ПРИЛОЖЕНИЯ

к статье Е.А. Антроповой, И.В. Яцыка, П.С. Деменкова, Т.В. Иванисенко, В.А. Иванисенко «Выявление белков, регулирующих фенотип-ассоциированные гены макрофагов группы М2: биоинформатический анализ»

Таблица S1. Список фенотип-ассоциированных генов M1, M2a, M2b, M2c, M2d фенотипов макрофагов. Красным выделены белки, которые авторы публикаций называют маркерами.

Название гена (полное название, синонимы)	Литературный источник
M1	
ARG2 (Arginase-2, ARGI2)	Martín-Fernández et al., 2016
CCL2 *(C-C motif chemokine 2, MCP-1)*	De Boer et al., 2015 Lee et al., 2016
CCL3 *(C-C motif chemokine 3, MIP-1a)*	Cassol et al., 2009 Baitsch et al., 2011
CCL4 *(C-C motif chemokine 4, MIP-1b)*	Cassol et al., 2009 Bardi et al., 2018
CCL5 *(C-C motif chemokine 5, RANTES)*	Chhor et al., 2013 De Boer et al., 2015 Engström et al., 2013 Martinez et al., 2006
CCL7 (C-C motif chemokine 2, MCP-3)	Engström et al., 2013 Juknat et al., 2013
CCL8 (C-C motif chemokine 8, MCP-2)	Engström et al., 2013 Martinez et al., 2006 Gabrusiewicz et al., 2016
CCL15 (C-C motif chemokine 15, MIP-5)	Engström et al., 2013 Martinez et al., 2006
CCL19 (C-C motif chemokine 19, MIP-3B)	Furusato et al., 2011 Martinez et al., 2006
CCL20 (C-C motif chemokine 20, MIP-3A)	Martinez et al., 2006
CCR2 *(C-C chemokine receptor type 2, CD192, CMKBR2)*	Otsuka et al., 2018 Lee et al., 2016
CCR7 (C-C chemokine receptor type 7, CMKBR7, EBI1, EVI1)	Hu et al., 2012 Martinez et al., 2006 Lewis et al., 2019
CD11C (Integrin alpha-X, ITGAX)	Islam et al., 2021 Ai et al., 2021 Alamri et al., 2022
CD38 (ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase 1)	Jablonski et al., 2015 Islam et al., 2021 Alamri et al., 2022
CD40 (Tumor necrosis factor receptor superfamily member 5, TNFRSF5)	Juknat et al., 2013
CD64 *(High affinity immunoglobulin gamma Fc receptor I, FCgRI, FCGR1A, FCGR1A FCG1, FCGR1, IGFR1)*	Fowler et al., 2017 Alamri et al., 2022 Tarique et al., 2015
CD80 *(T-lymphocyte activation antigen CD80, B7)*	Islam et al., 2021 Ai et al., 2021 Trombetta et al., 2018 Wu et al., 2021
CD86 *(T-lymphocyte activation antigen CD86, B70, BU63, CTLA-4 counter-receptor B7.2, FUN-1)*	Trombetta et al., 2018 Moretti et al., 2016 Liu et al., 2017 Nishikoba et al., 2020
CSF2 (Granulocyte-macrophage colony-stimulating factor, GM-CSF)	Melton et al., 2015
CXCL1 *(GRO, GROA, MSGAa)*	Chhor et al., 2013 Engström et al., 2013 Melton et al., 2015
CXCL2 *(Growth-regulated alpha protein, GRO, MIP2a)*	Bardi et al., 2018
CXCL5 *(C-X-C motif chemokine 5, ENA-78)*	Bardi et al., 2018
CXCL9 *(C-X-C motif chemokine 9, CMK, MIG, SCYB9)*	Engström et al., 2013 Martinez et al., 2006 Da Silva et al., 2021

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Название гена (полное название, синонимы)	Литературный источник
CXCL10 *(C-X-C motif chemokine 10, IP-10, INP10, SCYB10)*	Martinez et al., 2006 Wu et al., 2021 Nakanishi et al., 2011 Martinez, Gordon, 2014 Da Silva et al., 2021
CXCL11 (C-X-C motif chemokine 11, ITAC, SCYB11, SCYB9B)	Lewis et al., 2019 Furusato et al., 2011 Martinez et al., 2006
FAM26F (Calcium homeostasis modulator protein 6, CAHM6, Family with sequence similarity 26, member F)	Fujiwara et al., 2016
FCGR2B *(Low affinity immunoglobulin gamma Fc region receptor II-b, CD32, FCG2, IGFR2)*	Moretti et al., 2016 Liu et al., 2017
FCGR3A *(Low affinity immunoglobulin gamma Fc region receptor III-A, CD16 CD16A, FCG3, FCGR3, IGFR)*	Liu et al., 2017 Kurtzberg et al., 2015
GBP2 (Guanylate-binding protein 2)	Fujiwara et al., 2016
GBP5 *(Guanylate-binding protein 5, GTP-binding protein 5)*	Fujiwara et al., 2016
HLA-DRA *(HLA class II histocompatibility antigen, DR alpha chain)*	Wu et al., 2021 Buddingh et al., 2011
HMGB1 (high-mobility group box 1)	Lotze et al., 2005
IDO1 *(Indoleamine 2,3-dioxygenase 1, IDO, INDO, 123OI)*	Unuvar Purcu et al., 2022
IFNA (Interferon alpha)	Anders et al., 2022
IFNB (Interferon beta, Fibroblast interferon)	Juknat et al., 2013
IFNG (Interferon gamma)	Martín-Fernández et al., 2016 Melton et al., 2015 Ferrante et al., 2013
IL1A (Interleukin-1 alpha, Hematopoietin-1)	Juknat et al., 2013
IL1B *(Interleukin-1 beta)*	Chhor et al., 2013 De Boer et al., 2015 Wu et al., 2021 Lewis et al., 2019
IL1R1 (Interleukin-1 receptor type 1, IL1RA, IL1RT1)	Huang et al., 2018
IL2RA *(IL-2 receptor subunit alpha,TAC antigen, p55, CD25, Il1rn)*	Martinez et al., 2006 MacParland et al., 2017
IL3 (Interleukin-3)	Melton et al., 2015
IL6 *(Interleukin-6)*	Chhor et al., 2013 De Boer et al., 2015 Engström et al., 2013 Martinez et al., 2006 Wu et al., 2021
IL7R (Interleukin-7 receptor subunit alpha, IL7RA, CD127)	Martinez et al., 2006
IL8 (Interleukin-8, CXCL8)	Engström et al., 2013
IL12B *(Interleukin-12 subunit beta)*	Chhor et al., 2013 Fowler et al., 2017 Martinez et al., 2006
IL15 (Interleukin-15)	Gabrusiewicz et al., 2016
IL15RA *(Interleukin-15 receptor subunit alpha, CD215)*	Ait-Lounis et al., 2015 Benoit et al., 2008 Gabrusiewicz et al., 2016
IL17A (Interleukin-17A, CTLA8, IL17)	Hirani et al., 2021
IL18 *(Interleukin-1, CXCL8)*	De Boer et al., 2015
IL23A (Interleukin-23 subunit alpha)	Furusato et al., 2011 Gabrusiewicz et al., 2016
IRF1 (Interferon regulatory factor 1)	Martinez et al., 2006 Chu et al., 2021 Gabrusiewicz et al., 2016
IRF4 (Interferon regulatory factor 4)	Gabrusiewicz et al., 2016

