterol. 2008;22(3):411-23. doi: 10.1016/j.bpg.2007.10.023. PubMed PMID: 18492563; PMCID: PMC2706084.
171. Mishra A, Wang M, Pemmaraju VR, Collins MH, Fulkerson PC, Abonia JP, Blanchard C, Putnam PE, Rothenberg ME. Esophageal remodeling develops as a consequence of tissue specific IL-5-induced eosinophilia. Gastroenterology. 2008;134(1):204-14. PubMed PMID: 18166354.
172. Yamada Y, Sanchez-Aguilera A, Brandt EB, McBride M, Al-Moamen NJ, Finkelman FD, Williams DA, Cancelas JA, Rothenberg ME. FIP1L1/PDGFRalpha synergizes with SCF to induce systemic mastocytosis in a murine model of chronic eosinophilic leukemia/hypereosinophilic syndrome. Blood. 2008;112(6):2500-7. Epub 2008/06/10. doi: 10.1182/blood-2007-11-126268. PubMed PMID: 18539901.
173. Zimmermann N, McBride ML, Yamada Y, Hudson SA, Jones C, Cromie KD, Crocker PR, Rothenberg ME, Bochner BS. Siglec-F antibody administration to mice selectively reduces blood and tissue eosinophils. Allergy. 2008;63(9):1156-63. Epub 2008/08/14. doi: ALL1709 [pii] 10.1111/j.1398-9995.2008.01709.x. PubMed PMID: 18699932.
174. Ogbogu PU, Bochner BS, Butterfield JH, Gleich GJ, Huss-Marp J, Kahn JE, Leiferman KM, Nutman TB, Pfab F, Ring J, Rothenberg ME, Roufosse F, Sajous MH, Sheikh J, Simon D, Simon HU, Stein ML, Wardlaw A, Weller PF, Klion AD. Hypereosinophilic syndrome: a multicenter, retrospective analysis of clinical characteristics and response to therapy. The Journal of allergy and clinical immunology. 2009;124(6):1319-25 e3. Epub 2009/11/17. doi: 10.1016/j.jaci.2009.09.022. PubMed PMID: 19910029; PMCID: PMC2829669.
175. Rosenwasser LJ, Rothenberg ME. IL-5 pathway inhibition in the treatment of asthma and Churg-Strauss syndrome. The Journal of allergy and clinical immunology. 2010;125(6):1245-6. Epub 2010/06/02. doi: S0091-6749(10)00690-1 [pii]10.1016/j.jaci.2010.04.022. PubMed PMID: 20513522.
176. Lacy P, Willetts L, Kim JD, Lo AN, Lam B, Maclean EI, Moqbel R, Rothenberg ME, Zimmermann N. Agonist activation of f-actin-mediated eosinophil shape change and mediator release is dependent on Rac2. Int Arch Allergy Immunol. 2011;156(2):137-47. doi: 10.1159/000322597. PubMed PMID: 21576984; PMCID: PMC3104871.
177. Spergel JM, Rothenberg ME, Collins MH, Furuta GT, Markowitz JE, Fuchs G, 3rd, O'Gorman MA, Abonia JP, Young J, Henkel T, Wilkins HJ, Liacouras CA. Reslizumab in children and adolescents with eosinophilic esophagitis: results of a double-blind, randomized, placebo-controlled trial. The Journal of allergy and clinical immunology. 2012;129(2):456-63, 63 e1-3. Epub 2011/12/31. doi: 10.1016/j.jaci.2011.11.044. PubMed PMID: 22206777.
178. Lu TX, Lim EJ, Itskovich S, Besse JA, Plassard AJ, Mingler MK, Rothenberg JA, Fulkerson PC, Aronow BJ, Rothenberg ME. Targeted ablation of miR-21 decreases murine eosinophil progenitor cell growth. PLoS One. 2013;8(3):e59397. doi: 10.1371/journal.pone.0059397. PubMed PMID: 23533623; PMCID: PMC3606295.

