

**Aronia Scientific Articles – Cancer Related**  
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Title	Authors	Reference	URL Link
Anthocyanins from Aronia melanocarpa Induce Apoptosis in Caco-2 Cells through Wnt/ $\beta$ -Catenin Signaling Pathway	Wei J, Yu W, Hao R, Fan J, Gao J.	Chem Biodivers. 2020 Nov;17(11):e2000654. doi: 10.1002/cbdv.202000654. Epub 2020 Nov 6.	<a href="#">Anthocyanins from Aronia melanocarpa Induce Apoptosis in Caco-2 Cells through Wnt/<math>\beta</math>-Catenin Signaling Pathway - Wei - 2020 - Chemistry &amp; Biodiversity - Wiley Online Library</a>
Cytotoxic and DNA-Damaging Effects of Aronia melanocarpa, Cornus mas, and Chaenomeles superba Leaf Extracts on the Human Colon Adenocarcinoma Cell Line Caco-2	Efenberger-Szmechtyk M, Nowak A, Nowak A.	Antioxidants (Basel). 2020 Oct 22;9(11):1030. doi: 10.3390/antiox9111030.	<a href="#">Antioxidants   Free Full-Text   Cytotoxic and DNA-Damaging Effects of Aronia melanocarpa, Cornus mas, and Chaenomeles superba Leaf Extracts on the Human Colon Adenocarcinoma Cell Line Caco-2   HTML (mdpi.com)</a>
Anticancer Effects of Extracts from Three Different Chokeberry Species	Gill NK, Rios D, Osorio-Camacena E, Mojica BE, Kaur B, Soderstrom MA, Gonzalez M, Plaat B, Poblete C, Kaur N, Singh H, Forester SC.	Nutr Cancer. 2020 Jul 9:1-7. doi: 10.1080/01635581.2020.1789679. Online ahead of print.	<a href="#">Anticancer Effects of Extracts from Three Different Chokeberry Species: Nutrition and Cancer: Vol 0, No 0 (tandfonline.com)</a>
Anthocyanin-fucoidan nanocomplex for preventing carcinogen induced cancer: Enhanced absorption and stability	Lee JY, Jo YU, Shin H, Lee J, Chae SU, Bae SK, Na K.	Int J Pharm. 2020 Aug 30;586:119597. doi: 10.1016/j.ijpharm.2020.119597. Epub 2020 Jul 3.	<a href="#">Anthocyanin-fucoidan nanocomplex for preventing carcinogen induced cancer: Enhanced absorption and stability - ScienceDirect</a>
Biological Evaluation of Black Chokeberry Extract Free and Embedded in Two Mesoporous Silica-Type Matrices	Buda V, Brezoiu AM, Berger D, Pavel IZ, Muntean D, Minda D, Dehelean CA, Soica C, Diaconeasa Z, Folescu R, Danciu C.	Pharmaceutics. 2020 Sep 1;12(9):838. doi: 10.3390/pharmaceutics12090838.	<a href="#">Pharmaceutics   Free Full-Text   Biological Evaluation of Black Chokeberry Extract Free and Embedded in Two Mesoporous Silica-Type Matrices   HTML (mdpi.com)</a>

Influence of supercritical fluid extraction parameters in preparation of black chokeberry extracts on total phenolic content and cellular viability	Wenzel J, Wang L, Horcasitas S, Warburton A, Constine S, Kjellson A, Cussans K, Ammerman M, Samaniego CS.	Food Sci Nutr. 2020 May 26;8(7):3626-3637. doi: 10.1002/fsn3.1645. eCollection 2020 Jul.	<a href="#">Influence of supercritical fluid extraction parameters in preparation of black chokeberry extracts on total phenolic content and cellular viability (nih.gov)</a>
Triterpene Acid (3-O-p-Coumaroyltormentic Acid) Isolated From Aronia Extracts Inhibits Breast Cancer Stem Cell Formation through Downregulation of c-Myc Protein	Choi HS, Kim SL, Kim JH, Deng HY, Yun BS, Lee DS.	Int J Mol Sci. 2018 Aug 26;19(9):2528. doi: 10.3390/ijms19092528.	<a href="#">Triterpene Acid (3-O-p-Coumaroyltormentic Acid) Isolated From Aronia Extracts Inhibits Breast Cancer Stem Cell Formation through Downregulation of c-Myc Protein (nih.gov)</a>
