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).

Current* Pipeline of Diagnostic and Therapeutic CCED Research

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Target</th>
<th>CCED Research</th>
<th>Therapeutic Agent</th>
<th>CCED Clinical Trials</th>
<th>Phase of Development</th>
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<tbody>
<tr>
<td><strong>Suppress inflammatory response</strong></td>
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<tr>
<td>Systemic corticosteroids</td>
<td>Immune system</td>
<td>1-3</td>
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<td>Off-label clinical use</td>
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<td>Topical corticosteroids</td>
<td>Local inflammation</td>
<td>1-3</td>
<td>Flovent</td>
<td>4, 5 and Current Trial (enrollment closed)</td>
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<td>Budesonide</td>
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<td><strong>Blockade of eosinophil recruitment</strong></td>
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<tr>
<td>Chemokine inhibition</td>
<td>CCR3</td>
<td>6-33</td>
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<tr>
<td>Chemokine inhibition</td>
<td>CCL11 (eotaxin-1)</td>
<td>6, 7, 9, 11, 14, 17, 19, 22-24, 27, 28, 30, 32-74</td>
<td>Bertilimumab</td>
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<tr>
<td>Cytokine inhibition</td>
<td>IL-13</td>
<td>1, 3, 14, 15, 17, 24, 26, 27, 30, 31, 53, 56, 57, 59, 63, 67, 72, 75-109</td>
<td>QAX576</td>
<td>Current Trial (enrollment closed)</td>
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<td>Cytokine receptor inhibition</td>
<td>IL-13R</td>
<td>27, 76, 78, 79, 88, 100, 102, 104, 105</td>
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<td>Cytokine receptor inhibition</td>
<td>IL-4R</td>
<td>27, 31, 72, 75-77, 99, 100, 102, 103, 110, 111</td>
<td>Dupilumab</td>
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<td>Chemokine inhibition</td>
<td>CCL26 (eotaxin-3)</td>
<td>1, 3, 21, 26, 77, 80, 101, 112-114</td>
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<td>Adhesion molecule inhibition</td>
<td>Periostin</td>
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<td>Category</td>
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<td>Evidence</td>
<td>Stage</td>
<td>Notes</td>
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<td><strong>Adhesion molecule inhibition</strong></td>
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<td><strong>Anti-inflammatory</strong></td>
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<td><strong>Impaired barrier function</strong></td>
<td>Improve barrier function</td>
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<td><strong>Inhibition of eosinophil survival</strong></td>
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<td>IL-5</td>
<td>7, 11, 13-15, 22, 25, 26, 29-31, 38, 44, 46, 47, 49, 50, 53, 55-61, 63, 68, 70, 72, 73, 77, 102, 109, 118-140</td>
<td>Mepolizumab 25, 29, 126, 135</td>
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<td>Reslizumab 138 and Current Trial (enrollment closed)</td>
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<td><strong>Eosinophil depletion</strong></td>
<td>IL-5R-α</td>
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<td>Benralizumab</td>
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<td><strong>Activation of inhibitory receptor</strong></td>
<td>Siglec-8</td>
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<td><strong>Activation of inhibitory receptor</strong></td>
<td>PIRB</td>
<td>28, 143</td>
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<td><strong>Inhibition of eosinophil activation</strong></td>
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<td><strong>Cytokine inhibition</strong></td>
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<td>AMG 157, II</td>
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<td><strong>Molecular diagnostics</strong></td>
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<td>Eosinophil Esophagitis (EoE) 1, 105, 107, 146-148, Clinical validation</td>
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*As of December 2015*


