citation #	Time	Expressed/Observed Phenotype	Diet Use	Title	Citation	Link
				ApoE deficient		
1	10 days	increased total adipose tissue and heavier liver weight	Atherogenic	BSN723T prevents atherosclerosis and weight gain in ApoE knockout mice fed a western diet	Williams, J., Ensor, C., Gardner, S., Smith, R., & Lodder, R. (2015). BSN723T prevents atherosclerosis and weight gain in ApoE knockout mice fed a western diet. Webmedcentral, 6(12).	https://pmc.ncbi.nlm.nih.gov/articles/PMC5036941/
2	6-10 days	increased plasma cholesterol	Atherogenic	ApoE-deficient mice develop lesions of all phases of atherosclerosis throughout the arterial tree	Nakashima, Y., Plump, A. S., Raines, E. W., Breslow, J. L., & Ross, R. (1994). ApoE-deficient mice develop lesions of all phases of atherosclerosis throughout the arterial tree. Arteriosclerosis and thrombosis: a journal of vascular biology, 14(1), 133-140.	https://www.ahajournals.org/doi/abs/10.1161/01.atv.14.1.133
3	3 weeks	increased plasma cholesterol	Atherogenic	ApoC-III inhibits clearance of triglyceride-rich lipoproteins through LDL family receptors	ApoC-III inhibits clearance of triglyceride-rich lipoproteins through LDL family receptors. The Journal of clinical investigation, 126(8), 2855-2866.	https://www.jci.org/articles/view/86610
4	6-10 weeks	foam cell and lesion development	Atherogenic	Ablation of Myeloid ADK (Adenosine Kinase) Epigenetically Suppresses Atherosclerosis in ApoE−/− (Apolipoprotein E Deficient) Mice	Zhang, M., Zeng, X., Yang, Q., Xu, J., Liu, Z., Zhou, Y., ... & Huo, Y. (2018). Ablation of myeloid ADK (adenosine kinase) epigenetically suppresses atherosclerosis in ApoE−/−(apolipoprotein E deficient) mice. Arteriosclerosis, thrombosis, and vascular biology, 38(12), 2780-2792.	https://www.ahajournals.org/doi/full/10.1161/ATVBAHA.118.311806
				Ldlr Deficient		
5	2 weeks	plasma cholesterol increases to >800 mg/dL and triglycerides increases to >300 mg/dL	Atherogenic	Diet-induced diabetes activates an osteogenic gene regulatory program in the aortas of low density lipoprotein receptor-deficient mice	Towler, D. A., Bidder, M., Latifi, T., Coleman, T., & Semenkovich, C. F. (1998). Diet-induced diabetes activates an osteogenic gene regulatory program in the aortas of low density lipoprotein receptor-deficient mice. Journal of Biological Chemistry, 273(46), 30427-30434.	https://www.sciencedirect.com/science/article/pii/S0021925819592559
6	8 weeks	foamy macrophages and atherosclerosis are present	Atherogenic	Adrenal gland macrophages regulate glucocorticoid production through Trem2 and TGF-β	Xu, Y., Patterson, M. T., Dolfi, B., Zhu, A., Bertola, A., Schrank, P. R., ... & Williams, J. W. (2024). Adrenal gland macrophages regulate glucocorticoid production through Trem2 and TGFβ. JCI insight	https://pmc.ncbi.nlm.nih.gov/articles/PMC11383592/
7	6-10 weeks	foam cells, hyperglycemia, hyperinsulinemia, dyslipidemia, and lesion development	Atherogenic	FoxOs integrate pleiotropic actions of insulin in vascular endothelium to protect mice from atherosclerosis	Tsuchiya, K., Tanaka, J., Shuiqing, Y., Welch, C. L., DePinho, R. A., Tabas, I., ... & Accili, D. (2012). FoxOs integrate pleiotropic actions of insulin in vascular endothelium to protect mice from atherosclerosis. Cell metabolism, 15(3), 372-381	https://www.cell.com/cell-metabolism/fulltext/S1550-4131(12)00049-6