Catechol derived from aronia juice through lactic acid bacteria fermentation inhibits breast cancer stem cell formation via modulation Stat3/IL-6 signaling pathway	Choi HS, Kim JH, Kim SL, Deng HY, Lee D, Kim CS, Yun BS, Lee DS.	Mol Carcinog. 2018 Nov;57(11):1467-1479. doi: 10.1002/mc.22870. Epub 2018 Jul 18.	<a href="#">Catechol derived from aronia juice through lactic acid bacteria fermentation inhibits breast cancer stem cell formation via modulation Stat3/IL-6 signaling pathway - Choi - 2018 - Molecular Carcinogenesis - Wiley Online Library</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>
In vitro study of biological activities of anthocyanin-rich berry extracts on porcine intestinal epithelial cells	Kšonžeková P, Mariychuk R, Eliašová A, Mudroňová D, Csank T, Király J, Marcinčáková D, Pistl J, Tkáčiková L.	J Sci Food Agric. 2016 Mar 15;96(4):1093-100. doi: 10.1002/jsfa.7181. Epub 2015 Apr 24.	<a href="#">In vitro study of biological activities of anthocyanin-rich berry extracts on porcine intestinal epithelial cells - Kšonžeková - 2016 - Journal of the Science of Food and Agriculture - Wiley Online Library</a>
Studies on the antioxidant properties of extracts from the roots and shoots of two Scutellaria species in human blood plasma	Grzegorzcyk-Karolak I, Wysokińska H, Olas B.	Acta Biochim Pol. 2015;62(2):253-8. doi: 10.18388/abp.2014_944. Epub 2015 May 26.	<a href="#">2014_944.pdf (actabp.pl)</a>

Antioxidant and antiproliferative activity of chokeberry juice phenolics during in vitro simulated digestion in the presence of food matrix	Stanisavljević N, Samardžić J, Janković T, Šavikin K, Mojsin M, Topalović V, Stevanović M.	Food Chem. 2015 May 15;175:516-22. doi: 10.1016/j.foodchem.2014.12.009. Epub 2014 Dec 10.	<a href="#">Antioxidant and antiproliferative activity of chokeberry juice phenolics during in vitro simulated digestion in the presence of food matrix - ScienceDirect</a>
Cytotoxicity of gemcitabine enhanced by polyphenolics from Aronia melanocarpa in pancreatic cancer cell line AsPC-1	Thani NA, Keshavarz S, Lwaleed BA, Cooper AJ, Rooprai HK.	J Clin Pathol. 2014 Nov;67(11):949-54. doi: 10.1136/jclinpath-2013-202075. Epub 2014 Sep 17.	<a href="#">Cytotoxicity of gemcitabine enhanced by polyphenolics from Aronia melanocarpa in pancreatic cancer cell line AsPC-1 - PubMed (nih.gov)</a>
Changes in plasma thiol levels induced by different phases of treatment in breast cancer; the role of commercial extract from black chokeberry	Kędzierska M, Głowacki R, Czernek U, Szydłowska-Pazera K, Potemski P, Piekarski J, Jeziorski A, Olas B.	Mol Cell Biochem. 2013 Jan;372(1-2):47-55. doi: 10.1007/s11010-012-1444-2. Epub 2012 Sep 5.	<a href="#">Changes in plasma thiol levels induced by different phases of treatment in breast cancer; the role of commercial extract from black chokeberry   SpringerLink</a>
