OptiPrep™ Reference List RC01

Mononuclear cells, monocytes and polymorphonuclear leukocytes

- This **Reference List** divides the published papers into **cell type** and (where necessary) **method type and/or source, species** and **research topic:** within each group references are listed alphabetically according to first author.
- **A companion Application Sheet (C03)** is a methodological review of iodixanol gradient technology for purifying all leukocyte types from blood.

1 Monocytes

1a From a leukocyte-rich plasma (discontinuous flotation gradient)

Note that monocytes are also prepared from mononuclear cell preparations (see Section 2) by antibody-bead negative selection

1a-1 Human

Adherence (to endothelial cells)

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Del Conde, I., Nabi, F., Tonda, R., Thiagarajan, P., Lopez, J.A. and Kleiman, N.S. (2005) *Effect of P-selectin on phosphatidylserine exposure and surface-dependent thrombin generation on monocytes* Arterioscler. Thromb. Vasc. Biol., **25**, 1065-1070

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Ronald, J.A., Ionescu, C.V., Rogers, K.A. and Sandig, M. (2001) *Differential regulation of transendothelial migration of THP-1 cells by ICAM-1/LFA-1 and VCAM-1/VLA-4* J. Leukoc. Biol., **70**, 601-609

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Martin, T., Möglich, A., Felix, I., Förtsch, C., Rittlinger, A., Palmer, A., Denk, S., Schneider, J., Notbohm, L. et al (2018) *Rho-inhibiting C2IN-C3 fusion toxin inhibits chemotactic recruitment of human monocytes ex vivo and in mice in vivo* Arch. Toxicol., **92,** 323–336
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Cheng, H-P., Gong, D., Zhao, Z-W., He, P-P., Yu, X-H., Ye, Q., Huang, C., Zhang, X., et al (2018) *MicroRNA-182 promotes lipoprotein lipase expression and atherogenesis by targeting histone deacetylase 9 in apolipoprotein E-knockout mice* Circul. J., **82**, 28-38

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Mancilla-Herrera I., Alvarado-Moreno, J.A., Cérbulo-Vázquez, A., Prieto-Chávez, J.L., Ferat-Osorio, E., López-Macías, C., Estrada-Parra, S., Isibasi, A. and Arriaga-Pizano, L. (2015) *Activated endothelial cells limit inflammatory response, but increase chemoattractant potential and bacterial clearance by human monocytes* Cell Biol. Int., **39**, 721–732

Martins, R., Maier, J., Gorki, A-D., Huber, K.V.M., Sharif, O., Starkl, P., Saluzzo, S., Quattrone, F., Gawish, R., Lakovits, K., Aichinger, M.C. et al (2016) *Heme drives hemolysis-induced susceptibility to infection via disruption of phagocyte functions* Nat. Immunol., **17**, 1361-1372

Roberts, L.L. and Robinson, C.M. (2014) *Mycobacterium tuberculosis infection of human dendritic cells decreases integrin expression, adhesion and migration to chemokines* Immunology, **141**, 39–51

Robinson, C.M., Jung, J-Y. and Nau, G.J. (2012) *Interferon-γ, tumor necrosis factor, and interleukin-18 cooperate to control growth of Mycobacterium tuberculosis in human macrophages* Cytokine, **60**, 233–241

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Ritter, U. and Moll, H. (2000) *Monocyte chemotactic protein-1 stimulates the killing of Leishmania major by human monocytes, acts synergistically with IFN-γ and is antagonized by IL-4* Eur. J. Immunol., **30**, 3111-3120

Cord blood

Kraft, J.D., Horzempa, J., Davis, C., Jung, J-Y., Pena, M.M.O. and Robinson, C.M. (2013) *Neonatal macrophages express elevated levels of interleukin-27 that oppose immune responses* Immunology, **139**, 484–493

Dendritic cell, derived

Alvarez, Y., Municio, C., Alonso, S., San Román, J.A., Sánchez Crespo, M. and Fernández, N. (2009) *Cyclooxygenase-2 iduced by zymosan in human monocyte-derived dendritic cells shows high stability, and its expression is enhanced by atorvastatin* J. Pharmacol. Exp. Ther., **329**, 987-994

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Drug delivery (liposomes)

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Heat-shock protein *see* Exercise effects

Immune responses *see* Angiogenic/immune responses

Inflammatory responses

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Zimmermann, H., Weston, C.J., Curbishley, S.M. and Adams, D.H.(2012) *The role of vascular-adhesion-protein 1 (vap-1) in mediating monocyte migration across inflamed hepatic sinusoidal endothelium* Gut, **61**, A124

Leishmania

Ritter, U. and Moll, H. (2000) *Monocyte chemotactic protein-1 stimulates the killing of Leishmania major by human monocytes, acts synergistically with IFN-γ and is antagonized by IL-4* Eur. J. Immunol., **30**, 3111-3120

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Lipoprotein lipase

Cheng, H-P., Gong, D., Zhao, Z-W., He, P-P., Yu, X-H., Ye, Q., Huang, C., Zhang, X., et al *MicroRNA-182 promotes lipoprotein lipase expression and atherogenesis by targeting histone deacetylase 9 in apolipoprotein E-knockout mice* Circul. J., **82**, 28-38

Liver/liver tumous

Aspinall, A.I., Curbishley, S.M., Lalor, P.F., Weston, C.J., Blahova, M., Liaskou, E., Adams, R.M., Holt, A.P. and Adams, D.H. (2010) *CX3CR1 and vascular adhesion protein-1-dependent recruitment of CD161 monocytes across human liver sinusoidal endothelium* Hepatology, **51**, 2030-2039