8	6-10 weeks	foam cells, hyperglycemia, hyperinsulinemia, dyslipidemia, and lesion development	Atherogenic	Increased LDL cholesterol and atherosclerosis in LDL receptor–deficient mice with attenuated expression of scavenger receptor B1	Huszar, D., Varban, M. L., Rinninger, F., Feeley, R., Arai, T., Fairchild-Huntress, V., ... & Tall, A. R. (2000). Increased LDL Cholesterol and Atherosclerosis in LDL Receptor–Deficient Mice With Attenuated Expression of Scavenger Receptor B1. Arteriosclerosis, thrombosis, and vascular biology, 20(4), 1068-1073	https://www.ahajournals.org/doi/full/10.1161/01.ATV.20.4.1068
9	16 weeks	atherosclerotic lesions and hypertension	Atherogenic	High Fat High Cholesterol Diet (Western Diet) Aggravates Atherosclerosis, Hyperglycemia and Renal Failure in Nephrectomized LDL Receptor Knockout Mice: Role of Intestine Derived Lipopolysaccharide	Ghosh, S. S., Righi, S., Krieg, R., Kang, L., Carl, D., Wang, J., ... & Ghosh, S. (2015). High fat high cholesterol diet (western diet) aggravates atherosclerosis, hyperglycemia and renal failure in nephrectomized LDL receptor knockout mice: role of intestine derived lipopolysaccharide. PloS one, 10(11), e0141109.	https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0141109
				C57BL/6		
10	3 weeks	inflammatory cell infiltration and inflammation	DIO	Obesity enhances non-Th2 airway inflammation in a murine model of allergic asthma	Mohamed, M. M., & Amrani, Y. (2024). Obesity Enhances Non-Th2 Airway Inflammation in a Murine Model of Allergic Asthma. International Journal of Molecular Sciences, 25(11), 6170.	https://www.mdpi.com/1422-0067/25/11/6170
11	4 weeks	obesity, increased sphingolipids and pro-inflammatory cytokine circulation	DIO	Chronic high fat diet consumption impairs metabolic health of male mice	Morselli, E., Criollo, A., Rodriguez-Navas, C., & Clegg, D. J. (2014). Chronic high fat diet consumption impairs metabolic health of male mice. Inflammation and cell signaling, 1(6), e561.	https://pmc.ncbi.nlm.nih.gov/articles/PMC4451571/
12	8 weeks	increased circulating non-esterified free fatty acids	DIO	Endothelin receptor antagonism improves glucose handling, dyslipidemia, and adipose tissue inflammation in obese mice	Rivera-Gonzalez, O., Wilson, N. A., Coats, L. E., Taylor, E. B., & Speed, J. S. (2021). Endothelin receptor antagonism improves glucose handling, dyslipidemia, and adipose tissue inflammation in obese mice. Clinical Science, 135(14), 1773-1789.	https://portlandpress.com/clinsci/article-abstract/135/14/1773/229264/Endothelin-receptor-antagonism-improves-glucose
13	14 weeks	increased body weight	DIO	High-Fat Diets Fed during Pregnancy Cause Changes to Pancreatic Tissue DNA Methylation and Protein Expression in the Offspring: A Multi-Omics Approach	Eileen, L., & Peterson, M. (2024). High-Fat Diets Fed during Pregnancy Cause Changes to Pancreatic Tissue DNA Methylation and Protein Expression in the Offspring: A Multi-Omics Approach. International Journal of Molecular Sciences, 25(13), 7317.	https://www.mdpi.com/1422-0067/25/13/7317
