

**Supplementary Table 1: The list of references for Fig 3**

Mice		Humans	
<b>Bacteria</b>	<b>Viruses</b>	<b>Bacteria</b>	<b>IMDs/Cancer/others</b>
<b>IL-10 KO</b>	<b>IL-10 KO</b>	<b>IL-10</b>	<b>IL-10</b>
<i>Acinetobacter baumannii</i> (1)	<i>Coxsackievirus B3</i> (56)	<i>Aggregatibacter</i>	Acute polyneuropathy (141)
<i>Bacteroides forsythus</i> (3)	<i>Coxsackievirus B4</i> (58)	<i>actinomycetemcomitans</i> (96)	Allergic asthma (143)
<i>Bacteroides fragilis</i> (3, 5)	Influenza A virus (59)	<i>Brucella</i> spp. (98)	Alzheimer's disease (145, 146)
<i>Bacteroides vulgatus</i> (3)	<i>Lymphocytic choriomeningitis</i>	<i>Chlamydia trachomatis</i> (100)	Ankylosing spondylitis (148, 149)
<i>Bifidobacterium animalis</i> (8)	<i>mammarenavirus</i> (60, 61)	<i>Escherichia coli</i> (101)	Autoimmune hepatitis (151)
<i>Borellia burgdorferi</i> (10)	<i>Mouse hepatitis virus</i> (62)	<i>Helicobacter pylori</i> (102)	Autoimmune thyroid disease (153)
<i>Campylobacter jejuni</i> (12, 13)	<i>Murine cytomegalovirus</i> (63)	<b>IL-10R</b>	Autoimmune uveitis (155)
<i>Chlamydia pneumoniae</i> (14)	<i>Murine gammaherpesvirus</i> 68 (64)	<i>Mycobacterium leprae</i> (103, 104)	Breast cancer (157, 158)
<i>Chlamydia trachomatis</i> (15)	<i>Murine norovirus</i> (65)	<i>Mycobacterium tuberculosis</i> (105-107)	Cervical cancer (159, 160)
<i>Citrobacter rodentium</i> (16)	<i>Porcine circovirus Type 2</i> (66)	<i>Pseudomonas aeruginosa</i> (108)	Chronic periodontitis (161, 162)
<i>Clostridium sordellii</i> (17)	Respiratory syncytial virus (67)	<i>Treponema pallidum</i> (109)	Diabetic Nephropathy (163-165)
<i>Enterococcus faecalis</i> (18, 19)	<i>Sindbis virus</i> (68)	<i>Mycobacterium leprae</i> (97)	Graft Vs Host disease (166)
<i>Escherichia coli</i> (19-21)	<i>Tick-borne encephalitis virus</i> (69)	<i>Mycobacterium tuberculosis</i> (99)	Hodgkin Lymphoma (167)
<i>Fusobacterium nucleatum</i> (22)	<i>Vaccinia virus</i> (70)	<b>Fungi</b>	Inflammatory bowel disease (168, 169)
<i>Helicobacter bilis</i> (23)	West Nile virus (71)	<b>IL-10</b>	Multiple Sclerosis (170)
<i>Helicobacter hepaticus</i> (23, 24)	<b>IL-10 Tg</b>	<i>Aspergillus fumigatus</i> (110)	Psoriasis (171)
<i>Listeria monocytogenes</i> (25)	<i>Vaccinia virus</i> (57)	<i>Paracoccidioides brasiliensis</i> (111)	Rheumatic heart disease (172)
<i>Mycobacterium bovis</i> (26)	<b>Nematodes</b>	<b>Protozoa</b>	Rheumatoid arthritis (173)
<i>Mycobacterium tuberculosis</i> (27, 28)	<b>IL-10 KO</b>	<b>IL-10</b>	Schizophrenia (174, 175)
<i>Peptostreptococcus micros</i> (22)	<i>Litomosoides sigmodontis</i> (72)	<i>Leishmania</i> spp. (112, 113)	Sjögren's syndrome (176, 177)
<i>Porphyromonas gingivalis</i> (3, 29)	<i>Trichuris muris</i> (74)	<i>Plasmodium</i> spp. (114, 115)	SLE (178-181)
<i>Prevotella intermedia</i> (3, 22)	<b>IL-10R KO</b>	<i>Schistosoma mansoni</i> (116)	Thrombocytopenic purpura (182)
<i>Pseudomonas aeruginosa</i> (30, 31)	<i>Trichuris muris</i> (73)	<i>Toxoplasma</i> spp. (117-119)	Tubulointerstitial nephritis (183)
<i>Streptococcus intermedius</i> (22)	<b>Immune mediated diseases/Cancer/Others</b>	<i>Trypanosoma cruzi</i> (120)	Type-1 diabetes (163)
<i>Streptococcus pneumoniae</i> (32)	<b>IL-10 KO</b>	<b>Viruses</b>	<b>IL-10R</b>
<i>viridans</i> group <i>Streptococcus</i> (17)	Autoimmune encephalomyelitis (75, 76)	<i>Enterovirus 71</i> (121)	Benign prostate hyperplasia (142)
<i>Yersinia enterocolitica</i> (33)	Autoimmune hearing loss (79)	<i>Epstein-Barr virus</i> (123)	Cervical cancer (144)
<b>IL-10 Tg</b>	Autoimmune thyroiditis (80)	Hepatitis B virus (125, 126)	Graft Vs Host disease (147)
<i>Coxiella burnetii</i> (2)	Autoimmune uveitis (82)	Hepatitis C virus (126, 129, 130)	Inflammatory bowel disease (150)
<i>Listeria monocytogenes</i> (4)	Cervical cancer (84)	<i>Human Immunodeficiency Virus</i> (131, 132)	Rheumatoid arthritis (152)
<i>Mycobacterium avium</i> (6)	Chronic enterocolitis (86)	Human papillomavirus (133)	SLE (152, 154)
<i>Mycobacterium bovis</i> (7)	Psoriasis (88)	Human T-cell lymphotropic virus type-I (134)	Systemic sclerosis (156)
<i>Mycobacterium tuberculosis</i> (9)	Rheumatoid arthritis (90)	Influenza A virus (135)	
<i>Pseudomonas aeruginosa</i> (11)	Systemic lupus erythematosus (Murine lupus) (SLE) (92)	<i>Respiratory syncytial virus</i> (136)	
<b>Fungi</b>	Type-1 diabetes (93)	<i>Rhinovirus</i> (136, 137)	
<b>IL-10 KO</b>	<b>IL-10R KO</b>	<i>Severe acute respiratory syndrome coronavirus-2</i> (138)	
<i>Aspergillus fumigatus</i> (34, 35)	Chronic enterocolitis (77)	<i>Tick-borne encephalitis virus</i> (139)	
<i>Candida albicans</i> (35, 36)	<b>IL-10 Tg</b>	<i>Varicella-Zoster virus</i> (140)	
<i>Coccidioides immitis</i> (37)	Aging-associated inflammation (78)	<b>IL-10R</b>	
<i>Cryptococcus neoformans</i> (38, 39)	Aging-associated insulin resistance (78)	<i>Cytomegalovirus</i> (122)	
<i>Histoplasma capsulatum</i> (40)	Atherosclerosis (81)	Hepatitis B virus (124)	
<i>Paracoccidioides brasiliensis</i> (41)	Autoimmune encephalomyelitis (83)	Hepatitis C virus (127, 128)	
<b>Protozoa</b>	Autoimmune insulinitis and diabetes (85)		
<b>IL-10 KO</b>	Autoimmune uveitis (87)		
<i>Leishmania amazonensis</i> (42)	Cerebral ischemia (89)		
<i>Leishmania donovani</i> (44)	Chronic idiopathic demyelinating polyneuropathy (91)		
<i>Leishmania major</i> (46, 47)	Lewis lung carcinoma (45)		
<i>Leishmania mexicana</i> (42)	Skin cancer (94)		
<i>Plasmodium chabaudi chabaudi</i> (48, 49)	Myasthenia gravis (95)		
<i>Schistosoma mansoni</i> (50, 51)			
<i>Toxoplasma gondii</i> (52, 53)			
<i>Trypanosoma cruzi</i> (54, 55)			
<b>IL-10 Tg</b>			
<i>Leishmania donovani</i> (43)			
<i>Leishmania major</i> (4, 45)			

