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# **Genomic Discoveries Shared Report**

Welcome to Nebula Genomics' curated research report. Stay up to date with the emerging field of personal genomics and explore the latest research content and how it pertains to your genomic data.

ALLELE ASSOCIATED WITH CONDITION: The genetic variant that is described in the research paper as being associated with a condition or trait.

GENOTYPE WITH ESTIMATED ACCURACY: Your two (paternal and maternal) genetic variants at a given position.

#### 11/2018



# C-reactive protein level (Ligthart, 2018)

Symen Ligthart, et al.

The American Journal of Human Genetics

#### Inflammation

#### SUMMARY

Identification of 58 genetic variants associated with the blood level of C-reactive protein, a marker of inflammation.

# **OVERVIEW**

Inflammation is a defense mechanism our body induces as a response to infections. However, chronic inflammation has been associated with many diseases including type 2 diabetes and cardiovascular disease. Inflammation can be assessed by measuring the level of C-reactive protein (CRP) in the blood which are typically increased if there is inflammation in the body. To identify genetic variants associated with the CRP level and therefore inflammation-related disorders, this genome-wide association study examined over 200,000 individuals of European ancestry. The study discovered 58 novel genetic variants, many of which are near genes involved in immune system pathways and metabolic processes in the liver.

# **DID YOU KNOW?**

To reduce chronic inflammation, eat plenty of anti-inflammatory foods, exercise regularly, maintain a healthy weight, and reduce stress levels. [SOURCE]

VARIANT ID	ALLELE ASSOCIATED WITH BLOOD CRP LEVEL①	EFFECT SIZE (BETA/LOG(ODDS RATIO))①	APPROXIMATE EFFECT ALLELE FREQUENCY	STATISTICAL SIGNIFICANCE <sup>®</sup>	YOUR GENOTYPE WITH ESTIMATED ACCURACY
rs2794520	С	0.18	33%	$4.17 \times 10^{-523}$	C/C (99.69%)
rs4420638	А	0.23	18%	$1.23 \times 10^{-305}$	A/A (94.75%)
rs7310409	G	0.14	39%	$2.54 \times 10^{-299}$	G/G (99.97%)
rs1805096	G	0.10	39%	$2.17 \times 10^{-183}$	G/A (99.97%)
rs4129267	С	0.09	39%	$1.20 \times 10^{-129}$	C/T (99.97%)
rs1260326	Т	0.07	39%	$2.72 \times 10^{-92}$	T/C (74.75%)
rs13409371	А	0.05	43%	$5.07 \times 10^{-36}$	G/A (99.95%)
rs2836878 🙌	G	0.04	27%	$7.71 \times 10^{-26}$	G/G (99.94%)
rs4841132	G	0.07	9%	2.00 × 10 <sup>-25</sup>	G/G (99.99%)
rs13233571	С	0.06	12%	2.95 x 10 <sup>-25</sup>	C/C (99.85%)
rs1800961	С	0.11	3%	$4.63 \times 10^{-23}$	N/A
rs10521222	С	0.10	5%	2.06 × 10 <sup>-22</sup>	C/C (99.99%)
rs10925027	Т	0.04	40%	4.25 × 10 <sup>-21</sup>	T/C (99.99%)
rs10778215	Т	0.03	49%	1.86 x 10 <sup>-20</sup>	T/A (82.73%)