	16 weeks	obesity and insulin intolerance	DIO	Glucose intolerance as a consequence of hematopoietic stem cell dysfunction in offspring of obese mice	Denizli M, Ropa J, Beasley L, Ghosh J, DeVanna K, Spice T, Haneline LS, Capitano M, Kua KL. Glucose intolerance as a consequence of hematopoietic stem cell dysfunction in offspring of obese mice. Mol Metab. 2024 Oct;88:102008. doi: 10.1016/j.molmet.2024.102008. Epub 2024 Aug 12. PMID: 39142562; PMCID: PMC11395717.	https://www.sciencedirect.com/science/article/pii/S221287782400139X?ref=pdf_download&fr=RR-2&rr=968764fdbb62f60c

	12-18 weeks	obestiy	DIO	Diet-induced obesity reduces bone marrow T and B cells and promotes tumor progression in a transplantable Vk*MYC model of multiple myeloma	Nedal TMV, Moen SH, Roseth IA, Tryggestad SS, Aass KR, Hov GG, Hella H, Sponaas AM, Standal T. Diet-induced obesity reduces bone marrow T and B cells and promotes tumor progression in a transplantable Vk*MYC model of multiple myeloma. Sci Rep. 2024 Feb 13;14(1):3643. doi: 10.1038/s41598-024-54193-8. PMID: 38351079; PMCID:	https://pmc.ncbi.nlm.nih.gov/articles/PMC10864380/
			C57BL/6			
14	8 weeks	inflammation in bone marrow-derived macrophages	MASLD*	Vertical Transfer of Maternal Gut Microbes to Offspring of Western Diet-Fed Dams Drives Reduced Levels of Tryptophan Metabolites and Postnatal Innate Immune Response	Sugino, K. Y., Janssen, R. C., McMahan, R. H., Zimmerman, C., Friedman, J. E., & Jonscher, K. R. (2024). Vertical Transfer of Maternal Gut Microbes to Offspring of Western Diet-Fed Dams Drives Reduced Levels of Tryptophan Metabolites and Postnatal Innate Immune Response. Nutrients, 16(12), 1808.	https://www.mdpi.com/2072-6643/16/12/1808
15	20 weeks	increased free fatty acid circulation and mild steatosis	MASLD*	Peridroplet mitochondria are associated with the severity of MASLD and the prevention of MASLD by diethyldithiocarbamate	Sun, X., Yu, Q., Qi, Y., Kang, B., Zhao, X., Liu, L., ... & Liu, T. (2024). Peridroplet Mitochondria Are Associated with the Severity of MASLD and the Prevention of MASLD by Diethyldithiocarbamate. Journal of Lipid Research, 65(8), 100590.	https://www.sciencedirect.com/science/article/pii/S0022227524000956
16	52 weeks	obesity, liver injury, dyslipidemia, and insulin resistance	MASLD*	Dynamic changes in immune cell populations by AXL kinase targeting diminish liver inflammation and fibrosis in experimental MASH	Grøndal, S. M., Tutusaus, A., Boix, L., Reig, M., Blø, M., Hodneland, L., ... & Marí, M. (2024). Dynamic changes in immune cell populations by AXL kinase targeting diminish liver inflammation and fibrosis in experimental MASH. Frontiers in Immunology, 15, 1400553.	https://www.frontiersin.org/journals/immunology/articles/10.3389/fimmu.2024.1400553/full

** Primarily for MASLD; for MASH-like phenotype expression, feed more than 36 weeks*

Ingredient matched, low fat control diet references	
TD.05230	
Bisanz, J. E., Upadhyay, V., Turnbaugh, J. A., Ly, K., & Turnbaugh, P. J. (2019). Meta-analysis reveals reproducible gut microbiome alterations in response to a high-fat diet. Cell host & microbe, 26(2), 265-272.	
