



Genetic susceptibility to asthma

Gene/locus	Chromosomal location [#]	Gene name	Mechanism
Candidate gene association studies			
<i>TLR2</i>	4q31.3	Toll-like receptor 2	Pathogen recognition/innate immunity
<i>CD14</i>	5q31.3	Cluster of differentiation 14: monocyte antigen	LPS signalling
<i>IL10</i>	1q32.1	Interleukin-10	Anti-inflammatory/regulatory T-cells
<i>TGFβ</i>	19q13.2	Transforming growth factor- β	Anti-inflammatory/airway remodelling
<i>HLA-DR</i>	6p21.32	Human leukocyte antigens	Antigen presentation
<i>HLA-DQ</i>	6p21.32	Human leukocyte antigens	Antigen presentation
<i>HLA-DP</i>	6p21.32	Human leukocyte antigens	Antigen presentation
<i>IL4</i>	5q31.1	Interleukin-4	Th2 responses/IgE production
<i>IL13</i>	5q31.1	Interleukin-13	Mucus production/IgE production
<i>IL4R</i>	16p12.1	Interleukin-4 receptor	Th2 responses/IgE production
<i>STAT6</i>	12q13.3	Signal transducer and activator of transcription 6	Transcription factor (Th2 responses)
Genome-wide association studies			
<i>ORMDL3</i>	17q21	Orosomucoid like 3	Unknown
<i>IL2R</i>	10p15.1	Interleukin-2 receptor	T-cell proliferation Th1 responses
<i>IL18R1</i>	2q12.1	Interleukin-18 receptor 1	T-cell proliferation Th1 responses
<i>IL13</i>	5q31.1	Interleukin-13	Mucus production/IgE production
<i>IL33</i>	9p24.1	Interleukin-33	Innate immunity/danger signal
Linkage studies and positional cloning			
<i>ADAM33</i>	20p13	A disintegrin and metalloproteinase	Airway remodelling/bronchial hyperresponsiveness
<i>DPP10</i>	2q14.1	Dipeptidyl peptidase 10	
<i>GPRA</i>		G-protein coupled receptor for asthma susceptibility	Unknown

This is a partial list of selected genes intended as an illustrative example of genetic susceptibility to asthma. LPS: lipopolysaccharide; Th: T-helper type 2; IgE: immunoglobulin E. #: p refers to the short arm of the chromosome. q refers to the long arm of the chromosome. The location numbers after p and q reflect the relative distance to the centromeres of the chromosomes (numbering by convention).