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Название гена (полное название, синонимы)	Литературный источник
IRF7 (Interferon regulatory factor 7)	Gabrusiewicz et al., 2016
ISG20 (Interferon-stimulated gene 20 kDa protein)	Szulzewsky et al., 2015
KCNN2 (Small conductance calcium-activated potassium channel protein 2)	Gabrusiewicz et al., 2016
LAG3 (Lymphocyte-activation gene 3)	Fujiwara et al., 2016
MARCO *(SCARA2, Macrophage receptor MARCO Alternative name(s): Macrophage receptor with collagenous structure, Scavenger receptor class A member 2)*	Gaiser et al., 2021
MET (Hepatocyte growth factor receptor, HGF receptor, proto-oncogene c-Met, Scatter factor receptor, SF receptor tyrosine-protein kinase Met)	Nishikoba et al., 2020 Gabrusiewicz et al., 2016
MIF (Macrophage migration inhibitory factor, GLIF, MMIF)	Jetten et al., 2014
MMP13 (Collagenase 3, Matrix metalloproteinase-13)	Juknat et al., 2013
NAMPT (Nicotinamide phosphoribosyltransferase, PBEF, Visfatin)	Martinez et al., 2006 Halvorsen et al., 2015
NFKB1 *(Nuclear factor NF-kappa-B p105 subunit)*	De Boer et al., 2015
NOS2 *(Nitric oxide synthase, inducible)*	Chhor et al., 2013 De Boer et al., 2015 Martín-Fernández et al., 2016 Kurtzberg et al., 2015 Nishikoba et al., 2020 Da Silva et al., 2021
PTGS2 *(Prostaglandin G/H synthase 2, COX2, PGH2)*	Chhor et al., 2013 Nasirzade et al., 2021 Baitsch et al., 2011
SOCS3 (Suppressor of cytokine signaling 3)	Arnold et al., 2014 Huang et al., 2018
STAT1 (Signal transducer and activator of transcription 1)	Gabrusiewicz et al., 2016
TIMP1 (Metalloproteinase inhibitor 1)	Melton et al., 2015
THBS1 (thrombospondin-1, TSP1)	Jetten et al., 2014
TLR2 *(Toll-like receptor 2, TIL4)*	Beyer et al., 2012 Trombetta et al., 2018
TLR4 *(Toll-like receptor 4)*	Trombetta et al., 2018 Huang et al., 2018
TNFA *(Tumor necrosis factor, TNFA, TNFSF2)*	Medina-Buelvas et al., 2019 Chhor et al., 2013 De Boer et al., 2015 Engström et al., 2013 Martinez et al., 2006 Wu et al., 2021 Nishikoba et al., 2020
UBD (Ubiquitin D)	Fujiwara et al., 2016
VEGFA (Vascular endothelial growth factor A)	Jetten et al., 2014 Melton et al., 2015
M2a	
ALOX15 (Polyunsaturated fatty acid lipoxygenase ALOX15, 15-LOX, 15-lipoxygenase)	Abrial et al., 2015
ARG1 (Arginase-1)	Chhor et al., 2013 Kisucká et al., 2021 Wang et al., 2021
MYC (Myc proto-oncogene protein, BHLHE39)	Luiz et al., 2020
CADH1 (Cadherin-1, CDHE, UVO)	Yao et al., 2018 Semnani et al., 2011
CCL1 (C-C motif chemokine 1, SCYA1)	Liao et al., 2017
CCL2 (C-C motif chemokine 2, MCP-1)	Chhor et al., 2013 Jetten et al., 2014
CCL7 (C-C motif chemokine 2, MCP-3)	Melton et al., 2015

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Название гена (полное название, синонимы)	Литературный источник
CCL8 (C-C motif chemokine 8, MCP-2)	Makita et al., 2015 Gabrusiewicz et al., 2016
CCL13 *(C-C motif chemokine 13, MCP4, NCC1, SCYA13)*	Abrial et al., 2015
CCL14 *(C-C motif chemokine 14, NCC2, SCYA14)*	Jaguin et al., 2013
CCL15 (C-C motif chemokine 15, Chemokine CC-2, HCC-2, Leukotactin-1, LKN-1, MIP-1 delta, MIP-5, Mrp-2b, NCC-3, MIP5, NCC3, SCYA15)	Semnani et al., 2011
CCL17 *(C-C motif chemokine 17, SCYA17, TARC)*	Shigematsu et al., 2009 Nakamura et al., 2015 Rajput et al., 2018
CCL18 *(C-C motif chemokine 18, AMAC1, DCCK1, MIP4, PARC, SCYA18)*	Martinez-Nunez et al., 2011 Semnani et al., 2011 Rajput et al., 2018
CCL22 *(C-C motif chemokine 22, MDC, SCYA22)*	Abrial et al., 2015 Jaguin et al., 2013 Rajput et al., 2018
CCL23 *(C-C motif chemokine 23, MIP3, MPIF1, SCYA23)*	Novak et al., 2007 Gupta et al., 2018 Rajput et al., 2018
CCL24 *(C-C motif chemokine 24, CK-beta-6, Eotaxin-2, MPIF-2, CCL24, SCYA24)*	Wang et al., 2021 Makita et al., 2015
CCL26 (C-C motif chemokine 26, Eotaxin-3, SCYA26)	Baxter et al., 2020
CCR2 (C-C chemokine receptor type 2, CD192, CMKBR2)	Chhor et al., 2013
CD11B (Cyclin-dependent kinase 11B, ITAM, ITGAM)	Bai et al., 2015 Tarique et al., 2015
CD11C (Integrin alpha-X, ITAX, ITGAX)	Bai et al., 2015
CD23A (Low affinity immunoglobulin epsilon Fc receptor, FCER2, CLEC4J, FCE2, IGEBF)	Martinez-Nunez et al., 2011
CD200R *(Cell surface glycoprotein CD200 receptor 1, MO2R1)*	Koning et al., 2010 Baxter et al., 2020 Huang et al., 2018
CD206 *(MRC1, mannose receptor, MR, MMR)*	Medina-Buelvas et al., 2019 Kisucká et al., 2021 Chhor et al., 2013 Rajput et al., 2018
CD209 *(C-type lectin domain family 4 member L, DC-SIGN)*	Tarique et al., 2015 Martinez-Nunez et al., 2011 Rajput et al., 2018 Gabrusiewicz et al., 2016
CD273 (PDCD1LG2, PD1L2, Programmed cell death 1 ligand 2)	Semnani et al., 2011 Huber et al., 2010 Makita et al., 2015
CD274 (Programmed cell death 1 ligand 1, PD1L1, B7H1)	Semnani et al., 2011
CLEC4A *(C-type lectin domain family 4 member A, CD367, DCIR, LLIR)*	Rajput et al., 2018
CLEC10A (C-type lectin domain family 10 member A, Macrophage lectin 2, CD301, CLECSF13, CLECSF14, HML)	Zhao et al., 2020 Rajput et al., 2018
CSF1R (CSF-1 receptor, M-CSF-R, Proto-oncogene c-Fms, CD115, FMS)	Popova et al., 2011 Gabrusiewicz et al., 2016
CXCR1 (C-X-C chemokine receptor type 1, IL8RA, CD181)	Chhor et al., 2013 Bonecchi et al., 2000
CXCR2 (C-X-C chemokine receptor type 2, CDw128b, GRO/MGSA receptor, High affinity interleukin-8 receptor B, IL-8R B, IL-8 receptor type 2, CD182)	Bonecchi et al., 2000
DECTIN1 *(CLEC7A, Beta-glucan receptor, C-type lectin superfamily member 12, CD369)*	Willment et al., 2003 Rajput et al., 2018 Forrester et al., 2018
EDN1 (Endothelin 1)	Makita et al., 2015
EGR2 (Early growth response protein 2, E3 SUMO-protein ligase EGR2, Zinc finger protein Krox-20, KROX20)	Geng et al., 2020

