Table 1 Autoinflammatory disorders

Disease	Affected cells	Functional defects	Associated features	Inheritance	Genetic defects	OMIM	HGNC symbol	HGNC ID(s)	ENSEMBL ID
Familial Mediterranean fever	N + M	Decreased production of pyrin permits ASC-induced IL-1 processing and inflammation after subclinical serosal injury; macrophage apoptosis decreased	Recurrent fever, serositis, and inflammation responsive to colchicines; predisposes to vasculitis and inflammatory bowel disease	AR	*MEFV*	249100, 608107	**MEFV**	**6998**	**ENSG00000103313**
TNF receptor–associated periodic syndrome (TRAPS)	N + M	Mutations of 55-kd TNF receptor leading to diminished soluble cytokine receptor available to bind TNF	Recurrent fever, serositis, rash, and ocular or joint inflammation	AD	*TNFRSF1A*	142680, 191190	**TNFRSF1A**	**11916**	**ENSG00000067182**
Hyper-IgD syndrome		Mevalonate kinase deficiency affecting cholesterol synthesis; pathogenesis of disease unclear	Periodic fever and leukocytosis with **high IgD** levels	AR	*MVK*	260920, 251170	*MVK*	**7530**	**ENSG00000110921**
Muckle-Wells syndrome*	N + M	Defect in cryopyrin, involved in leukocyte apoptosis and NF-κB signaling and IL-1 processing	Urticaria, SNHL, amyloidosis; responsive to IL-1R/antagonist (Anakinra)	AD	*CIAS1* (also called PYPAF1 or NALP3)	191900, 606416,	**NLRP3**	**16400**	**ENSG00000162711**
Familial cold autoinflammatory syndrome*	N + M	Same as above	Nonpruritic urticaria, arthritis, chills, fever, and leukocytosis after cold exposure; responsive to IL-1R/antagonist (Anakinra)	AD	*CIAS1*	120100	**NLRP3**	**16400**	**ENSG00000162711**
Neonatal-onset multisystem inflammatory disease (NOMID) or chronic infantile neurologic cutaneous and articular syndrome (CINCA)*	N + chondrocytes	Same as above	Neonatal-onset rash, chronic meningitis, and arthropathy with fever and inflammation responsive to IL-1R antagonist (Anakinra)	AD	*CIAS1*	607115	**NLRP3**	**16400**	**ENSG00000162711**
TNF receptor–associated periodic syndrome (TRAPS)	N + M	Mutations of 55-kd TNF receptor leading to diminished soluble cytokine receptor available to bind TNF	Recurrent fever, serositis, rash, and ocular or joint inflammation	AD	*TNFRSF1A*	142680, 191190	*TNFRSF1A*	11916	ENSG00000067182 http://www.genenames.org/useful/symbol-report-documentation - C
(b) Early onset inflammatory bowel disease	Monocyte/ macrophage, activated T cells	Mutation in IL-10 or IL-10 receptor leads to increase of TNFγ and other proinflammatory cytokines	Early onset enterocolitis enteric fistulas, perianal abscesses, chronic folliculitis	AR	Mutations in *IL10*,*IL10RA*, or *IL10RB*	146933, 124092	**IL10**	**5962**	**ENSG00000136634**
						146933	*IL10RA*	5964	ENSG000001103**24**
						123889	*IL10RB*	5965	ENSG000002436**46**
Pyogenic sterile arthritis, pyoderma gangrenosum, acne (PAPA) syndrome	Hematopoietic tissues, upregulated in activated T cells	Disordered actin reorganization leading to compromised physiologic signaling during inflammatory response	Destructive arthritis, inflammatory skin rash, myositis	AD	*PSTPIP1* (also called C2BP1)	604416, 606347	**PSTPIP1**	**9580**	**ENSG00000140368**
Blau syndrome	M	Mutations in nucleotide binding site of CARD15, possibly disrupting interactions with lipopolysaccharides and NF-κB signalling, mutations only found exon 4 in NOD2 in Blau	Uveitis, granulomatous synovitis, camptodactyly, rash, and cranial neuropathies; 30% have Crohn's disease	AD	*NOD2* (also called CARD15)	186580, 605956	**NOD2**	**5331**	**ENSG00000167207**
Majeed syndrome	N and other bone marrow cells		Chronic recurrent multifocal osteomyelitis and congenital dyserythropoietic anemia with hypochromia and microcytosis, growth failure joint contractures, exzema, neutrophilic dermatosis (Sweet syndrome), Recurrent fevers (every 3rd week)	AR	*LPIN2*	609628, 605519	**LPIN2**	**14450**	**ENSG00000101577**
DIRA Deficiency of theinterleukin1 receptor antagonist	N + M	Mutations in the IL1 receptor antagonist allows unopposed action of interleukin1	Neonatal onset of sterile multifocal osteomyelitis, periostitis, and pustulosis	AR	*IL1RN*	612852, 147679	**IL1RN**	**6000**	**ENSG00000136689**
CANDLE, Chronic atypical neutrophilic dermatosis with lipodystrophy and elevated temperature (CANDLE syndrome)			NAKAJO and CANDLE syndrome, mutations in the same gene. Chronic atypical neutrophilic dermatosis with lipodystrophy and elevated temperature	AR		177046, 256040	*PSMB8*	**9545**	*multiple*

ASC, Apoptosis-associated speck-like protein with a caspase recruitment domain; *AR*, autosomal recessive inheritance; *MEFV*, Meditteranean fever; *PMNs*, polymorphonuclear cells; *AD*, autosomal dominant inheritance; *TNFRSF1A*, tumor necrosis factor receptor soluble factor 1A; *NF-κB*, nuclear factor κB; *N*, neutrophils; *M*, monocytes/macrophages; *L*, lymphocytes; *NK*, natural killer cells; *SNHL*, sensorineural hearing loss; *CIAS1*, cold-induced autoinflammatory syndrome 1; *PSTPIP1*, proline/serine/threonine phosphatase-interacting protein 1; *CD2BP1*, CD2 binding protein 1; *CARD*, caspase recruitment domain; *NOD2*, nucleotide-binding oligomerization domain protein 2.

*All 3 syndromes are associated with similar *CIAS1* mutations. Disease phenotype in any individual appears to depend on modifying effects of other genes and environmental factors.