

**Aronia Scientific Articles – Diabetes, Pancreas, Glucose**  
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Title	Authors	Reference	URL Link
Beneficial effects of Aronia melanocarpa berry extract on hepatic insulin resistance in type 2 diabetes mellitus rats	Mu J, Xin G, Zhang B, Wang Y, Ning C, Meng X.	J Food Sci. 2020 Apr;85(4):1307-1318. doi: 10.1111/1750-3841.15109. Epub 2020 Apr 6.	<a href="#">Beneficial effects of Aronia melanocarpa berry extract on hepatic insulin resistance in type 2 diabetes mellitus rats - Mu - 2020 - Journal of Food Science - Wiley Online Library</a>
Evaluation of Antioxidant and Anti-Inflammatory Activity of Anthocyanin-Rich Water-Soluble Aronia Dry Extracts	Banach M, Wiloch M, Zawada K, Cyplik W, Kujawski W.	Molecules. 2020 Sep 4;25(18):4055. doi: 10.3390/molecules25184055.	<a href="#">Molecules   Free Full-Text   Evaluation of Antioxidant and Anti-Inflammatory Activity of Anthocyanin-Rich Water-Soluble Aronia Dry Extracts   HTML (mdpi.com)</a>
Cyanidin-3-O-galactoside-enriched Aronia melanocarpa extract attenuates weight gain and adipogenic pathways in high-fat diet-induced obese C57BL/6 mice	Lim SM, Lee HS, Jung JI, Kim SM, Kim NY, Seo TS, Bae JS, Kim EJ.	Nutrients. 2019 May 27;11(5):1190. doi: 10.3390/nu11051190.	<a href="#">Cyanidin-3-O-Galactoside-Enriched Aronia melanocarpa Extract Attenuates Weight Gain and Adipogenic Pathways in High-Fat Diet-Induced Obese C57BL/6 Mice (nih.gov)</a>
The Effect of Aronia Berry on Type 1 Diabetes In Vivo and In Vitro	Jeon YD, Kang SH, Moon KH, Lee JH, Kim DG, Kim W, Kim JS, Ahn BY, Jin JS.	J Med Food. 2018 Mar;21(3):244-253. doi: 10.1089/jmf.2017.3939. Epub 2018 Feb 22.	<a href="#">The Effect of Aronia Berry on Type 1 Diabetes In Vivo and In Vitro   Journal of Medicinal Food (liebertpub.com)</a>
Fermentation alters the bioaccessible phenolic compounds and increases the alpha-glucosidase inhibitory effects of aronia juice in a dairy matrix following in vitro digestion	Du X , Myracle AD .	Food Funct. 2018 May 23;9(5):2998-3007. doi: 10.1039/c8fo00250a.	<a href="#">Fermentation alters the bioaccessible phenolic compounds and increases the alpha-glucosidase inhibitory effects of aronia juice in a dairy matrix following in vitro digestion - Food &amp; Function (RSC Publishing)</a>
Combination of Aronia, Red Ginseng, Shiitake Mushroom and Nattokinase Potentiated Insulin Secretion and Reduced Insulin Resistance with Improving Gut Microbiome Dysbiosis in Insulin Deficient Type 2 Diabetic Rats	Yang HJ, Kim MJ, Kwon DY, Kim DS, Zhang T, Ha C, Park S.	Nutrients. 2018 Jul 23;10(7):948. doi: 10.3390/nu10070948.	<a href="#">Combination of Aronia, Red Ginseng, Shiitake Mushroom and Nattokinase Potentiated Insulin Secretion and Reduced Insulin Resistance with Improving Gut Microbiome Dysbiosis in Insulin Deficient Type 2 Diabetic Rats (nih.gov)</a>

Chokeberry Extract and Its Active Polyphenols Suppress Adipogenesis in 3T3-L1 Adipocytes and Modulates Fat Accumulation and Insulin Resistance in Diet-Induced Obese Mice	Kim NH, Jegal J, Kim YN, Heo JD, Rho JR, Yang MH, Jeong EJ.	Nutrients. 2018 Nov 12;10(11):1734. doi: 10.3390/nu10111734.	<a href="#">Nutrients   Free Full-Text   Chokeberry Extract and Its Active Polyphenols Suppress Adipogenesis in 3T3-L1 Adipocytes and Modulates Fat Accumulation and Insulin Resistance in Diet-Induced Obese Mice   HTML (mdpi.com)</a>