## References

1. Kang, M. J., A. R. Jang, J. Y. Park, J. H. Ahn, T. S. Lee, D. Y. Kim, M. S. Lee, S. Hwang, Y. J. Jeong, and J. H. Park. 2020. IL-10 Protects Mice From the Lung Infection of *Acinetobacter baumannii* and Contributes to Bacterial Clearance by Regulating STAT3-Mediated MARCO Expression in Macrophages. *Front Immunol* 11: 270.
2. Meghari, S., Y. Bechah, C. Capo, H. Lepidi, D. Raoult, P. J. Murray, and J. L. Mege. 2008. Persistent *Coxiella burnetii* infection in mice overexpressing IL-10: an efficient model for chronic Q fever pathogenesis. *PLoS Pathog* 4: e23.
3. Al-Rasheed, A., H. Scheerens, D. M. Rennick, H. M. Fletcher, and D. N. Tatakis. 2003. Accelerated alveolar bone loss in mice lacking interleukin-10. *J Dent Res* 82: 632-635.
4. Groux, H., F. Cottrez, M. Rouleau, S. Mauze, S. Antonenko, S. Hurst, T. McNeil, M. Bigler, M. G. Roncarolo, and R. L. Coffman. 1999. A transgenic model to analyze the immunoregulatory role of IL-10 secreted by antigen-presenting cells. *J Immunol* 162: 1723-1729.
5. Cohen-Poradosu, R., R. M. McLoughlin, J. C. Lee, and D. L. Kasper. 2011. *Bacteroides fragilis*-stimulated interleukin-10 contains expanding disease. *J Infect Dis* 204: 363-371.
6. Feng, C. G., M. C. Kullberg, D. Jankovic, A. W. Cheever, P. Caspar, R. L. Coffman, and A. Sher. 2002. Transgenic mice expressing human interleukin-10 in the antigen-presenting cell compartment show increased susceptibility to infection with *Mycobacterium avium* associated with decreased macrophage effector function and apoptosis. *Infect Immun* 70: 6672-6679.
7. Murray, P. J., L. Wang, C. Onufryk, R. I. Tepper, and R. A. Young. 1997. T cell-derived IL-10 antagonizes macrophage function in mycobacterial infection. *J Immunol* 158: 315-321.
8. Moran, J. P., J. Walter, G. W. Tannock, S. L. Tonkonogy, and R. B. Sartor. 2009. *Bifidobacterium animalis* causes extensive duodenitis and mild colonic inflammation in monoassociated interleukin-10-deficient mice. *Inflamm Bowel Dis* 15: 1022-1031.
9. Turner, J., M. Gonzalez-Juarrero, D. L. Ellis, R. J. Basaraba, A. Kipnis, I. M. Orme, and A. M. Cooper. 2002. In vivo IL-10 production reactivates chronic pulmonary tuberculosis in C57BL/6 mice. *J Immunol* 169: 6343-6351.
10. Brown, J. P., J. F. Zachary, C. Teuscher, J. J. Weis, and R. M. Wooten. 1999. Dual role of interleukin-10 in murine Lyme disease: regulation of arthritis severity and host defense. *Infect Immun* 67: 5142-5150.
11. Sun, L., R.-F. Guo, M. W. Newstead, T. J. Standiford, D. R. Macariola, and T. P. Shanley. 2009. Effect of IL-10 on Neutrophil Recruitment and Survival after *Pseudomonas aeruginosa* Challenge. *American Journal of Respiratory Cell and Molecular Biology* 41: 76-84.
12. Bell, J. A., J. P. Jerome, A. E. Plovanich-Jones, E. J. Smith, J. R. Gettings, H. Y. Kim, J. R. Landgraf, T. Lefebure, J. J. Kopper, V. A. Rathinam, J. L. St Charles, B. A. Buffa, A. P. Brooks, S. A. Poe, K. A. Eaton, M. J. Stanhope, and L. S. Mansfield. 2013. Outcome of infection of C57BL/6 IL-10(-/-) mice with *Campylobacter jejuni* strains is correlated with

- genome content of open reading frames up- and down-regulated in vivo. *Microb Pathog* 54: 1-19.
13. Bell, J. A., J. L. St Charles, A. J. Murphy, V. A. Rathinam, A. E. Plovanich-Jones, E. L. Stanley, J. E. Wolf, J. R. Gettings, T. S. Whittam, and L. S. Mansfield. 2009. Multiple factors interact to produce responses resembling spectrum of human disease in *Campylobacter jejuni* infected C57BL/6 IL-10<sup>-/-</sup> mice. *BMC Microbiol* 9: 57.
  14. Penttila, T., A. Haveri, A. Tammiruusu, J. M. Vuola, R. Lahesmaa, and M. Puolakkainen. 2008. Chlamydia pneumoniae infection in IL-10 knock out mice: accelerated clearance but severe pulmonary inflammatory response. *Microb Pathog* 45: 25-29.
  15. Yang, X., J. Gartner, L. Zhu, S. Wang, and R. C. Brunham. 1999. IL-10 gene knockout mice show enhanced Th1-like protective immunity and absent granuloma formation following *Chlamydia trachomatis* lung infection. *J Immunol* 162: 1010-1017.
  16. Dann, S. M., C. Le, B. K. Choudhury, H. Liu, O. Saldarriaga, E. M. Hanson, Y. Cong, and L. Eckmann. 2014. Attenuation of intestinal inflammation in interleukin-10-deficient mice infected with *Citrobacter rodentium*. *Infect Immun* 82: 1949-1958.
  17. Sydora, B. C., M. M. Tavernini, J. S. Doyle, and R. N. Fedorak. 2005. Association with selected bacteria does not cause enterocolitis in IL-10 gene-deficient mice despite a systemic immune response. *Dig Dis Sci* 50: 905-913.
  18. Kim, S. C., S. L. Tonkonogy, T. Karrasch, C. Jobin, and R. B. Sartor. 2007. Dual-association of gnotobiotic IL-10<sup>-/-</sup> mice with 2 nonpathogenic commensal bacteria induces aggressive pancolitis. *Inflamm Bowel Dis* 13: 1457-1466.
  19. Kim, S. C., S. L. Tonkonogy, C. A. Albright, J. Tsang, E. J. Balish, J. Braun, M. M. Huycke, and R. B. Sartor. 2005. Variable phenotypes of enterocolitis in interleukin 10-deficient mice monoassociated with two different commensal bacteria. *Gastroenterology* 128: 891-906.
  20. Schmitz, J. M., S. L. Tonkonogy, B. Dogan, A. Leblond, K. J. Whitehead, S. C. Kim, K. W. Simpson, and R. B. Sartor. 2019. Murine Adherent and Invasive *E. coli* Induces Chronic Inflammation and Immune Responses in the Small and Large Intestines of Monoassociated IL-10<sup>-/-</sup> Mice Independent of Long Polar Fimbriae Adhesin A. *Inflamm Bowel Dis* 25: 875-885.
  21. Sewnath, M. E., D. P. Olszyna, R. Birjmohun, F. J. ten Kate, D. J. Gouma, and T. van Der Poll. 2001. IL-10-deficient mice demonstrate multiple organ failure and increased mortality during *Escherichia coli* peritonitis despite an accelerated bacterial clearance. *J Immunol* 166: 6323-6331.
  22. Sasaki, H., L. Hou, A. Belani, C. Y. Wang, T. Uchiyama, R. Muller, and P. Stashenko. 2000. IL-10, but not IL-4, suppresses infection-stimulated bone resorption in vivo. *J Immunol* 165: 3626-3630.
  23. Burich, A., R. Hershberg, K. Waggle, W. Zeng, T. Brabb, G. Westrich, J. L. Viney, and L. Maggio-Price. 2001. Helicobacter-induced inflammatory bowel disease in IL-10<sup>-/-</sup> and T cell-deficient mice. *Am J Physiol Gastrointest Liver Physiol* 281: G764-778.