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Название гена (полное название, синонимы)	Литературный источник
FGF2 (Fibroblast growth factor 2, bFGF, HBGF-2)	Jetten et al., 2014
FN1 (Fibronectin, cold-insoluble globulin, CIG, FINC)	Gratchev et al., 2001
GAL3 (Galectin-3, 35 kDa lectin, CBP 35, GALBP, IgE-binding protein, Mac-2 antigen, ***LGALS3***, ***LEG3****)*	Chhor et al., 2013
HLA-DRA (HLA class II histocompatibility antigen, DR alpha chain)	Court et al., 2017
HLA-DRB1 (HLA class II histocompatibility antigen, DRB1 beta chain)	Court et al., 2017
HLA-DRB3 (HLA class II histocompatibility antigen, DR beta 3 chain)	Court et al., 2017
HLA-DPA1 (HLA class II histocompatibility antigen, DP alpha 1 chain)	Court et al., 2017
HLA-DPB1 (HLA class II histocompatibility antigen, DP beta 1 chain)	Court et al., 2017
HRH1 (Histamine H1 receptor)	Gabrusiewicz et al., 2016
IGF1 (Insulin-like growth factor 1)	Chhor et al., 2013 Jetten et al., 2014
IL1RA *(Interleukin-1 receptor antagonist protein, IL-1R , IL-1Ra, IL-R1, IL1RN, IL1F3)*	Chhor et al., 2013 Kisucká et al., 2021
IL1R2 *(Interleukin-1 receptor type 2, IL1RB)*	Huang et al., 2018
IL4 (Interleukin-4)	Chhor et al., 2013 Melton et al., 2015
IL10 (Interleukin-10)	Medina-Buelvas et al., 2019 Wang et al., 2021
IL27 *(Interleukin-27)*	Sun et al., 2019
IRF4 (Interferon regulatory factor 4)	Cui et al., 2020
KLF2 (Krueppel-like factor 2)	Gabrusiewicz et al., 2016
MMP9 (Matrix metalloproteinase-9)	Gabrusiewicz et al., 2016
MMP14 (Matrix metalloproteinase-9)	Ogburn et al., 2021
MRC2 (C-type mannose receptor 2, CLEC13E, ENDO180, KIAA0709, UPARAP, CD280)	Wu et al., 2016
PGF (Placenta growth factor, PGFL, ***PLGF****)*	Jetten et al., 2014
PPARG *(Peroxisome proliferator-activated receptor gamma)*	Jaguin et al., 2013 Wang et al., 2021
PTGS1 (Prostaglandin G/H synthase 1, COX1, ***PGH1****)*	Abrial et al., 2015
RAMP1 *(Receptor activity-modifying protein 1, CRLR activity-modifying protein 1)*	Fujiwara et al., 2016
Scn3a (sodium channel, voltage-gated, type III, a subunit)	Makita et al., 2015
SOCS1 (Suppressor of cytokine signaling 1, SSI1, TIP3)	Martinez-Nunez et al., 2011
TGFB1 *(Transforming growth factor beta-1)*	Chhor et al., 2013 Jaguin et al., 2013
TGM2 *(Transglutaminase 2)*	Unuvar Purcu et al., 2022 Li et al., 2022 Huang et al., 2018
TIM3 (Hepatitis A virus cellular receptor 2, ***HAVCR2***, ***HAVR2****, TIMD3)*	Spiller et al., 2016
TREM2 (Triggering receptor expressed on myeloid cells 2)	Nakanishi et al., 2011
VEGFA (Vascular endothelial growth factor A, VEGF)	Little et al., 2019
VEGFR1 (Vascular endothelial growth factor receptor 1, FLT1)	Melton et al., 2015
M2b	
CCL1 *(C-C motif chemokine 1, Small-inducible cytokine A1, T lymphocyte-secreted protein I-309,SCYA1)*	Nakamura et al., 2015 Sironi et al., 2006
CCL4 (C-C motif chemokine 4, MIP-1b)	Anders et al., 2022
CCL20 (C-C motif chemokine 20, MIP3A)	Sironi et al., 2006
CD45 (Receptor-type tyrosine-protein phosphatase C, PTPRC)	Yue et al., 2020
CD86 *(T-lymphocyte activation antigen CD86, B70, BU63, CTLA-4 counter-receptor B7.2, FUN-1)*	Hu et al., 2019 Feng et al., 2021 Huang et al., 2018
CD163 *(Scavenger receptor cysteine-rich type 1 protein M130)*	Nakamura et al., 2015