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rs1558902 <b>New</b>	А	0.03	41%	5.20 × 10 <sup>-20</sup>	A/A (99.99%)				
rs2239222 <b>NEW</b>	G	0.04	36%	9.87 × 10 <sup>-20</sup>	A/G (67.38%)				
rs9271608 NEW	G	0.04	22%	2.33 × 10 <sup>-17</sup>	G/G (99.97%)				
rs340005	А	0.03	38%	1.01 × 10 <sup>-15</sup>	G/A (78.74%)				
rs2064009 <b>NEW</b>	С	-0.03	42%	2.28 × 10 <sup>-14</sup>	C/T (97.60%)				
rs10512597	Т	-0.04	18%	$4.44 \times 10^{-14}$	C/C (99.98%)				
rs11108056 NEW	G	-0.03	42%	5.42 × 10 <sup>-14</sup>	C/C (85.86%)				
rs6001193	G	-0.03	35%	$6.53 \times 10^{-14}$	A/G (99.66%)				
rs1880241 🙌	G	-0.03	48%	8.41 × 10 <sup>-14</sup>	A/G (98.77%)				
rs1736060 <b>NEW</b>	Т	0.03	60%	$2.60 \times 10^{-13}$	C/C (99.99%)				
rs2293476	С	0.03	23%	8.27 × 10 <sup>-13</sup>	G/C (99.98%)				
rs10838687 🙌	G	-0.03	22%	9.12 × 10 <sup>-13</sup>	T/T (99.98%)				
rs1490384 <b>NEW</b>	Т	-0.03	51%	2.65 × 10 <sup>-12</sup>	C/T (93.26%)				
rs10832027 🙌	G	-0.03	33%	$4.43 \times 10^{-12}$	A/A (99.13%)				
rs469772 <b>NEW</b>	Т	-0.03	19%	$5.54 \times 10^{-12}$	C/C (98.91%)				
rs2852151	Α	0.03	40%	1.36 × 10 <sup>-11</sup>	G/A (94.51%)				
rs9385532 <b>NEW</b>	Т	-0.03	33%	$1.90 \times 10^{-11}$	T/C (99.95%)				
rs1441169 <b>NEW</b>	G	-0.03	53%	$2.27 \times 10^{-11}$	G/G (98.87%)				
rs9284725 🚾	С	0.03	24%	$7.34 \times 10^{-11}$	A/A (95.92%)				
rs12995480 ໜ	Т	-0.03	17%	$1.24 \times 10^{-10}$	C/C (99.99%)				
rs112635299 ໜ	Т	-0.11	2%	$2.10 \times 10^{-10}$	N/A				
rs687339 🔤	Т	-0.03	78%	$2.80 \times 10^{-10}$	T/T (99.20%)				
rs12202641 🚾	Т	-0.02	39%	$3.00 \times 10^{-10}$	C/T (99.97%)				
rs4092465 腕	А	-0.03	35%	$3.11 \times 10^{-10}$	G/G (68.02%)				
rs75460349 <b>NEW</b>	А	0.09	97%	$4.50 \times 10^{-10}$	A/A (99.99%)				
rs4246598 <b>New</b>	Α	0.02	46%	5.11 × 10 <sup>-10</sup>	C/A (99.99%)				
rs2315008 NEW	Т	-0.02	31%	$5.36 \times 10^{-10}$	G/G (99.20%)				
rs2352975 <b>NEW</b>	С	0.03	30%	$6.43 \times 10^{-10}$	T/T (99.82%)				
rs643434 (NEW)	Α	0.02	37%	$1.02 \times 10^{-9}$	N/A				
rs12960928 🚾	С	0.02	27%	1.91 × 10 <sup>-9</sup>	T/T (99.99%)				
rs1051338 <b>New</b>	G	0.02	31%	$2.27 \times 10^{-9}$	T/T (96.52%)				
rs1582763 (NEW)	Α	-0.02	37%	$2.37 \times 10^{-9}$	G/G (99.61%)				
rs1514895 <b>NEW</b>	А	-0.03	71%	$2.70 \times 10^{-9}$	A/G (96.18%)				
rs1189402 <b>NEW</b>	А	0.03	62%	$3.90 \times 10^{-9}$	A/G (99.92%)				
rs7121935 <b>NEW</b>	Α	-0.02	38%	5.28 x 10 <sup>-9</sup>	N/A				
rs17658229 (NEW)	С	0.06	5%	$5.50 \times 10^{-9}$	T/C (98.92%)				
rs2710804 NEW	С	0.02	37%	1.30 × 10 <sup>-8</sup>	T/T (69.30%)				
rs9611441 <b>NEW</b>	С	-0.02	49%	$1.40 \times 10^{-8}$	C/C (99.33%)				
rs2891677 (NEW)	С	-0.02	46%	1.59 × 10 <sup>-8</sup>	T/T (99.92%)				
rs4774590 NEW	Α	-0.02	35%	2.71 × 10 <sup>-8</sup>	G/A (74.57%)				
rs178810 <b>NEW</b>	Т	0.02	56%	$2.95 \times 10^{-8}$	T/T (99.97%)				
rs7795281 <b>NEW</b>	Α	0.03	76%	3.10 × 10 <sup>-8</sup>	A/A (97.81%)				
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N/A indicates variants that could not be imputed using the 1000 genomes project datasets and variants that have a frequency of < 5%. These are limitations of low-coverage whole-genome sequencing. Please consider upgrading to high-coverage whole-genome sequencing that will be available soon.

# ADDITIONAL RESOURCES

<u>CRP</u>

Inflammatory Response (Video)

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