

Literature data, that support potential health benefits of L-Blend

1. Wine polyphenols

Publication	Design	Key findings	Relevance for L-Blend
<p>Draijer, R., de Graaf, Y., Slettenaar, M., de Groot, E., & Wright, C. I. "Consumption of a Polyphenol-Rich Grape-Wine Extract Lowers Ambulatory Blood Pressure in Mildly Hypertensive Subjects", <i>Nutrients</i>, 2015. 7, 3138-3153</p>	<ul style="list-style-type: none"> - Double-blind, placebo-controlled crossover clinical trial. - 60 untreated, mildly hypertensive participants randomized into three groups. - Interventions included a grape-wine extract, a grape juice extract, and a placebo for four weeks. - Measured 24-hour ambulatory and office blood pressure, vascular function, platelet function, and plasma lipoproteins. 	<ul style="list-style-type: none"> - 24-hour systolic and diastolic blood pressure significantly reduced by 3 mmHg and 2 mmHg, respectively, with grape-wine extract. - Reduction was observed during daytime but not at night. - Plasma endothelin-1 (a vasoconstrictor) decreased by 10% in the grape-wine extract group. - No significant effects on lipid metabolism, platelet function, or endothelial function. 	<ul style="list-style-type: none"> - Confirms that polyphenol-rich wine extracts lower blood pressure, supporting L-Blend cardiovascular claims. - Demonstrates that catechins and procyanidins (found in wine extract) are likely responsible for the effects, reinforcing L-Blend formulation strategy. - Highlights the lack of impact from grape juice alone, emphasizing the need for polyphenol diversity, which L-Blend preserves. - Validates L-Blend's alcohol-free approach while maintaining the cardiovascular benefits of wine polyphenols.

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<p>Haseeb S, Alexander B, Baranchuk A. "Wine and Cardiovascular Health: A Comprehensive Review". <i>Circulation</i>. 2017 Oct 10;136(15):1434-1448</p>	<ul style="list-style-type: none"> - Review article summarizing 42 epidemiological and clinical studies. - Includes prospective cohort studies, meta-analyses, and randomized controlled trials (RCTs). - Focuses on the impact of wine polyphenols on cardiovascular health. 	<ul style="list-style-type: none"> - French Paradox: Low ischemic heart disease (IHD) mortality in France despite a high-fat diet is linked to moderate wine consumption. - Reduced IHD Risk: Cohort studies show moderate wine drinkers have lower cardiovascular risk and mortality. - J-Shaped Relationship: Light-to-moderate alcohol intake lowers cardiovascular risk, while excess consumption increases it. - Wine Polyphenols: Resveratrol and flavonoids provide antioxidant, anti-inflammatory, and anti-thrombotic effects. - Dealcoholized Wine: Retains cardiovascular benefits, proving polyphenols—not ethanol—drive health effects. - Alcoholic Beverages Comparison: Wine shows the most consistent cardiovascular benefits, with mixed results for beer and spirits. 	<ul style="list-style-type: none"> - The study confirms that wine polyphenols—not ethanol—provide cardiovascular benefits by reducing platelet aggregation, oxidative stress, and inflammation. It shows that dealcoholized wine retains these effects, validating L-Blend non-alcoholic, bioavailable formulation. - By eliminating alcohol-related risks while enhancing polyphenol absorption with fibers, L-Blend offers a safe, science-backed alternative for cardiovascular health.
<p>Fragopoulou E, Choleva M, Antonopoulou S, Demopoulos CA. "Wine and</p>	<ul style="list-style-type: none"> - Systematic review of 76 controlled clinical trials examining the acute and 	<ul style="list-style-type: none"> - Lipid Metabolism: Most studies confirm that wine consumption increases HDL cholesterol, 	<ul style="list-style-type: none"> - Reinforces the scientific basis for L-Blend cardiovascular benefits, especially regarding lipid metabolism and inflammation.