179. Roufosse FE, Kahn JE, Gleich GJ, Schwartz LB, Singh AD, Rosenwasser LJ, Denburg JA, Ring J, Rothenberg ME, Sheikh J, Haig AE, Mallett SA, Templeton DN, Ortega HG, Klion AD. Long-term safety of mepolizumab for the treatment of hypereosinophilic syndromes. The Journal of allergy and clinical immunology. 2013;131(2):461-7 e1-5. doi: 10.1016/j.jaci.2012.07.055. PubMed PMID: 23040887; PMCID: PMC3558744.
180. Roufosse F, Kahn JE, Rothenberg ME, Wardlaw AJ, Klion AD, Kirby SY, Gilson MJ, Bentley JH, Bradford ES, Yancey SW, Steinfeld J, Gleich GJ, group HESMs. Efficacy and safety of mepolizumab in hypereosinophilic syndrome: A phase III, randomized, placebo-controlled trial. The Journal of allergy and clinical immunology. 2020. Epub 2020/09/22. doi: 10.1016/j.jaci.2020.08.037. PubMed PMID: 32956756.
181. Proper SP, Dwyer AT, Appiagyei A, Felton JM, Ben-Baruch Morgenstern N, Marlman JM, Kotliar M, Barski A, Troutman TD, Rothenberg ME, Mersha TB, Azouz NP. Aryl hydrocarbon receptor and IL-13 signaling crosstalk in human keratinocytes and atopic dermatitis. Front Allergy. 2024;5:1323405. Epub 20240126. doi: 10.3389/falgy.2024.1323405. PubMed PMID: 38344408; PMCID: PMC10853333.
182. Gao PS, Shimizu K, Grant AV, Rafaels N, Zhou LF, Hudson SA, Konno S, Zimmermann N, Araujo MI, Ponte EV, Cruz AA, Nishimura M, Su SN, Hizawa N, Beaty TH, Mathias RA, Rothenberg ME, Barnes KC, Bochner BS. Polymorphisms in the sialic acid-binding immunoglobulin-like lectin-8 (Siglec-8) gene are associated with susceptibility to asthma. Eur J Hum Genet. 2010;18(6):713-9. Epub 2010/01/21. doi: ejhg2009239 [pii]10.1038/ejhg.2009.239. PubMed PMID: 20087405.
183. Wen T, Mingler MK, Blanchard C, Wahl B, Pabst O, Rothenberg ME. The pan-B cell marker CD22 is expressed on gastrointestinal eosinophils and negatively regulates tissue eosinophilia. J Immunol. 2012;188(3):1075-82. doi: 10.4049/jimmunol.1102222. PubMed PMID: 22190185; PMCID: PMC3262961.
184. Dellon ES, Peterson KA, Murray JA, Falk GW, Gonsalves N, Chehade M, Genta RM, Leung J, Khoury P, Klion AD, Hazan S, Vaezi M, Bledsoe AC, Durrani SR, Wang C, Shaw C, Chang AT, Singh B, Kamboj AP, Rasmussen HS, Rothenberg ME, Hirano I. Anti-Siglec-8 Antibody for Eosinophilic Gastritis and Duodenitis. N Engl J Med. 2020;383(17):1624-34. Epub 2020/10/22. doi: 10.1056/NEJMoa2012047. PubMed PMID: 33085861.
185. Munitz A, Cole ET, Beichler A, Groschwitz K, Ahrens R, Steinbrecher K, Willson T, Han X, Denson L, Rothenberg ME, Hogan SP. Paired immunoglobulin-like receptor B (PIR-B) negatively regulates macrophage activation in experimental colitis. Gastroenterology. 2010;139(2):530-41. Epub 2010/04/20. doi: 10.1053/j.gastro.2010.04.006. PubMed PMID: 20398663; PMCID: PMC3423916.