

NOTEWORTHY

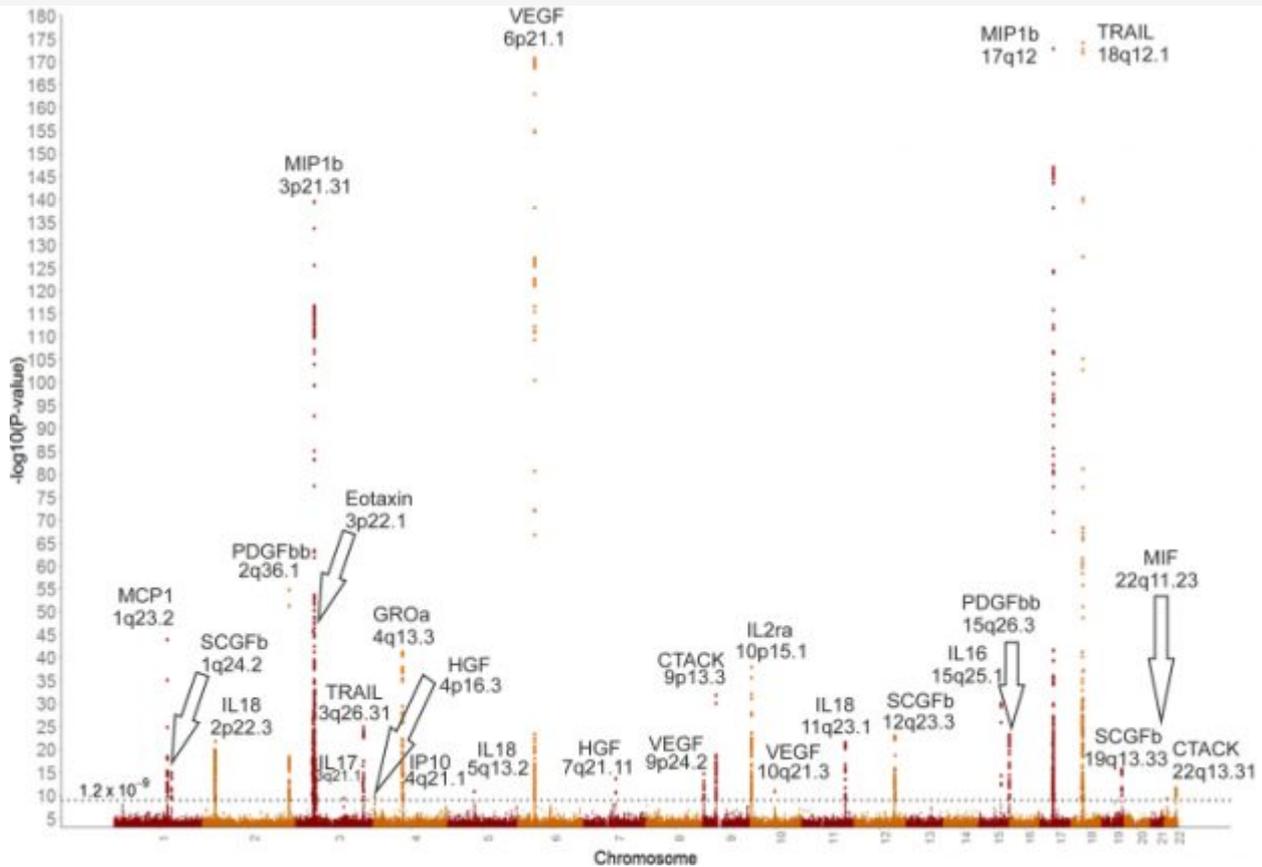
COVID-19 GENETICS – ANY ROLE OF MIP1B?

23.10.2020

The first GWAS of severe COVID-19 infection was published in the [NEJM](#) with the main hit at rs11385942 at locus 3p21.31, a region linked by the authors to LZTFL1. The GWAS catalogue points to MIP1B (Macrophage Inflammatory Protein 1 beta, MIP-1b, CCL4) level that has been mapped there as well.