Fruits of Black Chokeberry Aronia melanocarpa in the Prevention of Chronic Diseases	Jurikova T, Mlcek J, Skrovankova S, Sumczynski D, Sochor J, Hlavacova I, Snopek L, Orsavova J.	Molecules. 2017 Jun 7;22(6):944. doi: 10.3390/molecules22060944.	<a href="#">Fruits of Black Chokeberry Aronia melanocarpa in the Prevention of Chronic Diseases (nih.gov)</a>
Antidiabetic Effects of Aronia melanocarpa and Its Other Therapeutic Properties	Banjari I, Misir A, Šavikin K, Jokić S, Molnar M, De Zoysa HKS, Waisundara VY.	Front Nutr. 2017 Nov 6;4:53. doi: 10.3389/fnut.2017.00053. eCollection 2017.	<a href="#">Fruits of Black Chokeberry Aronia melanocarpa in the Prevention of Chronic Diseases (nih.gov)</a>
Aronia melanocarpa Extract Ameliorates Hepatic Lipid Metabolism through PPAR $\gamma$ 2 Downregulation	Park CH, Kim JH, Lee EB, Hur W, Kwon OJ, Park HJ, Yoon SK.	PLoS One. 2017 Jan 12;12(1):e0169685. doi: 10.1371/journal.pone.0169685. eCollection 2017.	<a href="#">Aronia melanocarpa Extract Ameliorates Hepatic Lipid Metabolism through PPAR<math>\gamma</math>2 Downregulation (nih.gov)</a>
Inhibitory activity of chokeberry, bilberry, raspberry and cranberry polyphenol-rich extract towards adipogenesis and oxidative stress in differentiated 3T3-L1 adipose cells	Kowalska K, Olejnik A, Szwajgier D, Olkowicz M.	PLoS One. 2017 Nov 28;12(11):e0188583. doi: 10.1371/journal.pone.0188583. eCollection 2017.	<a href="#">Inhibitory activity of chokeberry, bilberry, raspberry and cranberry polyphenol-rich extract towards adipogenesis and oxidative stress in differentiated 3T3-L1 adipose cells (plos.org)</a>
Improvement of blood glucose levels and obesity in mice given aronia juice by inhibition of dipeptidyl peptidase IV and $\alpha$ -glucosidase	Yamane T, Kozuka M, Konda D, Nakano Y, Nakagaki T, Ohkubo I, Ariga H.	J Nutr Biochem. 2016 May;31:106-12. doi: 10.1016/j.jnutbio.2016.02.004. Epub 2016 Feb 28.	<a href="#">Improvement of blood glucose levels and obesity in mice given aronia juice by inhibition of dipeptidyl peptidase IV and <math>\alpha</math>-glucosidase - ScienceDirect</a>

Effect of Chokeberry Juice on N-Nitrosodiethylamine-Induced Rat Liver Carcinogenesis	Kujawska M, Kant P, Mayoral IH, Ignatowicz E, Sikora J, Oszmianski J, Czapski J, Jodynis-Liebert J.	J Environ Pathol Toxicol Oncol. 2016;35(4):317-331. doi: 10.1615/JEnvironPatholToxicolOncol.2016014030.	<a href="#">antioxidant, oxidative stress, polyphenols - Begell House Digital Library</a>
Chokeberry attenuates the expression of genes related to de novo lipogenesis in the hepatocytes of mice with nonalcoholic fatty liver disease	Park H, Liu Y, Kim HS, Shin JH.	Nutr Res. 2016 Jan;36(1):57-64. doi: 10.1016/j.nutres.2015.10.010. Epub 2015 Oct 31.	<a href="#">Chokeberry attenuates the expression of genes related to de novo lipogenesis in the hepatocytes of mice with nonalcoholic fatty liver disease. - Abstract - Europe PMC</a>
The effects of polyphenol-rich chokeberry juice on fatty acid profiles and lipid peroxidation of active handball players: results from a randomized, double-blind, placebo-controlled study	Petrovic S, Arsic A, Glibetic M, Cikiriz N, Jakovljevic V, Vucic V.	Can J Physiol Pharmacol. 2016 Oct;94(10):1058-1063. doi: 10.1139/cjpp-2015-0575. Epub 2016 Apr 12.	<a href="#">The effects of polyphenol-rich chokeberry juice on fatty acid profiles and lipid peroxidation of active handball players: results from a randomized, double-blind, placebo-controlled study (cdsciencepub.com)</a>