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<p>its metabolic effects. A comprehensive review of clinical trials". <i>Metabolism</i>. 2018 Jun;83:102-119</p>	<p>long-term effects of wine consumption.</p> <ul style="list-style-type: none"> - Studies included both healthy individuals and patients, focusing on lipid metabolism, glucose regulation, inflammation, and haemostasis. - Selection criteria: controlled trials with wine intervention, long-term (>1 week) or acute consumption, excluding studies without a control group. 	<p>primarily due to ethanol, while effects on LDL and triglycerides remain inconsistent.</p> <ul style="list-style-type: none"> - Glucose and Insulin Regulation: Wine may enhance insulin sensitivity, particularly in diabetics and high-risk individuals, but has limited impact on fasting glucose. - Haemostasis: Wine consumption reduces platelet aggregation, especially in response to collagen and ADP, and lowers fibrinogen levels, suggesting antithrombotic effects. - Inflammation and Endothelial Function: Wine polyphenols downregulate inflammatory markers (CRP, IL-6) and improve endothelial function, independent of ethanol. - Postprandial Effects: Some studies indicate that wine polyphenols modulate lipid and glucose response after meals, reducing oxidative stress and inflammation. 	<ul style="list-style-type: none"> - Supports L-Blend focus on non-alcoholic formulations, as polyphenol's but not ethanol's drive many of wine's health effects. - Highlights L-Blend's potential to modulate platelet aggregation, a crucial factor in cardiovascular health.
<p>Tanaka, T., Iuchi, A., Harada, H., & Hashimoto, S. "Potential Beneficial Effects</p>	<ul style="list-style-type: none"> - Systematic review summarizing experimental, 	<ul style="list-style-type: none"> - Flavonoids from wine exhibit strong antioxidant, anti-inflammatory, and immunomodulatory activities. 	<ul style="list-style-type: none"> - Supports L-Blend potential role in reducing inflammatory and immune responses,

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<p>of Wine Flavonoids on Allergic Diseases” Diseases, 2019, 7(1), 8.</p>	<p>epidemiological, and clinical studies on wine flavonoids and allergic diseases.</p> <ul style="list-style-type: none"> - Evaluated antioxidant, anti-inflammatory, and immunomodulatory effects of flavonoids in both in vitro and in vivo models. - Included human epidemiological studies linking flavonoid consumption with reduced allergic symptoms. 	<ul style="list-style-type: none"> - In vitro studies confirm that flavonoids inhibit IgE synthesis, mast cell activation, and inflammatory cytokine production. - Epidemiological data suggest that higher flavonoid intake is associated with lower incidence of asthma and allergic rhinitis. - Some clinical trials indicate that flavonoid-rich extracts reduce allergic symptoms, but further research is needed for validation. 	<p>reinforcing its potential for chronic inflammation management.</p> <ul style="list-style-type: none"> - Demonstrates that wine flavonoids contribute to immune modulation, a key feature of L-Blend formulation. - Aligns with L-Blend alcohol-free approach, confirming that polyphenols, not ethanol are responsible for beneficial effects. - Highlights the potential for L-Blend to target not only cardiovascular health but also immune-related conditions, expanding its market reach.
<p>Fragopoulou, E., Petsini, F., Choleva, M., Detopoulou, M., Arvaniti, O. S., Kallinikou, E., Sakantani, E., Tsolou, A., Nomikos, T., & Samaras, Y. . “Evaluation of Anti-</p>	<ul style="list-style-type: none"> - Experimental study assessing ten wine varieties using five different extraction methods. 	<ul style="list-style-type: none"> - Different wine extracts exhibit varying health effects, with some showing stronger anti-inflammatory and antioxidant properties, while others are more effective in reducing platelet aggregation. 	<ul style="list-style-type: none"> - Confirms the strong anti-inflammatory and antioxidant properties of wine polyphenols, validating L-Blendā formulation approach. - Supports L-Blend ability to reduce platelet aggregation, crucial for cardiovascular protection.