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CD206 (MRC1, mannose receptor, MR, MMR)	Medina-Buelvas et al., 2019 Feng et al., 2021
COX2 (Prostaglandin G/H synthase 2, PTGS2, PGH2)	Kudlik et al., 2016
CXCL3 (C-X-C motif chemokine 3, MIP2B, GRO3),	Sironi et al., 2006
HLA-DRA *(HLA class II histocompatibility antigen, DR alpha chain)*	Edwards et al., 2006 Medina-Buelvas et al., 2019 Huang et al., 2018
IFNA1 (Interferon alpha)	Anders et al., 2022
IL1B (Interleukin-1 beta, IL1F2)	Ohashi et al., 2022
IL1RA (Interleukin-1 receptor antagonist protein, IL-1R , IL-1Ra, IL-R1, IL1RN, IL1F3))	Costantino et al., 2020
IL6 *(Interleukin-6)*	Yue et al., 2017 Huang et al., 2018
IL10 *(Interleukin-10)*	Edwards et al., 2006 Yue et al., 2017 Nakamura et al., 2015
NOS2 (Nitric oxide synthase, inducible	Edwards et al., 2006
RETN (Resistin, FIZZ3, HXCP1, RSTN)	
SIGLEC10 *(Sialic acid-binding Ig-like lectin 10, SIG10)*	Fujiwara et al., 2016
SPHK1 *(Sphingosine kinase 1 , SK1, SPHK, SPK)*	Edwards et al., 2006
TNF *(Tumor necrosis factor, TNFA, TNFSF2)*	Yue et al., 2017 Huang et al., 2018
TNFSF14 *(Tumor necrosis factor ligand superfamily member 14, LIGHT, TNF14)*	Edwards et al., 2006
VEGFA (Vascular endothelial growth factor A)	Anders et al., 2022
M2c	
ARG1 (Arginase-1)	Baxter et al., 2020 Gabrusiewicz et al., 2016
B7H4 (V-set domain-containing T-cell activation inhibitor 1, VTCN1)	Cao et al., 2010
BCL3 *(B-cell lymphoma 3 protein)*	Kim et al., 2019
C1QA (Complement C1q subcomponent subunit A)	Ehrchen et al., 2007
CCL8 (C-C motif chemokine 8, MCP-2)	Makita et al., 2015
CCL16 *(C-C motif chemokine 16, ILINCK, NCC4, SCYA16, HCC-4)*	Hedrick et al., 1998
CCL18 (C-C motif chemokine 18, CCL18 AMAC1, DCCK1, MIP4, PARC, SCYA18)	Porcheray et al., 2005 Park-Min et al., 2005
CCL23 (C-C motif chemokine 23, MIP3, MPIF1, SCYA23)	Park-Min et al., 2005
CCR2 (C-C chemokine receptor type 2, MCP-1-R, CD192)	Kuo et al., 2021
CCR3 (C-C chemokine receptor type 3, CCR3, CMKBR3)	Gabrusiewicz et al., 2016
CCR10 (C-C chemokine receptor type 10)	Angsana et al., 2016
CD11A (Integrin alpha-L, ITGAL, CDK11A)	Bai et al., 2015
CD11B (Cyclin-dependent kinase 11B, ITAM, ITGAM)	Bai et al., 2015
CD11C (Integrin alpha-X, ITAX, ITGAX)	Bai et al., 2015
CD14 (Monocyte differentiation antigen CD14)	Zizzo, Cohen, 2018
CD163 *(Scavenger receptor cysteine-rich type 1 protein M130)*	Hu et al., 2019 Feng et al., 2021 Baxter et al., 2020 Fujiwara et al., 2016
CD204 (Macrophage scavenger receptor types I and II, Macrophage acetylated LDL receptor I and II, Scavenger receptor class A member 1, SCARA1, SR-A1, MSR, MSRE, MTRR)	Miyasato et al., 2017 Gabrusiewicz et al., 2016
CD206 *(MRC1, mannose receptor, MR, MMR)*	Feng et al., 2021 Ehrchen et al., 2007
CD300E (CLM2)	Lurier et al., 2016
CSF1R	Gabrusiewicz et al., 2016
CX3CR1 (CX3C1)	Angsana et al., 2016

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CXCL12 (SDF1)	Gabrusiewicz et al., 2016
CXCL13 (CXC13)	Shigematsu et al., 2009
CXCR4 (C-X-C chemokine receptor type 4, CD184, Fusin, LAP-3)	Gabrusiewicz et al., 2016 Angsana et al., 2016
F5 (FA5)	Lurier et al., 2016
FCRLA	Lurier et al., 2016
FPR1	Lurier et al., 2016
GAS6	Zizzo et al., 2012 Lurier et al., 2016
GXYLT2 (Glucoside xylosyltransferase, GXLT2)	Lurier et al., 2016
HIF1A	Gabrusiewicz et al., 2016
HIF2A (EPAS1)	Gabrusiewicz et al., 2016
JAK3	Lurier et al., 2016
IL1B	Ohashi et al., 2022
IL1RA (IL1R1, IL1RN)	Morganti et al., 2015
IL4R	Kisucká et al., 2021
IL10	Medina-Buelvas et al., 2019 Ehrchen et al., 2007 Huang et al., 2018
IL21R	Park-Min et al., 2005
IRF3	Gabrusiewicz et al., 2016
IRF5	Gabrusiewicz et al., 2016
IRF8	Gabrusiewicz et al., 2016
LIN7A	Lurier. et al., 2016
MAF (Transcription factor Maf, c-Maf)	Gabrusiewicz et al., 2016
MARCO	Lurier et al., 2016 Park-Min. et al., 2005
MCTP2	Lurier et al., 2016
MERTK	Zizzo et al., 2012 Ehrchen et al., 2007
MMP2	Gabrusiewicz et al., 2016
MMP8	Lurier et al., 2016
MM14 (Matrix metalloproteinase-14, MMP14, MTMMP1)	Gabrusiewicz et al., 2016
MRC2 (C-type mannose receptor 2, CLEC13E, ENDO180, KIAA0709, UPARAP, CD280)	Gabrusiewicz et al., 2016
NFKB1 (Nuclear factor NF-kappa-B p105 subunit)	Gabrusiewicz et al., 2016
NOS2 (Nitric oxide synthase, inducible)	Gabrusiewicz et al., 2016
PCOLCE2 (Procollagen C-endopeptidase enhancer 2, PCOC2)	Lurier. et al., 2016
PGF (Placenta growth factor, PGFL, PLGF)	Jetten et al., 2014
PLOD2 (Procollagen-lysine,2-oxoglutarate 5-dioxygenase 2)	Lurier et al., 2016
SEPP1 (Selenoprotein P, SELENOP, SELP, SeP)	Baxter et al., 2020
SERPINA1 (Alpha-1-antitrypsin, A1AT)	Lurier et al., 2016
SH3PXD2B (SH3 and PX domain-containing protein 2B, SPD2B)	Lurier et al., 2016
SLAMF1 (Signaling lymphocytic activation molecule, CD150, SLAM, SLAF1, IPO3)	Lurier et al., 2016
SOCS3 (Suppressor of cytokine signaling 3)	Kisucká et al., 2021 Lurier et al., 2016
SPP1 (Osteopontin, OSTP, SGPP1)	Gabrusiewicz et al., 2016
SRPX2 (Sushi repeat-containing protein SRPX2, SRPUL)	Lurier et al., 2016
STAT1 (Signal transducer and activator of transcription 1)	Park-Min et al., 2005
STAT3 (Signal transducer and activator of transcription 3)	Gabrusiewicz et al., 2016
STAT6 (Signal transducer and activator of transcription 6)	Gabrusiewicz et al., 2016