Anthocyanin-rich Phytochemicals from Aronia Fruits Inhibit Visceral Fat Accumulation and Hyperglycemia in High-fat Diet-induced Dietary Obese Rats	Takahashi A, Shimizu H, Okazaki Y, Sakaguchi H, Taira T, Suzuki T, Chiji H.	J Oleo Sci. 2015;64(12):1243-50. doi: 10.5650/jos.ess15181. Epub 2015 Nov 19.	<a href="#">Anthocyanin-rich Phytochemicals from Aronia Fruits Inhibit Visceral Fat Accumulation and Hyperglycemia in High-fat Diet-induced Dietary Obese Rats (jst.go.jp)</a>
Identification and characterization of a dipeptidyl peptidase IV inhibitor from aronia juice	Kozuka M, Yamane T, Nakano Y, Nakagaki T, Ohkubo I, Ariga H.	Biochem Biophys Res Commun. 2015 Sep 25;465(3):433-6. doi: 10.1016/j.bbrc.2015.08.031. Epub 2015 Aug 18.	<a href="#">Identification and characterization of a dipeptidyl peptidase IV inhibitor from aronia juice : HUSCAP (hokudai.ac.jp)</a>
Effects of Sambucus nigra and Aronia melanocarpa extracts on immune system disorders within diabetes mellitus	Badescu M, Badulescu O, Badescu L, Ciocoiu M.	Pharm Biol. 2015 Apr;53(4):533-9. doi: 10.3109/13880209.2014.931441. Epub 2014 Oct 20.	<a href="#">Effects of Sambucus nigra and Aronia melanocarpa extracts on immune system disorders within diabetes (tandfonline.com)</a>

Antiatherogenic and Cardioprotective Effects of Black Chokeberry ( <i>Aronia melanocarpa</i> ) Juice in Aging Rats	Daskalova E, Delchev S, Peeva Y, Vladimirova-Kitova L, Kratchanova M, Kratchanov C, Denev P.	Evid Based Complement Alternat Med. 2015;2015:717439. doi: 10.1155/2015/717439. Epub 2015 Aug 13.	<a href="#">Antiatherogenic and Cardioprotective Effects of Black Chokeberry (<i>Aronia melanocarpa</i>) Juice in Aging Rats (nih.gov)</a>
Berries reduce postprandial insulin responses to wheat and rye breads in healthy women	Törrönen R, Kolehmainen M, Sarkkinen E, Poutanen K, Mykkänen H, Niskanen L.	J Nutr. 2013 Apr;143(4):430-6. doi: 10.3945/jn.112.169771. Epub 2013 Jan 30.	<a href="#">Berries Reduce Postprandial Insulin Responses to Wheat and Rye Breads in Healthy Women   The Journal of Nutrition   Oxford Academic (oup.com)</a>
An extract of chokeberry attenuates weight gain and modulates insulin, adipogenic and inflammatory signalling pathways in epididymal adipose tissue of rats fed a fructose-rich diet	Qin B, Anderson RA.	Br J Nutr. 2012 Aug;108(4):581-7. doi: 10.1017/S000711451100599X. Epub 2011 Dec 6.	<a href="#">An extract of chokeberry attenuates weight gain and modulates insulin, adipogenic and inflammatory signalling pathways in epididymal adipose tissue of rats fed a fructose-rich diet   British Journal of Nutrition   Cambridge Core</a>
Ingestion of black chokeberry fruit extract leads to intestinal and systemic changes in a rat model of prediabetes and hyperlipidemia	Jurgoński A, Juśkiewicz J, Zduńczyk Z.	Plant Foods Hum Nutr. 2008 Dec;63(4):176-82. doi: 10.1007/s11130-008-0087-7. Epub 2008 Aug 23.	<a href="#">Ingestion of Black Chokeberry Fruit Extract Leads to Intestinal and Systemic Changes in a Rat Model of Prediabetes and Hyperlipidemia   SpringerLink</a>
Triterpene constituents from the seedling of <i>Aronia melanocarpa</i>	Yu M, Li X, Zhao CC, Xu J, Zhang P.	J Asian Nat Prod Res. 2007 Apr-Aug;9(3-5):365-72. doi: 10.1080/10286020600727806.	<a href="#">Hypoglycemic and hypolipidemic effects of aronia melanocarpa fruit juice in streptozotocin-induced diabetic rats. - Free Online Library (thefreelibrary.com)</a>