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<p>Inflammatory, Anti-Platelet and Anti-Oxidant Activity of Wine Extracts Prepared from Ten Different Grape Varieties”, <i>Molecules</i>, 2020, 25(21), 5054.</p>	<ul style="list-style-type: none"> - Evaluated anti-inflammatory, anti-platelet, and antioxidant effects of extracts. - Used in vitro models to measure oxidative stress inhibition, cytokine secretion, and platelet aggregation. 	<ul style="list-style-type: none"> - The health benefits of wine are not solely determined by its color, but rather by the specific composition of bioactive compounds present in each extract. - A biological score was developed to compare wine extracts, integrating their antioxidant, anti-thrombotic, and anti-inflammatory effects. - Certain extracts demonstrated the highest biological activity, particularly in reducing inflammation and oxidative stress, emphasizing the importance of polyphenol diversity in promoting cardiovascular and metabolic health. 	<ul style="list-style-type: none"> - Demonstrates the importance of polyphenol-rich fractions, reinforcing the value of L-Blend technology in preserving beneficial compounds. - Aligns with L-Blend alcohol-free concept, showing that bioactive compound, not ethanol are responsible for wine health effects.
<p>Weaver SR, Rendeiro C, McGettrick HM, Philp A, Lucas SJE. “Fine wine or sour grapes? A systematic review and meta-analysis of the impact of red wine polyphenols on vascular health”. <i>Eur J Nutr</i>. 2021 Feb;60(1):1-28.</p>	<ul style="list-style-type: none"> - Systematic review and meta-analysis of 48 animal and 37 human studies. - Included randomized controlled trials (RCTs), placebo-controlled studies, and observational research. 	<ul style="list-style-type: none"> - 84% of animal studies showed significant improvements in blood pressure, and 100% in vascular function. - Human studies demonstrated significant reductions in systolic blood pressure (-2.6 mmHg overall, -3.7 mmHg in resveratrol studies). - No significant effect on diastolic blood pressure or flow-mediated dilation. 	<ul style="list-style-type: none"> - Reinforces that red wine polyphenols provide vascular health benefits independent of alcohol. - Confirms L-Blend approach of preserving and enhancing polyphenol bioavailability using fiber-based formulation. - Demonstrates stronger cardiovascular effects in at-risk populations, aligning with L-Blend

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	<ul style="list-style-type: none"> - Examined both acute and chronic effects of red wine polyphenols (RWP) on vascular health. 	<ul style="list-style-type: none"> - Dealcoholized wine and pure resveratrol showed greater benefits than whole red wine. 	<ul style="list-style-type: none"> - focus on metabolic syndrome and cardiovascular health.
<p>Fragopoulou, E., Argyrou, C., Detopoulou, M., Tsitsou, S., Seremeti, S., Yannakoulia, M., Antonopoulou, S., Kolovou, G., Kalogeropoulos, P. . "The effect of moderate wine consumption on cytokine secretion by peripheral blood mononuclear cells: A randomized clinical study in coronary heart disease patients", <i>Cytokine</i>, 2021, 146, 155629</p>	<ul style="list-style-type: none"> - Randomized, single-blind, controlled, three-arm parallel intervention study. - 57 cardiovascular disease (CVD) patients randomly assigned to three groups: control (no alcohol), ethanol (27g ethanol/day from tsipouro), and wine (27g ethanol/day from red wine). - Blood samples collected at baseline, 4 weeks, and 8 weeks. - Cytokine secretion from peripheral blood 	<ul style="list-style-type: none"> - Ethanol group showed increased TNF-α (tumor Necrosis Factor-alpha) secretion by PBMCs at both 4 and 24 hours of incubation, indicating a pro-inflammatory effect. - Wine group had significantly lower TNF-α secretion compared to the ethanol group after 8 weeks, suggesting that wine micro-constituents counteract ethanol inflammatory effects. - No significant difference in soluble inflammatory biomarkers (hsCRP, IL-6, adiponectin, sP-selectin, sVCAM-1) between groups. - No impact on lipid profile, glucose metabolism, or liver function observed. 	<ul style="list-style-type: none"> - Reinforces the anti-inflammatory benefits of wine-derived bioactives, aligning with L-Blend focus on cardiovascular protection. - Confirms that polyphenols, not ethanol, modulate inflammation, supporting L-Blend alcohol-free approach. - Suggests that L-Blend formulation could help reduce inflammatory markers associated with cardiovascular disease, enhancing its potential as a functional supplement. - Highlights the immune-modulating effects of wine polyphenols, supporting L-Blend role in chronic inflammation management.