24. Zhu, L., C. Zhu, S. Cao, and Q. Zhang. 2021. Helicobacter hepaticus Induce Colitis in Male IL-10(-/-) Mice Dependent by Cytolethal Distending Toxin B and via the Activation of Jak/Stat Signaling Pathway. *Front Cell Infect Microbiol* 11: 616218.
25. Dai, W. J., G. Kohler, and F. Brombacher. 1997. Both innate and acquired immunity to Listeria monocytogenes infection are increased in IL-10-deficient mice. *J Immunol* 158: 2259-2267.
26. Murray, P. J., and R. A. Young. 1999. Increased antimycobacterial immunity in interleukin-10-deficient mice. *Infect Immun* 67: 3087-3095.
27. Redford, P. S., A. Boonstra, S. Read, J. Pitt, C. Graham, E. Stavropoulos, G. J. Bancroft, and A. O'Garra. 2010. Enhanced protection to Mycobacterium tuberculosis infection in IL-10-deficient mice is accompanied by early and enhanced Th1 responses in the lung. *Eur J Immunol* 40: 2200-2210.
28. North, R. J. 1998. Mice incapable of making IL-4 or IL-10 display normal resistance to infection with Mycobacterium tuberculosis. *Clin Exp Immunol* 113: 55-58.
29. Sasaki, H., N. Suzuki, R. Kent, Jr., N. Kawashima, J. Takeda, and P. Stashenko. 2008. T cell response mediated by myeloid cell-derived IL-12 is responsible for Porphyromonas gingivalis-induced periodontitis in IL-10-deficient mice. *J Immunol* 180: 6193-6198.
30. Belo, V. A., J. A. Pereira, S. F. D. Souza, F. L. Tana, B. P. Pereira, D. O. Lopes, C. S. Ceron, R. D. Novaes, P. P. Corsetti, and L. A. de Almeida. 2021. The role of IL-10 in immune responses against Pseudomonas aeruginosa during acute lung infection. *Cell Tissue Res* 383: 1123-1133.
31. Chmiel, J. F., M. W. Konstan, J. E. Knesebeck, J. B. Hilliard, T. L. Bonfield, D. V. Dawson, and M. Berger. 1999. IL-10 attenuates excessive inflammation in chronic Pseudomonas infection in mice. *Am J Respir Crit Care Med* 160: 2040-2047.
32. Penalzoza, H. F., P. A. Nieto, N. Munoz-Durango, F. J. Salazar-Echegarai, J. Torres, M. J. Parga, M. Alvarez-Lobos, C. A. Riedel, A. M. Kalergis, and S. M. Bueno. 2015. Interleukin-10 plays a key role in the modulation of neutrophils recruitment and lung inflammation during infection by Streptococcus pneumoniae. *Immunology* 146: 100-112.
33. Sing, A., A. Roggenkamp, A. M. Geiger, and J. Heesemann. 2002. Yersinia enterocolitica evasion of the host innate immune response by V antigen-induced IL-10 production of macrophages is abrogated in IL-10-deficient mice. *J Immunol* 168: 1315-1321.
34. Grunig, G., D. B. Corry, M. W. Leach, B. W. Seymour, V. P. Kurup, and D. M. Rennick. 1997. Interleukin-10 is a natural suppressor of cytokine production and inflammation in a murine model of allergic bronchopulmonary aspergillosis. *J Exp Med* 185: 1089-1099.
35. Del Sero, G., A. Mencacci, E. Cenci, C. F. d'Ostiani, C. Montagnoli, A. Bacci, P. Mosci, M. Kopf, and L. Romani. 1999. Antifungal type 1 responses are upregulated in IL-10-deficient mice. *Microbes Infect* 1: 1169-1180.
36. Vazquez-Torres, A., J. Jones-Carson, R. D. Wagner, T. Warner, and E. Balish. 1999. Early resistance of interleukin-10 knockout mice to acute systemic candidiasis. *Infect Immun* 67: 670-674.

37. Fierer, J., L. Walls, L. Eckmann, T. Yamamoto, and T. N. Kirkland. 1998. Importance of interleukin-10 in genetic susceptibility of mice to *Coccidioides immitis*. *Infect Immun* 66: 4397-4402.
38. Hernandez, Y., S. Arora, J. R. Erb-Downward, R. A. McDonald, G. B. Toews, and G. B. Huffnagle. 2005. Distinct roles for IL-4 and IL-10 in regulating T2 immunity during allergic bronchopulmonary mycosis. *J Immunol* 174: 1027-1036.
39. Blackstock, R., K. L. Buchanan, A. M. Adesina, and J. W. Murphy. 1999. Differential regulation of immune responses by highly and weakly virulent *Cryptococcus neoformans* isolates. *Infect Immun* 67: 3601-3609.
40. Deepe, G. S., Jr., and R. S. Gibbons. 2003. Protective and memory immunity to *Histoplasma capsulatum* in the absence of IL-10. *J Immunol* 171: 5353-5362.
41. Costa, T. A., S. B. Bazan, C. Feriotti, E. F. Araujo, E. Bassi, F. V. Loures, and V. L. Calich. 2013. In pulmonary paracoccidioidomycosis IL-10 deficiency leads to increased immunity and regressive infection without enhancing tissue pathology. *PLoS Negl Trop Dis* 7: e2512.
42. Padigel, U. M., J. Alexander, and J. P. Farrell. 2003. The role of interleukin-10 in susceptibility of BALB/c mice to infection with *Leishmania mexicana* and *Leishmania amazonensis*. *J Immunol* 171: 3705-3710.
43. Murray, H. W., C. M. Lu, S. Mauze, S. Freeman, A. L. Moreira, G. Kaplan, and R. L. Coffman. 2002. Interleukin-10 (IL-10) in experimental visceral leishmaniasis and IL-10 receptor blockade as immunotherapy. *Infect Immun* 70: 6284-6293.
44. Murphy, M. L., U. Wille, E. N. Villegas, C. A. Hunter, and J. P. Farrell. 2001. IL-10 mediates susceptibility to *Leishmania donovani* infection. *Eur J Immunol* 31: 2848-2856.
45. Hagenbaugh, A., S. Sharma, S. M. Dubinett, S. H. Wei, R. Aranda, H. Cheroutre, D. J. Fowell, S. Binder, B. Tsao, R. M. Locksley, K. W. Moore, and M. Kronenberg. 1997. Altered immune responses in interleukin 10 transgenic mice. *J Exp Med* 185: 2101-2110.
46. Schwarz, T., K. A. Remer, W. Nahrendorf, A. Masic, L. Siewe, W. Muller, A. Roers, and H. Moll. 2013. T cell-derived IL-10 determines leishmaniasis disease outcome and is suppressed by a dendritic cell based vaccine. *PLoS Pathog* 9: e1003476.
47. Kane, M. M., and D. M. Mosser. 2001. The role of IL-10 in promoting disease progression in leishmaniasis. *J Immunol* 166: 1141-1147.
48. Li, C., L. A. Sanni, F. Omer, E. Riley, and J. Langhorne. 2003. Pathology of *Plasmodium chabaudi chabaudi* infection and mortality in interleukin-10-deficient mice are ameliorated by anti-tumor necrosis factor alpha and exacerbated by anti-transforming growth factor beta antibodies. *Infect Immun* 71: 4850-4856.
49. Li, C., I. Corraliza, and J. Langhorne. 1999. A defect in interleukin-10 leads to enhanced malarial disease in *Plasmodium chabaudi chabaudi* infection in mice. *Infect Immun* 67: 4435-4442.
50. Hoffmann, K. F., A. W. Cheever, and T. A. Wynn. 2000. IL-10 and the dangers of immune polarization: excessive type 1 and type 2 cytokine responses induce distinct forms of lethal immunopathology in murine schistosomiasis. *J Immunol* 164: 6406-6416.

51. Wynn, T. A., A. W. Cheever, M. E. Williams, S. Hieny, P. Caspar, R. Kuhn, W. Muller, and A. Sher. 1998. IL-10 regulates liver pathology in acute murine Schistosomiasis mansoni but is not required for immune down-modulation of chronic disease. *J Immunol* 160: 4473-4480.
52. Gazzinelli, R. T., M. Wysocka, S. Hieny, T. Scharon-Kersten, A. Cheever, R. Kuhn, W. Muller, G. Trinchieri, and A. Sher. 1996. In the absence of endogenous IL-10, mice acutely infected with *Toxoplasma gondii* succumb to a lethal immune response dependent on CD4+ T cells and accompanied by overproduction of IL-12, IFN-gamma and TNF-alpha. *J Immunol* 157: 798-805.
53. Neyer, L. E., G. Grunig, M. Fort, J. S. Remington, D. Rennick, and C. A. Hunter. 1997. Role of interleukin-10 in regulation of T-cell-dependent and T-cell-independent mechanisms of resistance to *Toxoplasma gondii*. *Infect Immun* 65: 1675-1682.
54. Pino-Martinez, A. M., C. G. Miranda, E. I. Batalla, S. M. Gonzalez-Cappa, and C. D. Alba Soto. 2019. IL-10 participates in the expansion and functional activation of CD8(+) T cells during acute infection with *Trypanosoma cruzi*. *J Leukoc Biol* 105: 163-175.
55. Hunter, C. A., L. A. Ellis-Neyes, T. Slifer, S. Kanaly, G. Grunig, M. Fort, D. Rennick, and F. G. Araujo. 1997. IL-10 is required to prevent immune hyperactivity during infection with *Trypanosoma cruzi*. *J Immunol* 158: 3311-3316.
56. Szalay, G., M. Sauter, J. Hald, A. Weinzierl, R. Kandolf, and K. Klingel. 2006. Sustained nitric oxide synthesis contributes to immunopathology in ongoing myocarditis attributable to interleukin-10 disorders. *Am J Pathol* 169: 2085-2093.
57. Cush, S. S., G. V. Reynoso, O. Kamenyeva, J. R. Bennink, J. W. Yewdell, and H. D. Hickman. 2016. Locally Produced IL-10 Limits Cutaneous Vaccinia Virus Spread. *PLoS Pathog* 12: e1005493.
58. Gu, R., A. Shampang, A. Reilly, D. Fisher, W. Glass, and A. I. Ramsingh. 2009. IL-10 is pathogenic during the development of coxsackievirus B4-induced chronic pancreatitis. *Virology* 395: 77-86.
59. Sun, K., L. Torres, and D. W. Metzger. 2010. A detrimental effect of interleukin-10 on protective pulmonary humoral immunity during primary influenza A virus infection. *J Virol* 84: 5007-5014.
60. Ejrnaes, M., C. M. Filippi, M. M. Martinic, E. M. Ling, L. M. Togher, S. Crotty, and M. G. von Herrath. 2006. Resolution of a chronic viral infection after interleukin-10 receptor blockade. *J Exp Med* 203: 2461-2472.
61. Brooks, D. G., M. J. Trifilo, K. H. Edelmann, L. Teyton, D. B. McGavern, and M. B. Oldstone. 2006. Interleukin-10 determines viral clearance or persistence in vivo. *Nat Med* 12: 1301-1309.
62. Lin, M. T., D. R. Hinton, B. Parra, S. A. Stohlman, and R. C. van der Veen. 1998. The role of IL-10 in mouse hepatitis virus-induced demyelinating encephalomyelitis. *Virology* 245: 270-280.