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TGFB1 *(Transforming growth factor beta-1)*	Kisucká et al., 2021 Medina-Buelvas et al., 2019 Huang et al., 2018
THBS1 (Thrombospondin-1, TSP1)	Jetten et al., 2014
TIMP1 (Metalloproteinase inhibitor 1)	Lurier et al., 2016
TLR1 *(Toll-like receptor 1)*	Park-Min et al., 2005 Huang et al., 2018
TLR2 (Toll-like receptor 2, TIL4)	Gabrusiewicz et al., 2016
TLR4 (Toll-like receptor 4)	Gabrusiewicz et al., 2016
TLR5 (Toll-like receptor 5)	Gabrusiewicz et al., 2016
TLR8 *(Toll-like receptor 8)*	Park-Min et al., 2005 Huang et al., 2018
VCAN (Versican core protein, CSPG2)	Lurier et al., 2016
M2d	
ADORA2 (Adenosine receptor A2a)	Ferrante et al., 2013
Aif1 (allograft inflammatory factor 1)	Biswas et al., 2006
C1qa (complement 1q, polypeptide alpha)	Biswas et al., 2006
C1qg (complement 1q, polypeptide gamma)	Biswas et al., 2006
CCL2 (C-C motif chemokine 2, MCP-1)	Ferrante et al., 2013 Anders et al., 2022 Riabov et al., 2015
CCL3 (C-C motif chemokine 3, MIP-1a)	Anders et al., 2022 Riabov et al., 2015
CCL4 (C-C motif chemokine 4, MIP-1b)	Riabov et al., 2015
CCL5 (C-C motif chemokine 5, RANTES)	Riabov et al., 2015 Biswas et al., 2006
CCL7 (C-C motif chemokine 2, MCP-3)	Benner et al., 2019
CD81 (CD81 antigen, TAPA1, TSPAN28)	Biswas et al., 2006
CD204 *(Macrophage scavenger receptor types I and II, MSR1, SCARA1)*	Shigeoka et al., 2013
CD206 (MRC1, mannose receptor, MR, MMR)	Pradel et al., 2016
COX2 (Prostaglandin G/H synthase 2, PTGS2, PGH2)	Li et al., 2015 Miyasato et al., 2018
CSF3R (G-CSF, CD114, GCSFR, Granulocyte colony-stimulating factor receptor)	Ferrante et al., 2013
CXCL8 (Interleukin-8, IL8)	Hosono et al., 2017
CXCL9 (C-X-C motif chemokine 9, CMK, MIG, SCYB9)	Biswas et al., 2006
CXCL10 (C-X-C motif chemokine 10, IP10)	Riabov et al., 2015 Biswas et al., 2006
CXCL16 (C-X-C motif chemokine 16, SCYB16, SRPSOX)	Biswas et al., 2006
EGF (Pro-epidermal growth factor)	Haque et al., 2019
FGF2 (Fibroblast growth factor 2, bFGF, HBGF-2)	Takase et al., 2016
FGFR1	Takase et al., 2016
GDF15 (Growth Differentiation factor 15, macrophage inhibitory cytokine-1, MIC-1)	Zheng et al., 2021
HLA-DMA (HLA class II histocompatibility antigen, DM alpha chain, DMA, RING6)	Biswas et al., 2006
Idb3 (inhibitor of DNA binding 3, ID3)	Biswas et al., 2006
IDO1 (Indoleamine 2,3-dioxygenase 1, IDO, INDO, 123O1)	Miyasato et al., 2018
IDO2 (Indoleamine 2,3-dioxygenase 2, INDOL1, 123O2)	Miyasato et al., 2018
IL1A (Interleukin-1 alpha, Hematopoietin-1)	Ferrante et al., 2013 Anders et al., 2022
IL1b (Interleukin-1 beta)	Ferrante et al., 2013 Riabov et al., 2015
IL6 (Interleukin-6)	Miyasato et al., 2018

Окончание табл. S1

Название гена (полное название, синонимы)	Литературный источник
IL10 *(Interleukin-10)*	Medina-Buelvas et al., 2019 Ferrante et al., 2013 Huang et al., 2018
ILT3 (Leukocyte immunoglobulin-like receptor subfamily B member 4, LIRB4, LILRB4, LIR5)	Duluc et al., 2009
IRF7 (Interferon regulatory factor 7)	Biswas et al., 2006
LY6A (Lymphocyte antigen 6 complex locus A)	Biswas et al., 2006
LY6E (Lymphocyte antigen 6 complex locus E)	Biswas et al., 2006
MIF (Migration inhibitory factor)	Biswas et al., 2006
MMP2 (Matrix metalloproteinase-2)	Osinsky et al., 2011
MMP9 (Matrix metalloproteinase-9)	Luo et al., 2006
MSR2 (Fc receptor like 2, FCRL2, FCRLS)	Biswas et al., 2006
NCAM1 (neural cell adhesion molecule)	Takase et al., 2016
NOS2 (Nitric oxide synthase, inducible)	Ferrante et al., 2013
PDGFB (Platelet-derived growth factor subunit B, PDGF2, SIS)	Anders et al., 2022
PDL1 (Programmed death-1 ligand 1, PD1L1, CD274)	Miyasato et al., 2018
PDL2 (Programmed death-ligand 2, PDCD1LG2)	Matsubara et al., 2023
COX2 (Prostaglandin G/H synthase 2, PTGS2, PGH2)	Zhang et al., 2022
TBX6 (T-box transcription factor TBX6, T-box 6)	Biswas et al., 2006
TGFB *(transforming growth factor beta-induced, BIGH3)*	Ferrante et al., 2013 Anders et al., 2022 Huang et al., 2018 Biswas et al., 2006
TNFA (Tumor necrosis factor, TNFA, TNFSF2)	Huang et al., 2018 Riabov et al., 2015
VEGFA *(Vascular endothelial growth factor A)*	Medina-Buelvas et al., 2019 Ferrante et al., 2013

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Таблица S2. Сравнительные характеристики протеомных профилей макрофагов M2a, M2b, M2c и M2d, описанных в работе (Li et al., 2022)

	M2a	M2b	M2c	M2d
Всего дифференциально экспрессируемых белков	227	241	217	236
Всего ↑*	118	120	95	124
Всего ↓**	109	121	122	112
Уникальных ↑***	22	11	4	14
Уникальных ↓****	38	43	44	36

↑* Белки с повышенным уровнем экспрессии;
↓** белки с пониженным уровнем экспрессии.
↓*** Уникальные для данного фенотипа макрофагов белки с повышенным уровнем экспрессии;
↓**** уникальные для данного фенотипа макрофагов белки с пониженным уровнем экспрессии.