Coronado-Cáceres, L. J., Hernández-Ledesma, B., Mojica, L., Quevedo-Corona, L., Rabadán-Chávez, G., Castillo-Herrera, G. A., & Lugo Cervantes, E. (2021). Cocoa (Theobroma cacao L.) seed-derived peptides reduce blood pressure by interacting with the catalytic site of the angiotensin-converting enzyme. Foods, 10(10), 2340.	https://pubmed.ncbi.nlm.nih.gov/31324413/ https://www.mdpi.com/2304-8158/10/10/2340
Lockhart, S. M., Muso, M., Zvetkova, I., Lam, B. Y., Ferrari, A., Schoenmakers, E., ... & O'Rahilly, S. (2024). Damaging mutations in liver X receptor-α are hepatotoxic and implicate cholesterol sensing in liver health. Nature metabolism, 6(10), 1922-1938.	https://www.nature.com/articles/s42255-024-01126-4
Urbizo-Reyes, U., Liceaga, A. M., Reddivari, L., Li, S., Kim, K. H., Cox, A. D., & Anderson, J. M. (2022). Canary Seed (Phalaris canariensis L.) Peptides Prevent Obesity and Glucose Intolerance in Mice Fed a Western Diet. International Journal of Molecular Sciences, 23(23), 14927.	https://www.mdpi.com/1422-0067/23/23/14927
TD.08485	
Bruno, M. E., Mukherjee, S., Powell, W. L., Mori, S. F., Wallace, F. K., Balasuriya, B. K., ... & Starr, M. E. (2022). Accumulation of γδ T cells in visceral fat with aging promotes chronic inflammation. Geroscience, 44(3), 1761-1778.	https://link.springer.com/article/10.1007/s11357-022-00572-w
Collins, A. T., Hu, G., Newman, H., Reinsvold, M. H., Goldsmith, M. R., Twomey-Kozak, J. N., ... & Karner, C. M. (2021). Obesity alters the collagen organization and mechanical properties of murine cartilage. Scientific reports, 11(1), 1626.	https://pubmed.ncbi.nlm.nih.gov/33452305/
Ghrayeb, A., Finney, A. C., Agranovich, B., Peled, D., Anand, S. K., McKinney, M. P., ... & Gottlieb, E. (2024). Serine synthesis via reversed SHMT2 activity drives glycine depletion and acetaminophen hepatotoxicity in MASLD. Cell Metabolism, 36(1), 116-129.	https://www.cell.com/cell-metabolism/fulltext/S1550-4131(23)00464-3?uuid=uuid%3Abaa9fb53-1072-4a54-94d6-d0da697189b1
Kulas, J. A., Franklin, W. F., Smith, N. A., Manocha, G. D., Puig, K. L., Nagamoto-Combs, K., ... & Combs, C. K. (2019). Ablation of amyloid precursor protein increases insulin-degrading enzyme levels and activity in brain and peripheral tissues. American	https://journals.physiology.org/doi/full/10.1152/ajpendo.00279.2018
Ning, M., & Jeong, H. (2016). High Fat Diet Feeding Alters Expression of Hepatic Drug metabolizing Enzymes in Mice. The FASEB Journal, 30, 713-3.	https://faseb.onlinelibrary.wiley.com/doi/abs/10.1096/fasebj.30.1_supplement.713.3
Parsanathan, R., & Jain, S. K. (2019). Glutathione deficiency induces epigenetic alterations of vitamin D metabolism genes in the livers of high-fat diet-fed obese mice. Scientific reports, 9(1), 14784.	https://www.nature.com/articles/s41598-019-51377-5
Tryndyak, V. P., Willett, R. A., Nagumalli, S. K., Li, D., Avigan, M. I., Beland, F. A., ... & Pogribny, I. P. (2023). Effect of an obesogenic high-fat and high-sucrose diet on hepatic gene expression signatures in male Collaborative Cross mice. American Journal of	https://journals.physiology.org/doi/full/10.1152/ajpgi.00225.2022
Welles, J. E., Lacko, H., Kawasawa, Y. I., Dennis, M. D., Jefferson, L. S., & Kimball, S. R. (2022). An integrative approach to assessing effects of a short-term Western diet on gene expression in rat liver. Frontiers in Endocrinology, 13, 1032293.	https://www.frontiersin.org/journals/endocrinology/articles/10.3389/fendo.2022.1032293/full