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	<p>mononuclear cells (PBMCs) analyzed under basal and inflammatory conditions.</p>		
<p>Gouveia HJCB, Urquiza-Martínez MV, Manhães-de-Castro R, Costa-de-Santana BJR, Villarreal JP, Mercado-Camargo R, Torner L, de Souza Aquino J, Toscano AE, Guzmán-Quevedo O. "Effects of the Treatment with Flavonoids on Metabolic Syndrome Components in Humans: A Systematic Review Focusing on Mechanisms of Action". <i>Int J Mol Sci.</i> 2022, 23(15), 8344</p>	<ul style="list-style-type: none"> - Systematic review of 29 randomized controlled trials (RCTs). - Included parallel-group and crossover studies. Investigated effects of flavonoid supplementation on metabolic syndrome components, lipid profile, blood pressure, and glucose metabolism. 	<ul style="list-style-type: none"> - Flavonoids significantly improve metabolic parameters, including blood pressure, lipid profile, and glucose homeostasis. - Anthocyanins and hesperidin consistently increased HDL cholesterol and reduced LDL cholesterol. - Quercetin and epicatechin lowered systolic blood pressure and improved insulin sensitivity. Theaflavins and catechin had no significant effect on metabolic parameters. 	<ul style="list-style-type: none"> - Supports L-Blend approach of incorporating wine-derived flavonoids to improve metabolic and cardiovascular health. - Confirms the effectiveness of flavonoids in modulating blood lipids, blood pressure, and glucose metabolism. - Reinforces the potential of L-Blend as a functional supplement targeting metabolic syndrome and cardiovascular disease prevention.
<p>Haas, E. A., Saad, M. J. A., Santos, A., Vitulo, N., Lemos, W. J. F., Martins, A.</p>	<ul style="list-style-type: none"> - Randomized, controlled, crossover trial involving 42 men with documented 	<ul style="list-style-type: none"> - Red wine consumption resulted in significant shifts in gut microbiota composition, leading to an increase in beneficial bacteria such as 	<ul style="list-style-type: none"> - Reinforces the role of wine-derived bioactives in modulating gut microbiota, supporting L-