Таблица S3. Примеры распределения дифференциально экспрессируемых белков, описанных в (Li et al., 2022) по фенотипам макрофагов M2a, M2b, M2c и M2d

	M2a	**M2b**	**M2c**	**M2d**
ACTG1	↑	↑	↑	↑
ACTA1	↑	↑	↑	↑
RHOB	↑	↑	↑	↑
ACOT2	↑	↑	↑	↑
CDK4	↑	↑	↑	↑
HMGA2	↑	↑	↑	↑
POTEKP	↑	↑	↑	-
NAMPT	-	↑	-	↑
IL1B	-	↑	-	↑
CD14	-	↑	-	↑
CXCL10	↑	-	-	↑
NFYB	↑	-	-	-
CCL5	↑	-	-	-
IL1A	-	-	-	↑
PZP	↓	↓	↓	↓
CCND1	↓	↓	↓	-
HSP90AA2P	↓	-	↓	↓
CD38	↓	-	↓	-
GDF15	-	-	-	↓
CXCL8 (IL8)	-	-	↓	-

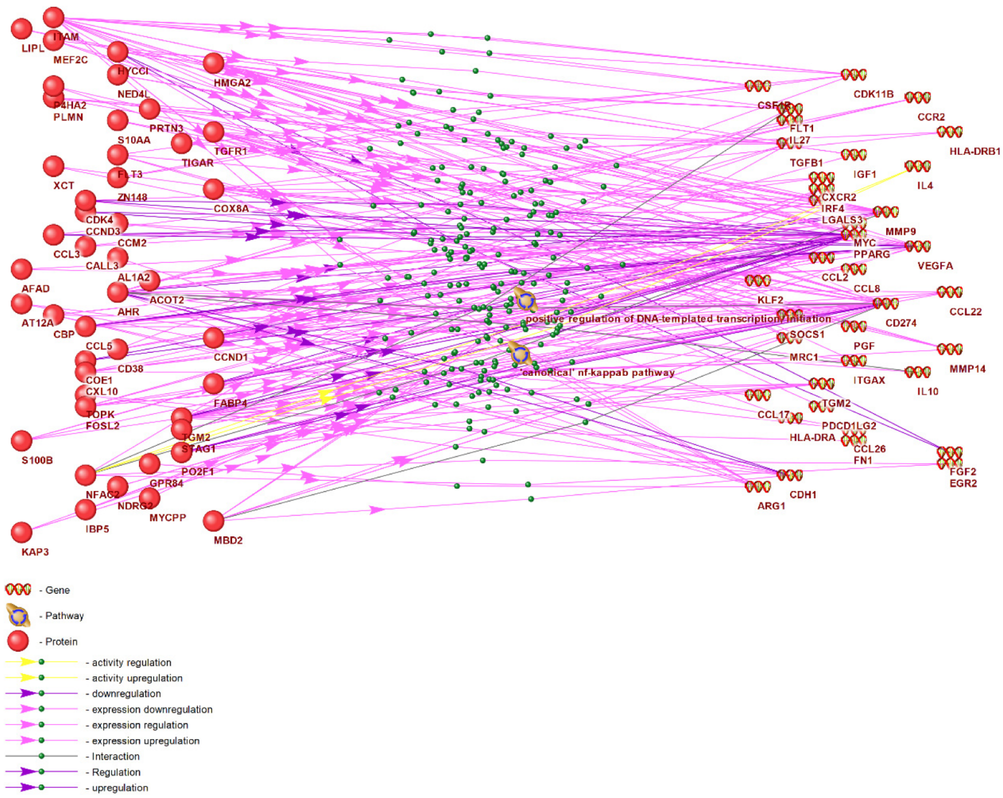

Рисунок S1. Потенциальные регуляторные воздействия дифференциально экспрессируемых белков, взятых из работы (Li et al., 2022), на фенотип-ассоциированные гены в M2a.

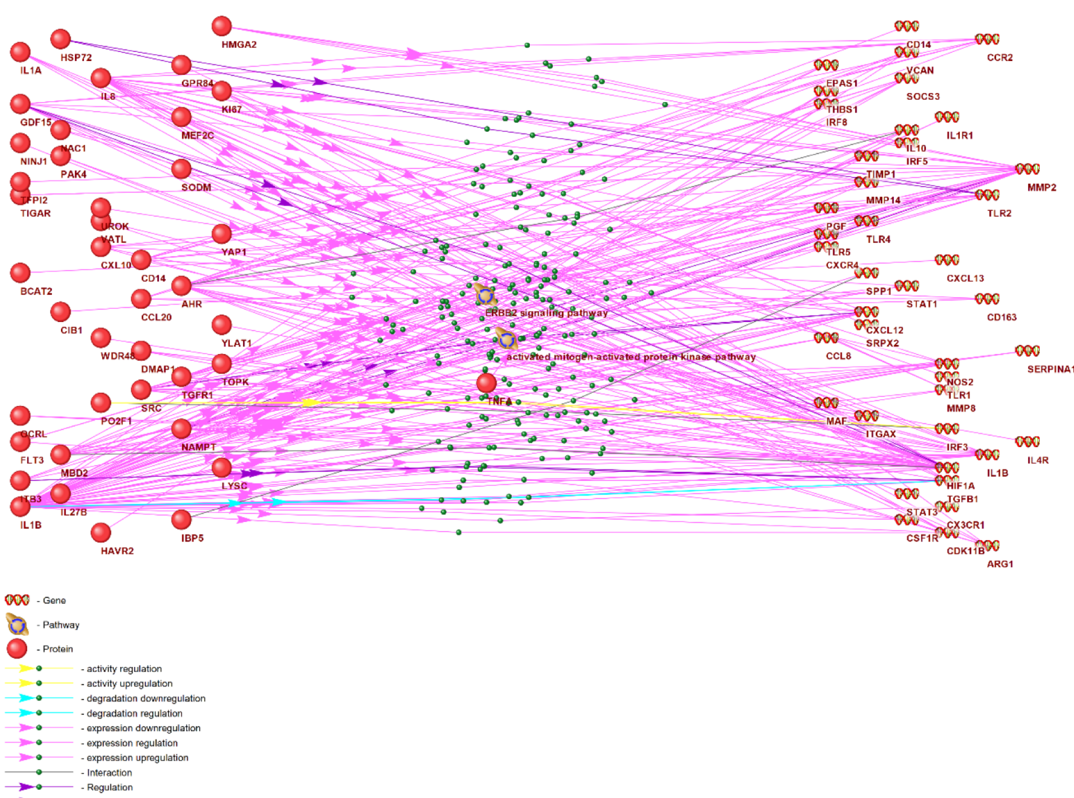

Рисунок S2. Потенциальные регуляторные воздействия дифференциально экспрессируемых белков, взятых из работы (Li et al., 2022 на фенотип-ассоциированные гены в M2c.