Aronia melanocarpa juice induces a redox-sensitive p73-related caspase 3-dependent apoptosis in human leukemia cells	Sharif T, Alhosin M, Auger C, Minker C, Kim JH, Etienne-Selloum N, Borjes P, Gronemeyer H, Lobstein A, Bronner C, Fuhrmann G, Schini-Kerth VB.	PLoS One. 2012;7(3):e32526. doi: 10.1371/journal.pone.0032526. Epub 2012 Mar 8.	<a href="#">Aronia melanocarpa Juice Induces a Redox-Sensitive p73-Related Caspase 3-Dependent Apoptosis in Human Leukemia Cells (nih.gov)</a>
Effects of the commercial extract of aronia on oxidative stress in blood platelets isolated from breast cancer patients after the surgery and various phases of the chemotherapy	Kedzierska M, Olas B, Wachowicz B, Glowacki R, Bald E, Czernek U, Szydłowska-Pazera K, Potemski P, Piekarski J, Jeziorski A.	Fitoterapia. 2012 Mar;83(2):310-7. doi: 10.1016/j.fitote.2011.11.007. Epub 2011 Nov 12.	<a href="#">Effects of the commercial extract of aronia on oxidative stress in blood platelets isolated from breast cancer patients after the surgery and various phases of the chemotherapy - ScienceDirect</a>
Induction of apoptosis and reduction of MMP gene expression in the U373 cell line by polyphenolics in Aronia melanocarpa and by curcumin	Abdullah Thani NA, Sallis B, Nuttall R, Schubert FR, Ahsan M, Davies D, Purewal S, Cooper A, Rooprai HK.	Oncol Rep. 2012 Oct;28(4):1435-42. doi: 10.3892/or.2012.1941. Epub 2012 Jul 27.	<a href="#">Induction of apoptosis and reduction of MMP gene expression in the U373 cell line by polyphenolics in Aronia melanocarpa and by curcumin (spandidos-publications.com)</a>

Inhibition of lung tumor development by berry extracts in mice exposed to cigarette smoke	Balansky R, Ganchev G, Iltcheva M, Kratchanova M, Denev P, Kratchanov C, Polasa K, D'Agostini F, Steele VE, De Flora S.	Int J Cancer. 2012 Nov 1;131(9):1991-7. doi: 10.1002/ijc.27486. Epub 2012 Mar 27.	<a href="#">Inhibition of lung tumor development by berry extracts in mice exposed to cigarette smoke - Balansky - 2012 - International Journal of Cancer - Wiley Online Library</a>
Antioxidant activities of chokeberry extracts and the cytotoxic action of their anthocyanin fraction on HeLa human cervical tumor cells	Rugină D, Sconța Z, Leopold L, Pinteș A, Bunea A, Socaciu C.	J Med Food. 2012 Aug;15(8):700-6. doi: 10.1089/jmf.2011.0246. Epub 2012 Jun 25.	<a href="#">Antioxidant Activities of Chokeberry Extracts and the Cytotoxic Action of Their Anthocyanin Fraction on HeLa Human Cervical Tumor Cells   Journal of Medicinal Food (liebertpub.com)</a>
Chokeberry (Aronia melanocarpa) juice modulates 7,12-dimethylbenz[a]anthracene induced hepatic but not mammary gland phase I and II enzymes in female rats	Szaefer H, Krajka-Kuźniak V, Ignatowicz E, Adamska T, Baer-Dubowska W.	Environ Toxicol Pharmacol. 2011 Mar;31(2):339-46. doi: 10.1016/j.etap.2010.12.006. Epub 2011 Jan 18.	<a href="#">Chokeberry (Aronia melanocarpa) juice modulates 7,12-dimethylbenz[a]anthracene induced hepatic but not mammary gland phase I and II enzymes in female rats - ScienceDirect</a>