63. Cheeran, M. C., S. Hu, J. M. Palmquist, T. Bakken, G. Gekker, and J. R. Lokensgard. 2007. Dysregulated interferon-gamma responses during lethal cytomegalovirus brain infection of IL-10-deficient mice. *Virus Res* 130: 96-102.
64. Nelson, D. A., C. C. Petty, and K. L. Bost. 2009. Infection with murine gammaherpesvirus 68 exacerbates inflammatory bowel disease in IL-10-deficient mice. *Inflamm Res* 58: 881-889.
65. Basic, M., L. M. Keubler, M. Buettner, M. Achard, G. Breves, B. Schroder, A. Smoczek, A. Jorns, D. Wedekind, N. H. Zschemisch, C. Gunther, D. Neumann, S. Lienenklaus, S. Weiss, M. W. Hornef, M. Mahler, and A. Bleich. 2014. Norovirus triggered microbiota-driven mucosal inflammation in interleukin 10-deficient mice. *Inflamm Bowel Dis* 20: 431-443.
66. Du, Q., H. Zhang, M. He, X. Zhao, J. He, B. Cui, X. Yang, D. Tong, and Y. Huang. 2019. Interleukin-10 Promotes Porcine Circovirus Type 2 Persistent Infection in Mice and Aggravates the Tissue Lesions by Suppression of T Cell Infiltration. *Front Microbiol* 10: 2050.
67. Loebbermann, J., C. Schnoeller, H. Thornton, L. Durant, N. P. Sweeney, M. Schuijs, A. O'Garra, C. Johansson, and P. J. Openshaw. 2012. IL-10 regulates viral lung immunopathology during acute respiratory syncytial virus infection in mice. *PLoS One* 7: e32371.
68. Martin, N. M., and D. E. Griffin. 2018. Interleukin-10 Modulation of Virus Clearance and Disease in Mice with Alphaviral Encephalomyelitis. *J Virol* 92.
69. Tun, M. M., K. Aoki, M. Senba, C. C. Buerano, K. Shirai, R. Suzuki, K. Morita, and D. Hayasaka. 2014. Protective role of TNF-alpha, IL-10 and IL-2 in mice infected with the Oshima strain of Tick-borne encephalitis virus. *Sci Rep* 4: 5344.
70. van Den Broek, M., M. F. Bachmann, G. Kohler, M. Barner, R. Escher, R. Zinkernagel, and M. Kopf. 2000. IL-4 and IL-10 antagonize IL-12-mediated protection against acute vaccinia virus infection with a limited role of IFN-gamma and nitric oxide synthetase 2. *J Immunol* 164: 371-378.
71. Bai, F., T. Town, F. Qian, P. Wang, M. Kamanaka, T. M. Connolly, D. Gate, R. R. Montgomery, R. A. Flavell, and E. Fikrig. 2009. IL-10 signaling blockade controls murine West Nile virus infection. *PLoS Pathog* 5: e1000610.
72. Haben, I., W. Hartmann, S. Specht, A. Hoerauf, A. Roers, W. Muller, and M. Breloer. 2013. T-cell-derived, but not B-cell-derived, IL-10 suppresses antigen-specific T-cell responses in *Litomosoides sigmodontis*-infected mice. *Eur J Immunol* 43: 1799-1805.
73. Duque-Correa, M. A., N. A. Karp, C. McCarthy, S. Forman, D. Goulding, G. Sankaranarayanan, T. P. Jenkins, A. J. Reid, E. L. Cambridge, C. Ballesteros Reviriego, P. Sanger Mouse Genetics, c. i, W. Muller, C. Cantacessi, G. Dougan, R. K. Grencis, and M. Berriman. 2019. Exclusive dependence of IL-10/Ralpha signalling on intestinal microbiota homeostasis and control of whipworm infection. *PLoS Pathog* 15: e1007265.
74. Schopf, L. R., K. F. Hoffmann, A. W. Cheever, J. F. Urban, Jr., and T. A. Wynn. 2002. IL-10 is critical for host resistance and survival during gastrointestinal helminth infection. *J Immunol* 168: 2383-2392.

75. Samoilova, E. B., J. L. Horton, and Y. Chen. 1998. Acceleration of experimental autoimmune encephalomyelitis in interleukin-10-deficient mice: roles of interleukin-10 in disease progression and recovery. *Cell Immunol* 188: 118-124.
76. Bettelli, E., M. P. Das, E. D. Howard, H. L. Weiner, R. A. Sobel, and V. K. Kuchroo. 1998. IL-10 is critical in the regulation of autoimmune encephalomyelitis as demonstrated by studies of IL-10- and IL-4-deficient and transgenic mice. *J Immunol* 161: 3299-3306.
77. Spencer, S. D., F. Di Marco, J. Hooley, S. Pitts-Meek, M. Bauer, A. M. Ryan, B. Sordat, V. C. Gibbs, and M. Aguet. 1998. The orphan receptor CRF2-4 is an essential subunit of the interleukin 10 receptor. *J Exp Med* 187: 571-578.
78. Dagdeviren, S., D. Y. Jung, R. H. Friedline, H. L. Noh, J. H. Kim, P. R. Patel, N. Tsitsilianos, K. Inashima, D. A. Tran, X. Hu, M. M. Loubato, S. M. Craige, J. Y. Kwon, K. W. Lee, and J. K. Kim. 2017. IL-10 prevents aging-associated inflammation and insulin resistance in skeletal muscle. *FASEB J* 31: 701-710.
79. Zhou, B., M. H. Kermany, Q. Cai, C. Cai, Y. Zhou, U. Nair, W. Liu, and T. J. Yoo. 2012. Experimental autoimmune hearing loss is exacerbated in IL-10-deficient mice and reversed by IL-10 gene transfer. *Gene Ther* 19: 228-235.
80. Yu, Z., T. Liu, S. Liu, H. Zou, X. Sun, X. Shi, Y. Li, Z. Shan, and W. Teng. 2015. Interleukin-10 influences susceptibility to experimental autoimmune thyroiditis independently of the H-2 gene. *Int J Mol Med* 35: 413-424.
81. Oslund, L. J. P., C. C. Hedrick, T. Olvera, A. Hagenbaugh, M. Territo, J. A. Berliner, and A. I. Fyfe. 1999. Interleukin-10 Blocks Atherosclerotic Events In Vitro and In Vivo. *Arteriosclerosis, Thrombosis, and Vascular Biology* 19: 2847-2853.
82. Rizzo, L. V., H. Xu, C. C. Chan, B. Wiggert, and R. R. Caspi. 1998. IL-10 has a protective role in experimental autoimmune uveoretinitis. *Int Immunol* 10: 807-814.
83. Bettelli, E., M. Prabhu Das, E. D. Howard, H. L. Weiner, R. A. Sobel, and V. K. Kuchroo. 1998. IL-10 Is Critical in the Regulation of Autoimmune Encephalomyelitis as Demonstrated by Studies of IL-10- and IL-4-Deficient and Transgenic Mice. *The Journal of Immunology* 161: 3299-3306.
84. Bolpetti, A., J. S. Silva, L. L. Villa, and A. P. Lepique. 2010. Interleukin-10 production by tumor infiltrating macrophages plays a role in Human Papillomavirus 16 tumor growth. *BMC Immunology* 11: 27.
85. Moritani, M., K. Yoshimoto, F. Tashiro, C. Hashimoto, J. Miyazaki, S. Ii, E. Kudo, H. Iwahana, Y. Hayashi, T. Sano, and et al. 1994. Transgenic expression of IL-10 in pancreatic islet A cells accelerates autoimmune insulinitis and diabetes in non-obese diabetic mice. *Int Immunol* 6: 1927-1936.
86. Kuhn, R., J. Lohler, D. Rennick, K. Rajewsky, and W. Muller. 1993. Interleukin-10-deficient mice develop chronic enterocolitis. *Cell* 75: 263-274.
87. Agarwal, R. K., R. Horai, A. M. Viley, P. B. Silver, R. S. Grajewski, S. Bo Su, A. T. Yazdani, W. Zhu, M. Kronenberg, P. J. Murray, R. L. Rutschman, C.-C. Chan, and R. R. Caspi. 2008. Abrogation of Anti-Retinal Autoimmunity in IL-10 Transgenic Mice Due to