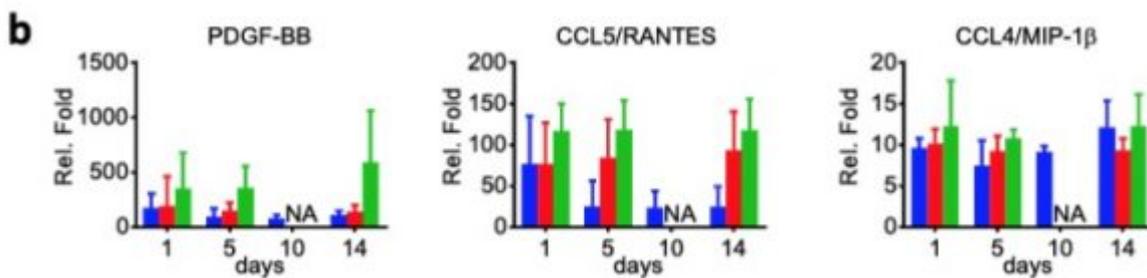
Variant and risk allele	P-value	P-value annotation	RAF	OR	Beta	CI	Mapped gene	Reported trait	Trait(s)	Study accession	Location
rs1129133-T	4 x 10 ⁻⁷		NR	1.0765421	-	NR	LZTFL1	Multiple sclerosis	multiple sclerosis	GCST000937	3:45829483
rs492149-T	8 x 10 ⁻¹³		0.4159960000000003	1.0313327	-	[1.02-1.04]	LZTFL1	Mouth ulcers	Oral ulcer	GCST001839	3:45814568
rs11385942-GA	1 x 10 ⁻¹⁰		0.08	1.77	-	[1.49-2.11]	LZTFL1	Severe COVID-19 infection with respiratory failure (analysis 1)	COVID-19	GCST0000255	3:45834968
rs11385942-GA	9 x 10 ⁻¹²		0.08	2.11	-	[1.70-2.61]	LZTFL1	Severe COVID-19 infection with respiratory failure (analysis 1)	COVID-19	GCST0000256	3:45834868
rs17764931-T	2 x 10 ⁻¹³		NR	-	-	-	LZTFL1	Eosinophil counts	eosinophil count	GCST001065	3:45876723
rs492142-G	3 x 10 ⁻⁶	(GA)	0.15877178241480027	-	0.2773 unit decrease	[0.16-0.36]	SLC6A25, LZTFL1	Methadone dose in opioid dependence	opioid dependence, methadone dose measurement	GCST004136	3:45810884
rs17712835-C	1 x 10 ⁻¹⁰		0.963447	1.0780385	-	[1.05-1.1]	SLC6A25, LZTFL1	Mouth ulcers	Oral ulcer	GCST001839	3:45804430
rs8136777-T	3 x 10 ⁻¹⁴	(CCL4)	NR	-	0.474605 unit increase	[0.35-0.6]	LZTFL1, CCR5	Blood protein levels	CCL4 measurement	GCST000696	3:45889513
rs7613549-T x rs398042-T	5 x 10 ⁻¹⁰		NR	-	-	-	LZTFL1 x B3/TA - MRPS24	Neurofibrillary tangles (SNP x SNP interaction)	neurofibrillary tangles measurement	GCST010343	3:45890777-43634141
rs17765286-G	6 x 10 ⁻¹⁴		NR	-	0.4577 SD units increase	[0.41-0.5]	CCR5, LZTFL1	Macrophage inflammatory protein 1b levels	macrophage inflammatory protein 1b measurement	GCST004433	3:45802153

<https://www.ebi.ac.uk/gwas/genes/LZTFL1>



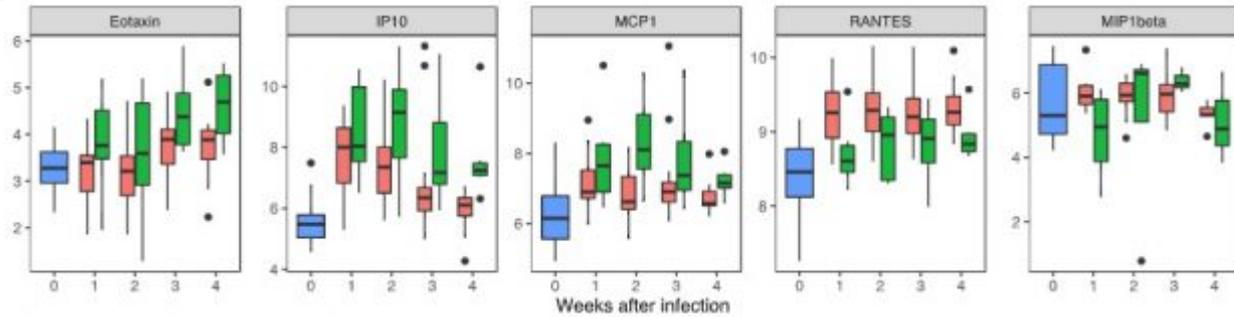
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5223028/>

MIP-1B seems to be [increased in patients with COVID-19](#) as [a study showed that levels of various CCGFs](#), including PDGF-BB, CCL5/RANTES, CCL4/MIP-1 β , IL-9, and TNF- β were up-regulated in COVID-19 patients but negatively correlated to disease severity.



Supplement <https://www.nature.com/articles/s41392-020-0211-1>

Another study measured also [MIP-1B](#) but no major effect



Supplement <https://insight.jci.org/articles/view/139834/sd/1>

A recent [Frontiers review](#) discusses the relationship to the cytokine storm in fatal COVID-19 infection but again no isolated effect. Nevertheless I have a gut feeling from a [1995 Science paper](#) that it could be relevant as it was identified as the major HIV-SF produced by CD8+ T cells (which are so important also in [COVID-19 recovery](#)).

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