Aronia plants: a review of traditional use, biological activities, and perspectives for modern medicine	Kokotkiewicz A, Jaremicz Z, Luczkiewicz M.	J Med Food. 2010 Apr;13(2):255-69. doi: 10.1089/jmf.2009.0062.	<a href="#">Aronia Plants: A Review of Traditional Use, Biological Activities, and Perspectives for Modern Medicine   Journal of Medicinal Food (liebertpub.com)</a>
The nitrate and oxidative stress in blood platelets isolated from breast cancer patients: the protective action of aronia melanocarpa extract	Kedzierska M, Olas B, Wachowicz B, Stochmal A, Oleszek W, Jeziorski A, Piekarski J.	Platelets. 2010;21(7):541-8. doi: 10.3109/09537104.2010.492534.	<a href="#">The nitrate and oxidative stress in blood platelets isolated from breast cancer patients: The protective action of aronia melanocarpa extract: Platelets: Vol 21, No 7 (tandfonline.com)</a>
An extract from berries of Aronia melanocarpa modulates the generation of superoxide anion radicals in blood platelets from breast cancer patients	Kedzierska M, Olas B, Wachowicz B, Stochmal A, Oleszek W, Jeziorski A, Piekarski J, Glowacki R.	Planta Med. 2009 Oct;75(13):1405-9. doi: 10.1055/s-0029-1185718. Epub 2009 May 14.	<a href="#">Thieme E-Journals - Planta Medica / Abstract (thieme-connect.com)</a>

Effect of Chokeberry ( <i>Aronia melanocarpa</i> ) juice on the metabolic activation and detoxication of carcinogenic N-nitrosodiethylamine in rat liver	Krajka-Kuźniak V, Szaefer H, Ignatowicz E, Adamska T, Oszmiański J, Baer-Dubowska W.	J Agric Food Chem. 2009 Jun 10;57(11):5071-7. doi: 10.1021/jf803973y.	<a href="#">Effect of Chokeberry (<i>Aronia melanocarpa</i>) Juice on the Metabolic Activation and Detoxication of Carcinogenic N-Nitrosodiethylamine in Rat Liver   Journal of Agricultural and Food Chemistry (acs.org)</a>
Studies on antioxidant properties of polyphenol-rich extract from berries of <i>Aronia melanocarpa</i> in blood platelets	Olas B, Wachowicz B, Nowak P, Kedzierska M, Tomczak A, Stochmal A, Oleszek W, Jeziorski A, Piekarski J.	J Physiol Pharmacol. 2008 Dec;59(4):823-35.	<a href="#">Studies on antioxidant properties of polyphenol-rich extract from berries of <i>Aronia melanocarpa</i> in blood platelets. - Abstract - Europe PMC</a>
Inhibitory effects of various beverages on the sulfoconjugation of 17beta-estradiol in human colon carcinoma Caco-2 cells	Saruwatari A, Isshiki M, Tamura H.	Biol Pharm Bull. 2008 Nov;31(11):2131-6. doi: 10.1248/bpb.31.2131.	<a href="#">Inhibitory Effects of Various Beverages on the Sulfoconjugation of 17β-Estradiol in Human Colon Carcinoma Caco-2 Cells (jst.go.jp)</a>
Up-regulation of tumor suppressor carcinoembryonic antigen-related cell adhesion molecule 1 in human colon cancer Caco-2 cells following repetitive exposure to dietary levels of a polyphenol-rich chokeberry juice	Bermúdez-Soto MJ, Larrosa M, Garcia-Cantalejo JM, Espín JC, Tomás-Barberan FA, García-Conesa MT.	J Nutr Biochem. 2007 Apr;18(4):259-71. doi: 10.1016/j.jnutbio.2006.05.003. Epub 2006 Jul 24.	<a href="#">Up-regulation of tumor suppressor carcinoembryonic antigen-related cell adhesion molecule 1 in human colon cancer Caco-2 cells following repetitive exposure to dietary levels of a polyphenol-rich chokeberry juice - ScienceDirect</a>