Reduced T Cell Priming and Inhibition of Disease Effector Mechanisms. *The Journal of Immunology* 180: 5423-5429.

88. Jin, S. P., S. J. Koh, D. A. Yu, M. W. Kim, H. T. Yun, D. H. Lee, H. S. Yoon, S. Cho, and H. S. Park. 2018. Imiquimod-applied Interleukin-10 deficient mice better reflects severe and persistent psoriasis with systemic inflammatory state. *Exp Dermatol* 27: 43-49.
89. De Bilbao, F., D. Arsenijevic, T. Moll, I. Garcia-Gabay, P. Vallet, W. Langhans, and P. Giannakopoulos. 2009. In vivo over-expression of interleukin-10 increases resistance to focal brain ischemia in mice. *Journal of Neurochemistry* 110: 12-22.
90. Finnegan, A., C. D. Kaplan, Y. Cao, H. Eibel, T. T. Glant, and J. Zhang. 2003. Collagen-induced arthritis is exacerbated in IL-10-deficient mice. *Arthritis Res Ther* 5: R18-24.
91. Dace, D. S., A. A. Khan, J. L. Stark, J. Kelly, A. H. Cross, and R. S. Apte. 2009. Interleukin-10 Overexpression Promotes Fas-Ligand-Dependent Chronic Macrophage-Mediated Demyelinating Polyneuropathy. *PLOS ONE* 4: e7121.
92. Yin, Z., G. Bahtiyar, N. Zhang, L. Liu, P. Zhu, M. E. Robert, J. McNiff, M. P. Madaio, and J. Craft. 2002. IL-10 regulates murine lupus. *J Immunol* 169: 2148-2155.
93. Rajagopalan, G., Y. C. Kudva, M. M. Sen, E. V. Marietta, N. Murali, K. Nath, J. Moore, and C. S. David. 2006. IL-10-deficiency unmasks unique immune system defects and reveals differential regulation of organ-specific autoimmunity in non-obese diabetic mice. *Cytokine* 34: 85-95.
94. Mumm, John B., J. Emmerich, X. Zhang, I. Chan, L. Wu, S. Mauze, S. Blaisdell, B. Basham, J. Dai, J. Grein, C. Sheppard, K. Hong, C. Cutler, S. Turner, D. LaFace, M. Kleinschek, M. Judo, G. Ayanoglu, J. Langowski, D. Gu, B. Paporello, E. Murphy, V. Sriram, S. Naravula, B. Desai, S. Medicherla, W. Seghezzi, T. McClanahan, S. Cannon-Carlson, Amy M. Beebe, and M. Oft. 2011. IL-10 Elicits IFN $\gamma$ -Dependent Tumor Immune Surveillance. *Cancer Cell* 20: 781-796.
95. Ostlie, N. S., P. I. Karachunski, W. Wang, C. Monfardini, M. Kronenberg, and B. M. Conti-Fine. 2001. Transgenic expression of IL-10 in T cells facilitates development of experimental myasthenia gravis. *J Immunol* 166: 4853-4862.
96. Geng, Y., L. Li, X. Wang, F. He, Y. Zhou, M. Yang, and Y. Xu. 2018. Interleukin-10 polymorphisms affect the key periodontal pathogens in Chinese periodontitis patients. *Sci Rep* 8: 9068.
97. Aggarwal, S., S. Ali, R. Chopra, A. Srivastava, P. Kalaiarasan, D. Malhotra, S. Gochhait, V. K. Garg, S. N. Bhattacharya, and R. N. Bamezai. 2011. Genetic variations and interactions in anti-inflammatory cytokine pathway genes in the outcome of leprosy: a study conducted on a MassARRAY platform. *J Infect Dis* 204: 1264-1273.
98. Budak, F., G. Goral, Y. Heper, E. Yilmaz, F. Aymak, B. Basturk, O. Tore, B. Ener, and H. B. Oral. 2007. IL-10 and IL-6 gene polymorphisms as potential host susceptibility factors in Brucellosis. *Cytokine* 38: 32-36.

99. Ben-Selma, W., Y. Ben-Abderrahmen, J. Boukadida, and H. Harizi. 2012. IL-10R1 S138G loss-of-function polymorphism is associated with extrapulmonary tuberculosis risk development in Tunisia. *Molecular Biology Reports* 39: 51-56.
100. Hakimi, H., M. Zare-Bidaki, N. Zainodini, S. Assar, and M. K. Arababadi. 2014. Significant roles played by IL-10 in Chlamydia infections. *Inflammation* 37: 818-823.
101. Flores, J., H. L. DuPont, S. A. Lee, J. Belkind-Gerson, M. Paredes, J. A. Mohamed, L. Y. Armitige, D. C. Guo, and P. C. Okhuysen. 2008. Influence of host interleukin-10 polymorphisms on development of traveler's diarrhea due to heat-labile enterotoxin-producing *Escherichia coli* in travelers from the United States who are visiting Mexico. *Clin Vaccine Immunol* 15: 1194-1198.
102. Assis, S., C. R. Marques, T. M. Silva, R. S. Costa, N. M. Alcantara-Neves, M. L. Barreto, K. C. Barnes, and C. A. Figueiredo. 2014. IL10 single nucleotide polymorphisms are related to upregulation of constitutive IL-10 production and susceptibility to *Helicobacter pylori* infection. *Helicobacter* 19: 168-173.
103. Alvarado-Arnez, L. E., E. P. Amaral, C. Sales-Marques, S. M. Duraes, C. C. Cardoso, E. Nunes Sarno, A. G. Pacheco, F. C. Lana, and M. O. Moraes. 2015. Association of IL10 Polymorphisms and Leprosy: A Meta-Analysis. *PLoS One* 10: e0136282.
104. Cardona-Castro, N., M. Sanchez-Jimenez, W. Rojas, and G. Bedoya-Berrio. 2012. IL-10 gene promoter polymorphisms and leprosy in a Colombian population sample. *Biomedica* 32: 71-76.
105. Silva, C. A., D. Fernandes, A. C. O. Braga, G. C. Cavalcante, V. A. Sortica, M. H. Hutz, D. Leal, M. R. Fernandes, M. N. Santana-da-Silva, S. E. Lopes Valente, L. F. Pastana, P. D. C. Pinto, G. E. Costa, A. Ribeiro-Dos-Santos, S. Santos, and N. P. C. Santos. 2020. Investigation of genetic susceptibility to *Mycobacterium tuberculosis* (VDR and IL10 genes) in a population with a high level of substructure in the Brazilian Amazon region. *Int J Infect Dis* 98: 447-453.
106. Ke, Z., L. Yuan, J. Ma, X. Zhang, Y. Guo, and H. Xiong. 2015. IL-10 Polymorphisms and Tuberculosis Susceptibility: An Updated Meta-Analysis. *Yonsei Med J* 56: 1274-1287.
107. Shin, H. D., B. L. Park, Y. H. Kim, H. S. Cheong, I. H. Lee, and S. K. Park. 2005. Common interleukin 10 polymorphism associated with decreased risk of tuberculosis. *Exp Mol Med* 37: 128-132.
108. Tesse, R., F. Cardinale, T. Santostasi, A. Polizzi, L. Mappa, A. Manca, F. De Robertis, O. Silecchia, and L. Armenio. 2008. Association of interleukin-10 gene haplotypes with *Pseudomonas aeruginosa* airway colonization in cystic fibrosis. *J Cyst Fibros* 7: 329-332.
109. Pastuszczak, M., B. Jakiela, and A. Wojas-Pelc. 2019. Association of interleukin-10 promoter polymorphisms with serofast state after syphilis treatment. *Sex Transm Infect* 95: 163-168.
110. Sainz, J., L. Hassan, E. Perez, A. Romero, A. Moratalla, E. Lopez-Fernandez, S. Oyonarte, and M. Jurado. 2007. Interleukin-10 promoter polymorphism as risk factor to develop invasive pulmonary aspergillosis. *Immunol Lett* 109: 76-82.