Hypoglycemic and hypolipidemic effects of <i>Aronia melanocarpa</i> fruit juice in streptozotocin-induced diabetic rats	Valcheva-Kuzmanova S, Kuzmanov K, Tancheva S, Belcheva A.	Methods Find Exp Clin Pharmacol. 2007 Mar;29(2):101-5. doi: 10.1358/mf.2007.29.2.1075349.	<a href="#">Aronia melanocarpa extract reduces blood pressure, serum endothelin, lipid, and oxidative stress marker levels in patients with metabolic syndrome - Get your full text copy in PDF #878315   Medical Science Monitor (medscimonit.com)</a>

Effects of Aronia melanocarpa juice as part of the dietary regimen in patients with diabetes mellitus	Simeonov SB, Botushanov NP, Karahanian EB, Pavlova MB, Husianitis HK, Troev DM.	Folia Med (Plovdiv). 2002;44(3):20-3.	<a href="#">Effects of Aronia melanocarpa juice as part of the dietary regimen in patients with diabetes mellitus - PubMed (nih.gov)</a>
[Hypoglycemic effect of an extract from Aronia melanocarpa leaves]	Maslov DL, Ipatova OM, Abakumova Olu, Tsvetkova TA, Prozorovskiĭ VN.	Vopr Med Khim. 2002 May-Jun;48(3):271-7.	<a href="#">(PDF) Hypoglycemic and hypolipidemic effects of Aronia melanocarpa fruit juice in streptozocin-induced diabetic rats (researchgate.net)</a>
[Stimulation of glucose uptake in PC 12 and L 929 cells by extracts from Aronia melanocarpa leaves]	Maslov DL, Prozorovskiĭ TV, Ipatova OM, Abakumova Olu, Tsvetkova TA, Prozorovskiĭ VN.	Vopr Med Khim. 2002 Mar-Apr;48(2):196-200.	<a href="#">[Stimulation of glucose uptake in PC 12 and L 929 cells by extracts from Aronia melanocarpa leaves] - PubMed (nih.gov)</a>
[The influence of Aronia melanocarpa in experimental pancreatitis]	Jankowski A, Jankowska B, Niedworok J.	Pol Merkur Lekarski. 2000 Jun;8(48):395-8.	<a href="#">[The influence of Aronia melanocarpa in experimental pancreatitis] - PubMed (nih.gov)</a>
Extracts, anthocyanins and procyanidins from Aronia melanocarpa as radical scavengers and enzyme inhibitors	Bräunlich M, Sliemstad R, Wangensteen H, Brede C, Malterud KE, Barsett H.	Nutrients. 2013 Mar 4;5(3):663-78. doi: 10.3390/nu5030663.	<a href="#">Nutrients   Free Full-Text   Extracts, Anthocyanins and Procyanidins from Aronia melanocarpa as Radical Scavengers and Enzyme Inhibitors   HTML (mdpi.com)</a>
Is There a FADS2-Modulated Link between Long-Chain Polyunsaturated Fatty Acids in Plasma Phospholipids and Polyphenol Intake in Adult Subjects Who Are Overweight?	Zec MM, Krga I, Stojković L, Živković M, Pokimica B, Stanković A, Glibetic M.	Nutrients. 2021 Jan 21;13(2):296. doi: 10.3390/nu13020296.	<a href="#">Is There a FADS2-Modulated Link between Long-Chain Polyunsaturated Fatty Acids in Plasma Phospholipids and Polyphenol Intake in Adult Subjects Who Are Overweight? (nih.gov)</a>
Black chokeberry Aronia melanocarpa extract reduces blood pressure, glycemia and lipid profile in patients with metabolic syndrome: a prospective controlled trial	Tasic N, Jakovljevic VLJ, Mitrovic M, Djindjic B, Tasic D, Dragisic D, Citakovic Z, Kovacevic Z,	Mol Cell Biochem. 2021 Jul;476(7):2663-2673. doi: 10.1007/s11010-021-04106-4. Epub 2021 Mar 5.	<a href="#">Black chokeberry Aronia melanocarpa extract reduces blood pressure, glycemia and lipid profile in patients with metabolic syndrome: a prospective controlled trial   SpringerLink</a>