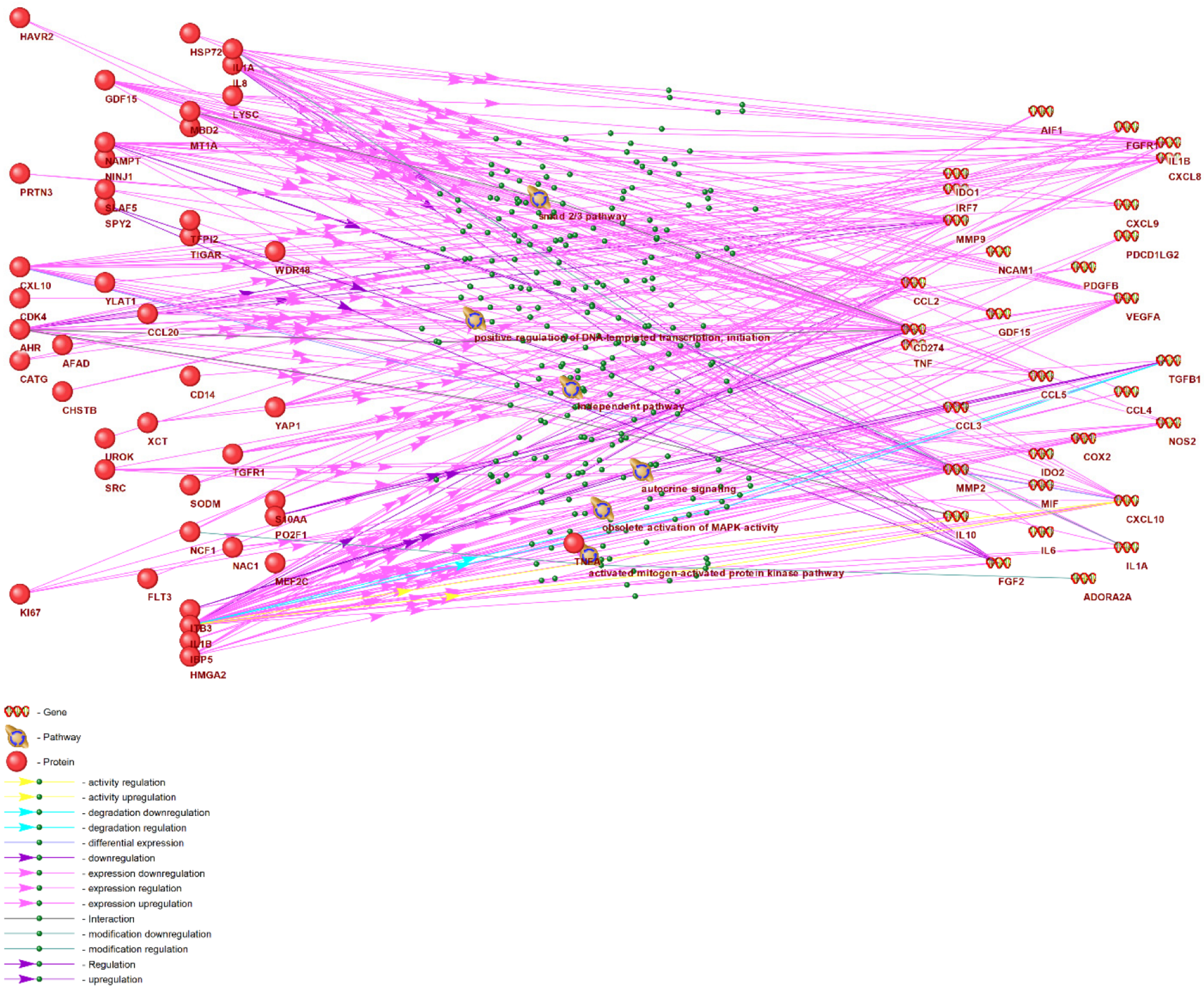

Рисунок S3. Потенциальные регуляторные воздействия дифференциально экспрессируемых белков, взятых из работы (Li et al., 2022), на фенотип-ассоциированные гены в M2d.

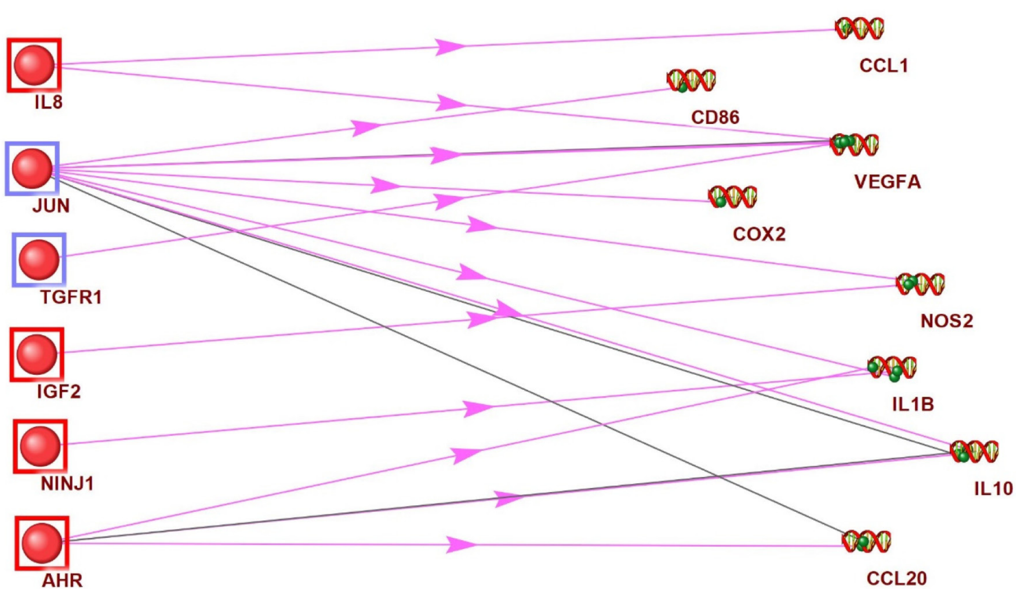

Рисунок S4. Регуляция фенотип-ассоциированных генов в фенотипе M2b белками-посредниками, статистически значимо связанными с этими генами. Белки обведены рамками: голубыми, если уровень белка снижен в этом фенотипе макрофагов по данным, опубликованным Li P. и соавторами (Li et al., 2022), либо красным, если уровень белка повышен.