111. Bozzi, A., P. P. Pereira, B. S. Reis, M. I. Goulart, M. C. Pereira, E. P. Pedroso, M. F. Leite, and A. M. Goes. 2006. Interleukin-10 and tumor necrosis factor-alpha single nucleotide gene polymorphism frequency in paracoccidioidomycosis. *Hum Immunol* 67: 931-939.
112. Hajilooi, M., K. Sardarian, M. Dadmanesh, M. Matini, P. Lotfi, A. Bazmani, M. A. Tabatabaiefar, M. K. Arababadi, and M. Momeni. 2013. Is the IL-10 -819 polymorphism associated with visceral leishmaniasis? *Inflammation* 36: 1513-1518.
113. Salhi, A., V. Rodrigues, Jr., F. Santoro, H. Dessen, A. Romano, L. R. Castellano, M. Sertorio, S. Rafati, C. Chevillard, A. Prata, A. Alcañs, L. Argiro, and A. Dessen. 2008. Immunological and genetic evidence for a crucial role of IL-10 in cutaneous lesions in humans infected with *Leishmania braziliensis*. *J Immunol* 180: 6139-6148.
114. Ndila, C. M., S. Uyoga, A. W. Macharia, G. Nyutu, N. Peshu, J. Ojal, M. Shebe, K. O. Awuondo, N. Mturi, B. Tsofa, N. Sepúlveda, T. G. Clark, G. Band, G. Clarke, K. Rowlands, C. Hubbart, A. Jeffreys, S. Kariuki, K. Marsh, M. Mackinnon, K. Maitland, D. P. Kwiatkowski, K. A. Rockett, T. N. Williams, and G. E. N. C. Malaria. 2018. Human candidate gene polymorphisms and risk of severe malaria in children in Kilifi, Kenya: a case-control association study. *Lancet Haematol* 5: e333-e345.
115. Adedija, A., N. X. Hoan, H. van Tong, S. Adukpo, D. B. Tijani, A. A. Akanbi, 2nd, C. G. Meyer, O. Ojurongbe, and T. P. Velavan. 2018. Differential contribution of interleukin-10 promoter variants in malaria and schistosomiasis mono- and co-infections among Nigerian children. *Trop Med Int Health* 23: 45-52.
116. Silva, P. C., A. V. Gomes, T. K. de Souza, M. R. Coêlho, G. G. Cahu, M. T. Muniz, and A. L. Domingues. 2014. Association of SNP (-G1082A) IL-10 with increase in severity of periportal fibrosis in schistosomiasis, in the northeast of Brazil. *Genet Test Mol Biomarkers* 18: 646-652.
117. Wujcicka, W., J. Wilczyński, E. Śpiewak, and D. Nowakowska. 2018. Genetic modifications of cytokine genes and *Toxoplasma gondii* infections in pregnant women. *Microb Pathog* 121: 283-292.
118. Naranjo-Galvis, C. A., A. de-la-Torre, L. E. Mantilla-Muriel, L. Beltrán-Angarita, X. Elcoroaristizabal-Martín, R. McLeod, N. Alliey-Rodriguez, I. J. Begeman, C. López de Mesa, J. E. Gómez-Marín, and J. C. Sepúlveda-Arias. 2018. Genetic Polymorphisms in Cytokine Genes in Colombian Patients with Ocular Toxoplasmosis. *Infect Immun* 86.
119. Mantilla-Muriel, L. E., A. Hernández-de-Los-Ríos, M. Rincón, A. de-la-Torre, M. Murillo-León, N. Cardona, M. F. Cesbron-Delauw, C. Mercier, J. C. Sepúlveda-Arias, and J. E. Gomez-Marin. 2020. Serotyping, host genes and cytokines response in human ocular toxoplasmosis. *Microb Pathog* 148: 104465.
120. Costa, G. C., M. O. da Costa Rocha, P. R. Moreira, C. A. Menezes, M. R. Silva, K. J. Gollob, and W. O. Dutra. 2009. Functional IL-10 gene polymorphism is associated with Chagas disease cardiomyopathy. *J Infect Dis* 199: 451-454.
121. Zhao, N., J. Li, Z. Z. Chen, Z. F. Chu, and Z. B. Chen. 2019. [Association of interleukin-10 gene polymorphism with enterovirus 71 infection in children]. *Zhongguo Dang Dai Er Ke Za Zhi* 21: 789-795.

122. Gruber, S. G., M. Gloria Luciani, P. Grundtner, A. Zdanov, and C. Gasche. 2008. Differential signaling of cmvIL-10 through common variants of the IL-10 receptor 1. *European Journal of Immunology* 38: 3365-3375.
123. Tang, N., J. Huang, C. Chen, X. Wu, H. Xu, G. Chen, and H. Xue. 2021. Polymorphisms and haplotypes of IL2RA, IL10, IFNG, IRF5, and CCR2 are associated with Epstein-Barr virus-associated hemophagocytic lymphohistiocytosis in children. *Pediatr Blood Cancer*: e29097.
124. Chen, D. Q., Y. Zeng, J. Zhou, L. Yang, S. Jiang, J. D. Huang, L. Lu, and B. J. Zheng. 2010. Association of candidate susceptible loci with chronic infection with hepatitis B virus in a Chinese population. *J Med Virol* 82: 371-378.
125. Truelove, A. L., T. K. Oleksyk, S. Shrestha, C. L. Thio, J. J. Goedert, S. M. Donfield, G. D. Kirk, D. L. Thomas, S. J. O'Brien, and M. W. Smith. 2008. Evaluation of IL10, IL19 and IL20 gene polymorphisms and chronic hepatitis B infection outcome. *Int J Immunogenet* 35: 255-264.
126. Zhang, Y., L. Chen, and H. Chen. 2020. Associations between polymorphisms in IL-10 gene and the risk of viral hepatitis: a meta-analysis. *Gut Pathog* 12: 36.
127. Hofer, H., J. B. Neufeld, C. Oesterreicher, P. Grundtner, F. Wrba, A. Gangl, P. Ferenci, and C. Gasche. 2005. Bi-allelic presence of the interleukin-10 receptor 1 G330R allele is associated with cirrhosis in chronic HCV-1 infection. *Genes Immun* 6: 242-247.
128. Hennig, B. J., A. J. Frodsham, S. Hellier, S. Knapp, L. J. Yee, M. Wright, L. Zhang, H. C. Thomas, M. Thursz, and A. V. Hill. 2007. Influence of IL-10RA and IL-22 polymorphisms on outcome of hepatitis C virus infection. *Liver Int* 27: 1134-1143.
129. Hemedat, A. A., A. Ahmad Mohamed, R. K. Aziz, M. S. Abdel-Hakeem, and M. Ali-Tammam. 2021. Impact of IL10, MTP, SOD2, and APOE Gene Polymorphisms on the Severity of Liver Fibrosis Induced by HCV Genotype 4. *Viruses* 13.
130. Ye, S., X. Zhang, Y. B. Zhang, X. Tian, A. Liu, C. Cui, L. Shi, and D. Xia. 2020. Association of TLR3 (rs3775291) and IL-10 (rs1800871) gene polymorphisms with susceptibility to Hepatitis B infection: A meta-analysis. *Epidemiol Infect* 148: e228.
131. Naicker, D. D., L. Werner, E. Kormuth, J. A. Passmore, K. Mlisana, S. A. Karim, T. Ndung'u, and C. A. I. S. Team. 2009. Interleukin-10 promoter polymorphisms influence HIV-1 susceptibility and primary HIV-1 pathogenesis. *J Infect Dis* 200: 448-452.
132. Harishankar, M., H. Ravikrishnan, A. Ravishankar, L. E. Hanna, S. Swaminathan, P. Selvaraj, and R. Bethunaickan. 2018. IL-10 Promoter -592 Polymorphism may Influence Susceptibility to HIV Infection in South Indian Population. *Curr HIV Res* 16: 58-63.
133. Berti, F. C. B., A. P. L. Pereira, K. P. Trugilo, G. C. M. Cebinelli, L. Silva, M. A. B. Lozovoy, A. N. C. Simão, M. A. E. Watanabe, and K. B. de Oliveira. 2017. IL-10 gene polymorphism c.-592C>A increases HPV infection susceptibility and influences IL-10 levels in HPV infected women. *Infect Genet Evol* 53: 128-134.
134. Shirdel, A., M. R. Azarpazhooh, M. Sahebari, M. Ghanbari, S. Z. Mirfeizi, I. Hutchinson, A. Ziaee, and H. Rafatpanah. 2013. Association of IL-10 Gene Polymorphisms and Human T