Effects of commercial anthocyanin-rich extracts on colonic cancer and nontumorigenic colonic cell growth	Zhao C, Giusti MM, Malik M, Moyer MP, Magnuson BA.	J Agric Food Chem. 2004 Oct 6;52(20):6122-8. doi: 10.1021/jf049517a.	<a href="#">Effects of Commercial Anthocyanin-Rich Extracts on Colonic Cancer and Nontumorigenic Colonic Cell Growth   Journal of Agricultural and Food Chemistry (acs.org)</a>
Evaluation of the immunomodulatory activity of <i>Aronia</i> in combination with apple pectin in patients with breast cancer undergoing postoperative radiation therapy	Yaneva MP, Botushanova AD, Grigorov LA, Kokov JL, Todorova EP, Krachanova MG.	Folia Med (Plovdiv). 2002;44(1-2):22-5.	<a href="#">Evaluation of the immunomodulatory activity of <i>Aronia</i> in combination with apple pectin in patients with breast cancer undergoing postoperative radiation therapy - PubMed (nih.gov)</a>

Antimutagenic activity of anthocyanins isolated from Aronia melanocarpa fruits	Gasiorowski K, Szyba K, Brokos B, Kołaczyńska B, Jankowiak-Włodarczyk M, Oszmiański J.	Cancer Lett. 1997 Oct 28;119(1):37-46. doi: 10.1016/s0304-3835(97)00248-6.	<a href="#">Antimutagenic activity of anthocyanins isolated from Aronia melanocarpa fruits - ScienceDirect</a>
Effect of food products on endogenous generation of N-nitrosamines in rats	Atanasova-Goranova VK, Dimova PI, Pevicharova GT.	Br J Nutr. 1997 Aug;78(2):335-45. doi: 10.1079/bjn19970151.	<a href="#">Effect of food products on endogenous generation of n-nitrosamines in rats   British Journal of Nutrition   Cambridge Core</a>
Aronia melanocarpa juice induces a redox-sensitive p73-related caspase 3-dependent apoptosis in human leukemia cells	Sharif T, Alhosin M, Auger C, Minker C, Kim JH, Etienne-Selloum N, Bories P, Gronemeyer H, Lobstein A, Bronner C, Fuhrmann G, Schini-Kerth VB.	PLoS One. 2012;7(3):e32526. doi: 10.1371/journal.pone.0032526. Epub 2012 Mar 8.	<a href="#">Aronia melanocarpa Juice Induces a Redox-Sensitive p73-Related Caspase 3-Dependent Apoptosis in Human Leukemia Cells (nih.gov)</a>
Inhibition of Invasion by Polyphenols from Citrus Fruit and Berries in Human Malignant Glioma Cells In Vitro	Rooprai HK, Christidou M, Murray SA, Davies D, Selway R, Gullan RW, Pilkington GJ.	Anticancer Res. 2021 Feb;41(2):619-633. doi: 10.21873/anticancerres.14813.	<a href="#">Inhibition of Invasion by Polyphenols from Citrus Fruit and Berries in Human Malignant Glioma Cells In Vitro   Anticancer Research (iiarjournals.org)</a>
Characterization of Oligomeric Proanthocyanidin-Enriched Fractions from Aronia melanocarpa (Michx.) Elliott via High-Resolution Mass Spectrometry and Investigations on Their Inhibitory Potential on Human Topoisomerases	Müller L, Weever F, Hübner F, Humpf HU, Esselen M.	J Agric Food Chem. 2021 Sep 22;69(37):11053-11064. doi: 10.1021/acs.jafc.1c04761. Epub 2021 Sep 8.	<a href="#">Characterization of Oligomeric Proanthocyanidin-Enriched Fractions from Aronia melanocarpa (Michx.) Elliott via High-Resolution Mass Spectrometry and Investigations on Their Inhibitory Potential on Human Topoisomerases   Journal of Agricultural and Food Chemistry (acs.org)</a>