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Methodology

Graziani-Bowering, G.M., Graham, J. and Filion, L.G. (1997) *A quick, easy and inexpensive method for the isolation of human peripheral blood monocytes* J. Immunol. Methods, **207**, 157-168
Nutt, J.C., Willis, C.C., Morris, J.M. and Gallery, E.D.M. (2004) *Isolating pure populations of monocytes from the blood of pregnant women: comparison of flotation in iodixanol with elutriation* J. Immunol. Methods, **293**, 215-218

MicroRNA-182

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Transcription factors

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2b Semen (human)

Semen (human)

Byrn, R.A. and Kiessling, A.A. (1998) *Analysis of human immunodeficiency virus in semen: indications of a genetically distinct virus reservoir* J. Reprod. Immunol., **41**, 161-176

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2c Tissues

Bone marrow

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Brain

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Heart

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Liver

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Pancreatic lymph nodes

Mirlekar, B., Michaud, D., Searcy, R., Greene, K. and Pylayeva-Gupta, Y. (2018) *IL35 Hinders endogenous antitumor T-cell immunity and responsiveness to immunotherapy in pancreatic cancer* Cancer Immunol. Res., **6**; 1014–1024

Spleen

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Tumour tissue

Buchan, S.L., Dou, L., Remer, M., Booth, S.G., Dunn, S.N., Lai, C., Semmrich, M., Teige, I., Martensson, L., Penfold, C.A. et al (2018) *Antibodies to costimulatory receptor 4-1BB enhance anti-tumor immunity via T regulatory cell depletion and promotion of CD8 T cell effector function* Immunity, **49**, 958–970

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3 Mononuclear cells (mixer flotation)

3a-1 Blood (human and non-human primates)

Bouwens, M., Afman, L.A. and Müller, M. (2007) *Fasting induces changes in peripheral blood mono-nuclear cell gene expression profiles related to increases in fatty acid β-oxidation: functional role of peroxisome proliferator–activated receptor α in human peripheral blood mononuclear cells* Am. J. Clin. Nutr., **86**, 1515-1523

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Nievergelt, A., Marazzi, J., Schoop, R., Altmann, K-H. and Gertsch, J. (2011) *Ginger phenylpropanoids inhibit IL-1b and prostanoid secretion and disrupt arachidonate-phospholipid remodeling by targeting phospholipases A2* J. Immunol., **187**, 4140–4150

Zhang, Y., Li, S-K. and Tsui, S.K-W. (2015) *Genome-wide analysis of DNA methylation associated with HIV infection based on a pair of monozygotic twins* Genomics Data **6**, 12–15

3a-2 Blood (rodent)

DiJoseph, J.F., Dougher, M.M., Kalyandrug, L.B., Armellino, D.C., Boghaert, E.R., Hamann, P.R., Moran, J.K. and Damle, N.K. (2006) *Antitumor efficacy of a combination of CMC-544 (inotuzumab ozogamicin), a CD22-targeted cytotoxic immunoconjugate of calicheamicin, and rituximab against non-Hodgkin's B-cell lymphoma* Clin. Cancer Res., **12**, 242-249

Grace, P.M., Fabisiak, T.J., Green-Fulgham, S.M., Anderson, N.D., Strand, K.A., Kwilasz, A.J. Galer, E.L., Walker, F.R., Greenwood, B.N. et al (2016) *Prior voluntary wheel running attenuates neuropathic pain* Pain, **157**, 2012–2023

Houghton, J., Macera-Bloch, L.S., Harrison, L., Kim, K.H. and Korah, R.M. (2000) *Tumor necrosis factor alpha and interleukin 1β up-regulate gastric mucosal Fas antigen expression in Helicobacter pylori infection* Infect. Immun., **68**, 1189-1195

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Mendez-David, I., El-Ali, Z., Hen, R., Falissard, B., Corruble, E., Gardier, A.M., Kerdine-Römer, S. and David, D.J. (2013) *A method for biomarker measurements in peripheral blood mononuclear cells isolated from anxious and depressed mice: β-arrestin 1 protein levels in depression and treatment* Front. Pharmacol, **4**: 124

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Shao, X., Rivera, J., Niang, R., Casadevall, A. and Goldman, D.L. (2005) *A dual role for TGF-β1 in the control and persistence of fungal pneumonia* J. Immunol., **175**, 6757-6763

Wada, Y., Lu, R., Zhou, D., Chu, J., Przewloka, T., Zhang, S., Li, L., Wu, Y., Qin, J., Balasubramanyam, V., Barsoum, J. and Ono, M. (2007) *Selective abrogation of Th1 response by STA-5326, a potent IL-12/IL-23 inhibitor* Blood, **109**, 1156-1164

3a-3 Blood (ruminant)

Graham-Brown, J., Hartley, C., Clough, H., Kadioglu, A., Baylis, M. and Williams, D.J.L. (2018) *Dairy heifers naturally exposed to Fasciola hepatica develop a type 2 immune response and concomitant suppression of leukocyte proliferation* Infect. Immun., **86**: e00607-17

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3a-4 Cord blood

Elias, M., Choudhury, N. and Smit Sibinga, CTh. (2003) *Cord blood from collection to expansion: Feasibility in a regional blood bank* Indian J. Padiatr., **70**, 327-336

3a-5 Tissues

Bone marrow

Liu, L., Papa, E.F., Dooner, M.S., Machan, J.T., Johnson, K.W., Goldberg, L.R., Quesenberry, P.J. and Colvin, G.A. (2012) *Homing and long-term engraftment of long- and short-term renewal hematopoietic stem cells* PLoS One, **7**: e31300

Liver

Au-Yeung, B.B. and Fowell, D.J. (2007) *A key role for Itk in both IFNγ and IL-4 production by NKT cells* J. Immunol., **179**, 111-119

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