- Lymphotropic Virus Type I-Associated Myelopathy/tropical Spastic Paraparesis in North-East of Iran (Mashhad). *Iran J Basic Med Sci* 16: 258-263.
135. Rogo, L. D., F. Rezaei, S. M. Marashi, M. S. Yekaninejad, M. Naseri, N. Ghavami, and T. Mokhtari-Azad. 2016. Seasonal influenza A/H3N2 virus infection and IL-1B, IL-10, IL-17, and IL-28 polymorphisms in Iranian population. *J Med Virol* 88: 2078-2084.
136. Helminen, M., K. Nuolivirta, M. Virta, A. Halkosalo, M. Korppi, T. Vesikari, and M. Hurme. 2008. IL-10 gene polymorphism at -1082 A/G is associated with severe rhinovirus bronchiolitis in infants. *Pediatr Pulmonol* 43: 391-395.
137. Holster, A., J. Terasjarvi, J. Vuononvirta, P. Koponen, V. Peltola, M. Helminen, Q. He, M. Korppi, and K. Nuolivirta. 2018. Polymorphisms in the promoter region of IL10 gene are associated with virus etiology of infant bronchiolitis. *World J Pediatr* 14: 594-600.
138. Leite, M. M., F. F. Gonzalez-Galarza, B. Silva, D. Middleton, and E. Santos. 2021. Predictive immunogenetic markers in COVID-19. *Hum Immunol* 82: 247-254.
139. Barkhash, A. V., V. N. Babenko, M. I. Voevoda, and A. G. Romaschenko. 2016. Association of IL28B and IL10 gene polymorphism with predisposition to tick-borne encephalitis in a Russian population. *Ticks Tick Borne Dis* 7: 808-812.
140. Onishchenko, N., Y. Riabokon, and E. Riabokon. 2018. CLINICAL-PATHOGENETICAL ROLE OF TOLL-LIKE RECEPTOR 2 (RS 5743708) AND INTERLEUKIN-10 (RS 1800896) GENES POLYMORPHISM IN THE COURSE OF HERPES ZOSTER IN ADULTS. *Georgian Med News*: 81-86.
141. Javor, J., K. Králinský, E. Sádová, O. Červeňová, M. Bucová, M. Olejárová, M. Buc, and A. Liptáková. 2014. Association of interleukin-10 gene promoter polymorphisms with susceptibility to acute pyelonephritis in children. *Folia Microbiol (Praha)* 59: 307-313.
142. Yoo, K. H., S. K. Kim, J. H. Chung, and S. G. Chang. 2011. Association of IL10, IL10RA, and IL10RB polymorphisms with benign prostate hyperplasia in Korean population. *J Korean Med Sci* 26: 659-664.
143. Chatterjee, R., J. Batra, A. Kumar, U. Mabalirajan, S. Nahid, P. V. Niphadkar, and B. Ghosh. 2005. Interleukin-10 promoter polymorphisms and atopic asthma in North Indians. *Clin Exp Allergy* 35: 914-919.
144. Hussain, S. K., M. M. Madeleine, L. G. Johnson, Q. Du, D. A. Galloway, J. R. Daling, M. Malkki, E. W. Petersdorf, and S. M. Schwartz. 2013. Nucleotide variation in IL-10 and IL-12 and their receptors and cervical and vulvar cancer risk: a hybrid case-parent triad and case-control study. *Int J Cancer* 133: 201-213.
145. Yang, R., J. Duan, F. Luo, P. Tao, and C. Hu. 2020. IL-6, IL-8 and IL-10 polymorphisms may impact predisposition of Alzheimer's disease: a meta-analysis. *Acta Neurol Belg*.
146. Bagnoli, S., E. Cellini, A. Tedde, B. Nacmias, S. Piacentini, V. Bessi, L. Bracco, and S. Sorbi. 2007. Association of IL10 promoter polymorphism in Italian Alzheimer's disease. *Neuroscience Letters* 418: 262-265.

147. Sivula, J., H. Turpeinen, L. Volin, and J. Partanen. 2009. Association of IL-10 and IL-10Rbeta gene polymorphisms with graft-versus-host disease after haematopoietic stem cell transplantation from an HLA-identical sibling donor. *BMC Immunol* 10: 24.
148. Wang, N. G., D. C. Wang, B. Y. Tan, F. Wang, and Z. N. Yuan. 2015. TNF-alpha and IL10 polymorphisms interaction increases the risk of ankylosing spondylitis in Chinese Han population. *Int J Clin Exp Pathol* 8: 15204-15209.
149. Xia, Y., Y. Liang, S. Guo, J. G. Yu, M. S. Tang, P. H. Xu, F. D. Qin, and G. P. Wang. 2018. Association between cytokine gene polymorphisms and ankylosing spondylitis susceptibility: a systematic review and meta-analysis. *Postgrad Med J* 94: 508-516.
150. Moran, C. J., T. D. Walters, C. H. Guo, S. Kugathasan, C. Klein, D. Turner, V. M. Wolters, R. H. Bandsma, M. Mouzaki, M. Zachos, J. C. Langer, E. Cutz, S. M. Benseler, C. M. Roifman, M. S. Silverberg, A. M. Griffiths, S. B. Snapper, and A. M. Muise. 2013. IL-10R polymorphisms are associated with very-early-onset ulcerative colitis. *Inflamm Bowel Dis* 19: 115-123.
151. Yousefi, A., A. Zare Bidoki, A. Shafioyoun, M. Sadr, F. N. Varzaneh, M. Shabani, F. Motamed, F. Farahmand, A. Khodadad, G. Fallahi, M. Najafi, and N. Rezaei. 2019. Association of IL-10 and TGF-beta cytokine gene polymorphisms with autoimmune hepatitis. *Clin Res Hepatol Gastroenterol* 43: 45-50.
152. Hermann, J., S. Gruber, J. B. Neufeld, P. Grundtner, M. Graninger, W. B. Graninger, A. Berghold, and C. Gasche. 2009. IL10R1 loss-of-function alleles in rheumatoid arthritis and systemic lupus erythematosus. *Clin Exp Rheumatol* 27: 603-608.
153. Jung, J. H., G. G. Song, J. H. Kim, and S. J. Choi. 2016. Association of Interleukin 10 Gene Polymorphisms with Autoimmune Thyroid Disease: Meta-Analysis. *Scand J Immunol* 84: 272-277.
154. Peng, H., C. Y. Liu, M. Zhou, P. F. Wen, M. Zhang, L. J. Qiu, J. Ni, Y. Liang, H. F. Pan, and D. Q. Ye. 2013. IL-10RB rs2834167 (A/G) polymorphism is associated with the susceptibility to systemic lupus erythematosus: evidence from a study in Chinese Han population. *Inflammation* 36: 1218-1224.
155. Jung, J. H., G. G. Song, J. H. Kim, and S. J. Choi. 2019. The associations between interleukin 10 polymorphisms and susceptibility to autoimmune uveitis - a meta-analysis. *Cent Eur J Immunol* 44: 246-252.
156. Hikami, K., Y. Ehara, M. Hasegawa, M. Fujimoto, M. Matsushita, T. Oka, K. Takehara, S. Sato, K. Tokunaga, and N. Tsuchiya. 2008. Association of IL-10 receptor 2 (IL10RB) SNP with systemic sclerosis. *Biochemical and Biophysical Research Communications* 373: 403-407.
157. Patricia Gallegos-Arreola, M., G. M. Zúñiga González, L. E. Figuera, A. M. Puebla Pérez, and J. I. Delgado Saucedo. 2019. Association of the IL-10 gene rs1800872 (-592 C>A) polymorphism with breast cancer in a Mexican population. *J buon* 24: 2369-2376.
158. Xu, G., and F. Wang. 2020. Associations of polymorphisms in interleukins with susceptibility to breast cancer: Evidence from a meta-analysis. *Cytokine* 130: 154988.