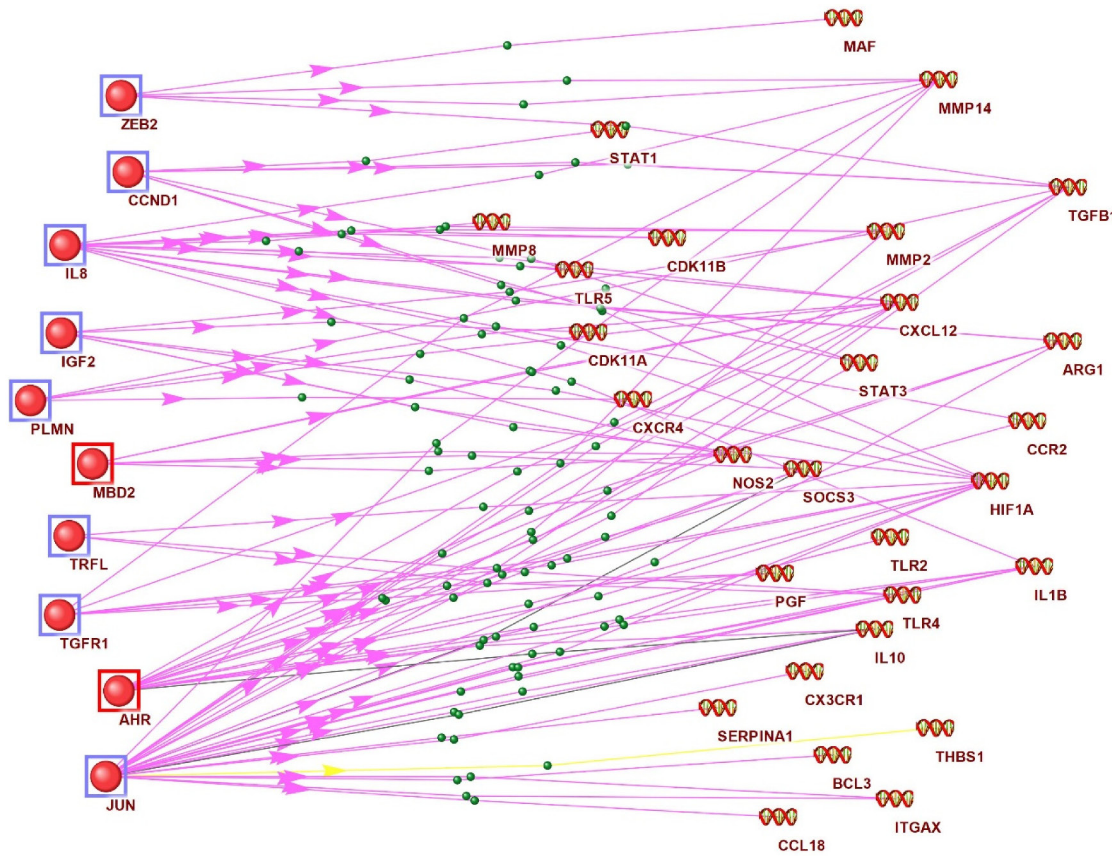

Рисунок S5. Регуляция фенотип-ассоциированных генов в фенотипе M2c белками-посредниками, статистически значимо связанными с этими генами. Белки обведены рамками: голубыми, если уровень белка снижен в этом фенотипе макрофагов по данным, опубликованным Li P. и соавторами (Li et al., 2022), либо красным, если уровень белка повышен.

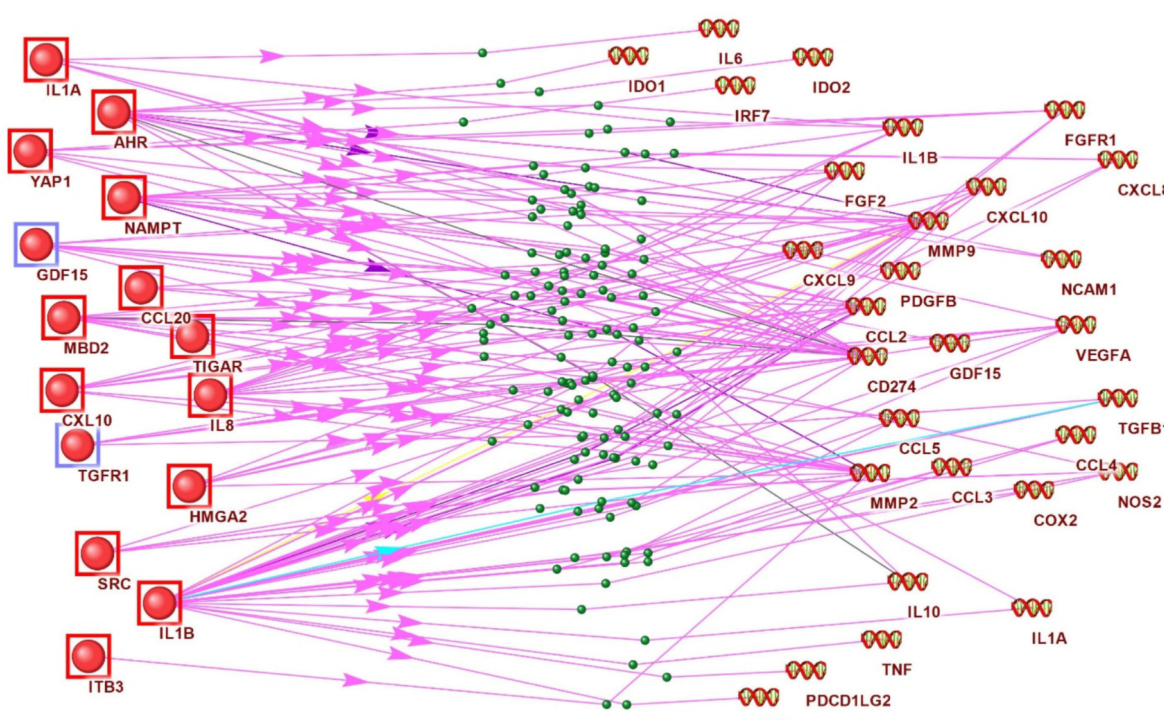

Рисунок S6. Регуляция фенотип-ассоциированных генов в фенотипе M2d белками-посредниками, статистически значимо связанными с этими генами. Белки обведены рамками: голубыми, если уровень белка снижен в этом фенотипе макрофагов по данным, опубликованным Li P. и соавторами (Li et al., 2022), либо красным, если уровень белка повышен.