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Anthocyanin-Rich Aronia Berry Extract Mitigates High-Fat and High-Sucrose Diet-Induced Adipose Tissue Inflammation by Inhibiting Nuclear Factor- $\kappa$ B Activation	Yu SY, Kim MB, Park YK, Bae M, Kang H, Hu S, Pham TX, Carpenter R, Lee J, Lee OH, Lee JY, Kim YC.	J Med Food. 2021 Jun;24(6):586-594. doi: 10.1089/jmf.2020.0127. Epub 2021 Mar 22.	<a href="#">Anthocyanin-Rich Aronia Berry Extract Mitigates High-Fat and High-Sucrose Diet-Induced Adipose Tissue Inflammation by Inhibiting Nuclear Factor-<math>\kappa</math>B Activation   Journal of Medicinal Food (liebertpub.com)</a>
The effect of lipid metabolism regulator anthocyanins from Aronia melanocarpa on 3T3-L1 preadipocytes and C57BL/6 mice via activating AMPK signaling and gut microbiota	Chen C , Yang X , Liu S , Zhang M , Wang C , Xia X , Lou Y , Xu H .	Food Funct. 2021 Jul 21;12(14):6254-6270. doi: 10.1039/d1fo00907a. Epub 2021 Jun 11.	<a href="#">The effect of lipid metabolism regulator anthocyanins from Aronia melanocarpa on 3T3-L1 preadipocytes and C57BL/6 mice via activating AMPK signaling and gut microbiota - Food &amp; Function (RSC Publishing)</a>
The Efficacy of Black Chokeberry Fruits against Cardiovascular Diseases	Kasprzak-Drozd K, Oniszczyk T, Soja J, Gancarz M, Wojtunik-Kulesza K, Markut-Miotła E, Oniszczyk A.	Int J Mol Sci. 2021 Jun 18;22(12):6541. doi: 10.3390/ijms22126541.	<a href="#">The Efficacy of Black Chokeberry Fruits against Cardiovascular Diseases (nih.gov)</a>
Standardized Aronia melanocarpa extract regulates redox status in patients receiving hemodialysis with anemia	Milosavljevic I, Jakovljevic V, Petrovic D, Draginic N, Jeremic J, Mitrovic M, Zivkovic V, Srejovic I, Stojic V, Bolevich S, Andjelkovic N.	Mol Cell Biochem. 2021 Nov;476(11):4167-4175. doi: 10.1007/s11010-021-04225-y. Epub 2021 Jul 29.	<a href="#">Standardized Aronia melanocarpa extract regulates redox status in patients receiving hemodialysis with anemia   SpringerLink</a>
Efficacy and Safety of Aronia, Red Ginseng, Shiitake Mushroom, and Nattokinase Mixture on Insulin Resistance in Prediabetic	Park S, Kim CJ, Ha KC, Baek HI, Yang HJ, Kim MJ, Park SJ.	Foods. 2021 Jul 5;10(7):1558. doi: 10.3390/foods10071558 .	<a href="#">Efficacy and Safety of Aronia, Red Ginseng, Shiitake Mushroom, and Nattokinase Mixture on Insulin Resistance in Prediabetic</a>

Adults: A Randomized, Double-Blinded, Placebo-Controlled Trial			<a href="#">Adults: A Randomized, Double-Blinded, Placebo-Controlled Trial (nih.gov)</a>
Black Chokeberry ( <i>Aronia melanocarpa</i> ) Functional Beverages Increase HDL-Cholesterol Levels in Aging Rats	Daskalova E, Delchev S, Vladimirova-Kitova L, Kitov S, Denev P.	Foods. 2021 Jul 15;10(7):1641. doi: 10.3390/foods10071641 .	<a href="#">Black Chokeberry (<i>Aronia melanocarpa</i>) Functional Beverages Increase HDL-Cholesterol Levels in Aging Rats (nih.gov)</a>
Anti-Obesity Effects of <i>Morus alba</i> L. and <i>Aronia melanocarpa</i> in a High-Fat Diet-Induced Obese C57BL/6J Mouse Model	Kim NY, Thomas SS, Hwang DI, Lee JH, Kim KA, Cha YS.	Foods. 2021 Aug 18;10(8):1914. doi: 10.3390/foods10081914 .	<a href="#">Anti-Obesity Effects of <i>Morus alba</i> L. and <i>Aronia melanocarpa</i> in a High-Fat Diet-Induced Obese C57BL/6J Mouse Model (nih.gov)</a>
Traditionally Used Plants in the Treatment of Diabetes Mellitus: Screening for Uptake Inhibition of Glucose and Fructose in the Caco2-Cell Model	Schreck K, Melzig MF.	Front Pharmacol. 2021 Aug 20;12:692566. doi: 10.3389/fphar.2021.692566. eCollection 2021.	<a href="#">Traditionally Used Plants in the Treatment of Diabetes Mellitus: Screening for Uptake Inhibition of Glucose and Fructose in the Caco2-Cell Model (nih.gov)</a>