159. Datta, A., F. Tuz Zahora, M. Abdul Aziz, M. Sarowar Uddin, M. Ferdous, M. Shalahuddin Millat, M. Shahid Sarwar, M. Abdul Barek, S. Jafrin, S. Nahar, and M. Safiqul Islam. 2020. Association study of IL10 gene polymorphisms (rs1800872 and rs1800896) with cervical cancer in the Bangladeshi women. *Int Immunopharmacol* 89: 107091.
160. Pereira, A. P. L., K. P. Trugilo, N. C. M. Okuyama, M. M. Sena, J. D. Couto-Filho, M. A. E. Watanabe, and K. B. de Oliveira. 2020. IL-10 c.-592C>A (rs1800872) polymorphism is associated with cervical cancer. *J Cancer Res Clin Oncol* 146: 1971-1978.
161. Armingohar, Z., J. J. Jorgensen, A. K. Kristoffersen, K. Schenck, and Z. Dembic. 2015. Polymorphisms in the interleukin-10 gene and chronic periodontitis in patients with atherosclerotic and aortic aneurysmal vascular diseases. *J Oral Microbiol* 7: 26051.
162. Jaradat, S. M., K. T. Ababneh, S. A. Jaradat, M. S. Abadi, A. H. Taha, J. A. Karasneh, and H. I. Haddad. 2012. Association of interleukin-10 gene promoter polymorphisms with chronic and aggressive periodontitis. *Oral Dis* 18: 271-279.
163. El Helaly, R. M., R. R. Elzehery, O. A. El-Emam, H. A. El Domiaty, W. R. Elbohy, H. M. Aboelenin, and N. A. Salem. 2021. Genetic association between interleukin-10 gene rs1518111 and rs3021094 polymorphisms and risk of type 1 diabetes and diabetic nephropathy in Egyptian children and adolescents. *Pediatr Diabetes* 22: 567-576.
164. Naing, C., N. H. Htet, A. K. Basavaraj, and S. Nalliah. 2018. An association between IL-10 promoter polymorphisms and diabetic nephropathy: a meta-analysis of case-control studies. *J Diabetes Metab Disord* 17: 333-343.
165. Ma, D. H., Q. Y. Xu, Y. Liu, Q. Q. Zhai, and M. H. Guo. 2016. Association between interleukin-10 gene polymorphisms and susceptibility to diabetic nephropathy in a Chinese population. *Genet Mol Res* 15.
166. Lin, M. T., B. Storer, P. J. Martin, L. H. Tseng, T. Gooley, P. J. Chen, and J. A. Hansen. 2003. Relation of an interleukin-10 promoter polymorphism to graft-versus-host disease and survival after hematopoietic-cell transplantation. *N Engl J Med* 349: 2201-2210.
167. Vera-Lozada, G., C. Minnicelli, P. Segges, G. Stefanoff, F. Kristcevic, J. Ezpeleta, E. Tapia, G. Niedobitek, M. H. M. Barros, and R. Hassan. 2018. Interleukin 10 (IL10) proximal promoter polymorphisms beyond clinical response in classical Hodgkin lymphoma: Exploring the basis for the genetic control of the tumor microenvironment. *Oncoimmunology* 7: e1389821.
168. Quiroz-Cruz, S., B. Posada-Reyes, T. Alatorre-García, C. M. Del Real-Calzada, X. García-Samper, A. Escobar-Gutiérrez, C. A. Vázquez-Chacón, J. A. Martínez-Guarneros, M. Cruz-Rivera, G. Vaughan, and S. Fonseca-Coronado. 2020. Genetic polymorphisms present in IL10, IL23R, NOD2, and ATG16L1 associated with susceptibility to inflammatory bowel disease in Mexican population. *Eur J Gastroenterol Hepatol* 32: 10-16.
169. Su, Y., and H. Zhao. 2020. Predisposition of Inflammatory Bowel Disease Is Influenced by IL-8, IL-10, and IL-18 Polymorphisms: A Meta-Analysis. *Int Arch Allergy Immunol* 181: 799-806.

170. Al-Naseri, M. A., E. D. Salman, and A. H. Ad'hiah. 2019. Association between interleukin-4 and interleukin-10 single nucleotide polymorphisms and multiple sclerosis among Iraqi patients. *Neurol Sci* 40: 2383-2389.
171. Isac, L., and S. Jiquan. 2019. Interleukin 10 promotor gene polymorphism in the pathogenesis of psoriasis. *Acta Dermatovenol Alp Pannonica Adriat* 28: 119-123.
172. Abdallah, A. M., A. Alnuzha, A. H. Al-Mazroea, A. E. Eldardear, A. Y. AlSamman, Y. Almohammadi, and K. M. Al-Harbi. 2016. IL10 Promoter Polymorphisms are Associated with Rheumatic Heart Disease in Saudi Arabian Patients. *Pediatr Cardiol* 37: 99-105.
173. Liu, Q., J. Yang, H. He, Y. Yu, and J. Lyu. 2018. Associations between interleukin-10 polymorphisms and susceptibility to rheumatoid arthritis: a meta-analysis and meta-regression. *Clin Rheumatol* 37: 3229-3237.
174. Choi, K. Y., J. M. Choo, Y. J. Lee, Y. Lee, C. H. Cho, S. H. Kim, and H. J. Lee. 2020. Association between the IL10 rs1800896 Polymorphism and Tardive Dyskinesia in Schizophrenia. *Psychiatry Investig* 17: 1031-1036.
175. Al-Asmary, S. M., S. Kadasah, M. Arfin, M. Tariq, and A. Al-Asmari. 2014. Genetic Variants of Interleukin-10 Gene Promoter are Associated with Schizophrenia in Saudi Patients: A Case-Control Study. *N Am J Med Sci* 6: 558-565.
176. Colafrancesco, S., C. Ciccacci, R. Priori, A. Latini, G. Picarelli, F. Arienzo, G. Novelli, G. Valesini, C. Perricone, and P. Borgiani. 2019. STAT4, TRAF3IP2, IL10, and HCP5 Polymorphisms in Sjogren's Syndrome: Association with Disease Susceptibility and Clinical Aspects. *J Immunol Res* 2019: 7682827.
177. Ben-Eli, H., N. Gomel, D. J. Aframian, R. Abu-Seir, R. Perlman, E. Ben-Chetrit, D. Mevorach, G. Kleinstern, O. Paltiel, and A. Solomon. 2019. SNP variations in IL10, TNF $\alpha$  and TNFAIP3 genes in patients with dry eye syndrome and Sjogren's syndrome. *J Inflamm (Lond)* 16: 6.
178. Manolova, I., L. Miteva, M. Ivanova, T. Kundurzhiev, R. Stoilov, and S. Stanilova. 2018. The Synergistic Effect of TNFA and IL10 Promoter Polymorphisms on Genetic Predisposition to Systemic Lupus Erythematosus. *Genet Test Mol Biomarkers* 22: 135-140.
179. Umare, V., V. Pradhan, S. Dadheech, A. Rajadhyaksha, K. Ghosh, and A. Nadkarni. 2020. Clinical implications of IL-10 promoter polymorphisms on disease susceptibility in Indian SLE patients. *Lupus* 29: 587-598.
180. Yuan, Y., X. Wang, L. Ren, Y. Kong, J. Bai, and Y. Yan. 2019. Associations between interleukin-10 gene polymorphisms and systemic lupus erythematosus risk: a meta-analysis with trial sequential analysis. *Clin Exp Rheumatol* 37: 242-253.
181. Mohammadi, S., M. Saghaeian Jazi, M. Zare Ebrahimabad, F. Eghbalpour, N. Abdolahi, A. Tabarraei, and Y. Yazdani. 2019. Interleukin 10 gene promoter polymorphisms (rs1800896, rs1800871 and rs1800872) and haplotypes are associated with the activity of systemic lupus erythematosus and IL10 levels in an Iranian population. *Int J Immunogenet* 46: 20-30.



182. El Ghannam, D., I. M. Fawzy, E. Azmy, H. Hakim, and I. Eid. 2015. Relation of interleukin-10 Promoter Polymorphisms to Adult Chronic Immune Thrombocytopenic Purpura in a Cohort of Egyptian Population. *Immunol Invest* 44: 616-626.
183. Rytönen, S., J. Ritari, J. Perasaari, V. Saarela, M. Nuutinen, and T. Jahnukainen. 2019. IL-10 polymorphisms +434T/C, +504G/T, and -2849C/T may predispose to tubulointerstitial nephritis and uveitis in pediatric population. *PLoS One* 14: e0211915.