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<p>M. A., ... & Da Luz, P. L. "A red wine intervention does not modify plasma trimethylamine N-oxide but is associated with broad shifts in the plasma metabolome and gut microbiota composition", <i>American Journal of Clinical Nutrition</i>, 2022, 116(6), 1515-1529</p>	<p>coronary artery disease (CAD).</p> <ul style="list-style-type: none"> - Participants consumed 250 mL of red wine per day (5 days per week) for 3 weeks, followed by a washout period and a 3-week alcohol abstention phase (or vice versa). - Gut microbiota composition was analyzed via 16S rRNA sequencing, and plasma metabolome changes were assessed using ultra-high-performance LC-MS/MS. 	<p><i>Ruminococcaceae</i>, <i>Bacteroides</i>, and <i>Prevotella</i>.</p> <ul style="list-style-type: none"> - Plasma Trimethylamine N-oxide levels remained unchanged, challenging its previously suggested role as a cardiovascular biomarker. - Metabolomic analysis indicated an enhancement in redox homeostasis, with elevated metabolites associated with antioxidant and metabolic health benefits. - Additionally, notable alterations were observed in amino acid metabolism, lipid metabolism, and vitamin pathways, suggesting potential systemic health benefits of red wine polyphenols. 	<p>Blend's focus on microbiome health and metabolic benefits.</p> <ul style="list-style-type: none"> - Confirms that wine polyphenols influence metabolic pathways, validating L-Blend's formulation as a functional supplement for cardiovascular and metabolic health. Highlights the potential of L-Blend's ingredients to enhance redox balance and improve gut microbiota composition, offering benefits beyond traditional non-alcoholic wines. - Suggests that L-Blend may support gut health and systemic metabolic balance without ethanol, aligning with growing consumer interest in microbiome-targeted health solutions.
<p>Domínguez-López I, Lamuela-Raventós RM, Razquin C, Arancibia-Riveros C, Galkina P, Salas-Salvadó J, Alonso-Gómez ÁM, Fitó M, Fiol M, Lapetra</p>	<ul style="list-style-type: none"> - Nested case-cohort study within the PREDIMED trial (1232 participants: 685 incident CVD cases and 625 random subcohort participants) 	<ul style="list-style-type: none"> - Urinary tartaric acid, an objective biomarker of wine consumption, correlated with self-reported wine intake ($r=0.46$). - Moderate urinary tartaric acid levels (3-12 and 12-35 $\mu\text{g/mL}$, which reflect ~3-12 and 12-35 glasses/month) were associated with 	<ul style="list-style-type: none"> - Supports the role of wine-derived compounds in cardiovascular health. - Provides evidence for objective biomarkers in assessing wine polyphenol intake.

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J, Gómez-Gracia E, Sorlí JV, Ruiz-Canela M, Castañer O, Liang L, Serra-Majem L, Hu FB, Ros E, Martínez-González MÁ, Estruch R. "Urinary tartaric acid as a biomarker of wine consumption and cardiovascular risk: the PREDIMED trial". Eur Heart J. 2025 Jan 7;46(2):161-172.		lower CVD risk (HR 0.62, P=0.050; HR 0.50, P=0.035). Higher or lower excretion levels did not show significant associations.	- Validates L-Blend approach of using wine-based ingredients for metabolic and cardiovascular health benefits.

2. Alfa-cyclodextrin

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Wittkowski, K. M. . The "Effect of Alpha-Cyclodextrin on Postprandial Glucose Excursions: a Systematic	<ul style="list-style-type: none"> - Systematic review and meta-analysis following PRISMA guidelines. - Included five clinical trials assessing the effect 	- Alpha-cyclodextrin significantly reduced postprandial blood glucose levels in carbohydrate-rich meals, confirming a dose-dependent effect.	<ul style="list-style-type: none"> - Supports L-Blend's focus on blood glucose regulation, reinforcing its ability to reduce glucose peaks after meals. - Confirms that natural dietary fibers can modulate postprandial glucose responses,

<p>Meta-Analysis”, Cureus, 2022, 14(11), e31160</p>	<p>of alpha-cyclodextrin (αCD) on postprandial glucose excursions.</p> <ul style="list-style-type: none"> - Data from studies involving carbohydrate-rich meals were standardized to 5 g αCD per 50 g starch. - Statistical analysis applied Fisher combined probability test to aggregate P-values.. 	<ul style="list-style-type: none"> - The effect was independent of insulin production, suggesting that αCD does not require increased insulin secretion to lower glucose levels. - Some studies reported lower triglyceride levels when αCD was taken with high-fat meals. 	<p>aligning with L-Blend’s formulation strategy. Highlights that L-Blend’s polyphenol and fiber combination may provide additional metabolic benefits, extending beyond cardiovascular protection.</p> <ul style="list-style-type: none"> - Demonstrates that L-Blend’s fiber-based formulation does not require insulin activation, making it suitable for individuals with insulin resistance.
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