

Table 1 – Supplementary material: PICOS format used for inclusion and exclusion criteria
 to gather human studies.

PICOS Format	Inclusion criteria	Exclusion criteria
Population	All participants aged 18+ were healthy or unhealthy. All sexes and races.	Animals and cell cultures, humans under 18.
Intervention	Studies which include supplementation with food sources/extracts/capsules containing anthocyanins. Interventions investigating the effect of anthocyanin intake on CVD and related biomarkers.	Studies which did not include anthocyanin supplementation or investigate the effects of anthocyanin intake on CVD health and related biomarkers.
Comparators	Studies investigating the effects of anthocyanin intake post consumption on cardiovascular health and related biomarkers. Studies using placebos, controls, and individuals with various health implications. Studies comparing different dosages of anthocyanins.	Studies not unveiling the association between anthocyanin intake on CVD health and related biomarkers.
Outcomes	Studies which resulted in changes in CVD health and related biomarkers i.e., oxidative stress and inflammation.	Studies with results that did not affect CVD health the cardiovascular system or related biomarkers.
Study design	Clinical trials, randomised controlled trials (RCTs) and human intervention studies. English language only. Studies with ≥ 30 individuals.	<i>In vitro</i> studies, animal studies, Meta-analysis, non-experimental studies (reviews), cohort studies, cross-sectional studies, and systematic reviews. Non-English. Studies with ≤ 30 individuals.

Table 2 – Supplementary material: PICOS format was used to gather animal studies for inclusion and exclusion criteria.

Parameters	Inclusion Criteria	Exclusion Criteria
Population	Animals (healthy) or animals with induced type 2 diabetes, insulin resistance, obesity, atherothrombotic vascular occlusion and hypercholesterolemia.	Cell cultures and humans. Studies using yeasts, bacteria, fungi, insects, and fish.
Intervention or Exposure	Studies that include anthocyanin-rich foods or supplementation of anthocyanins.	Studies that do not focus on the quantification of anthocyanins and the analysis of the association between anthocyanin consumption on CVD health and related biomarkers.
Comparator	Studies that compare the biomarkers pre and post-intervention/exposure. Placebo-controlled trials are considered. Studies comparing different dosages of anthocyanins (at least a placebo and one anthocyanin dosage).	Trials that only include a testing group and control groups are excluded.
Outcomes	Any difference in cardiovascular health and related biomarkers (inflammation & oxidation-related biomarkers). Blood pressure, physiology/anatomy of the cardiovascular system.	Studies which result in other results that do not affect CVD or the related biomarkers or the blood pressure, physiology/anatomy of the cardiovascular system.
Study Design	Experimental studies using animals. Studies reported only in English with a minimum of 5 animals per group.	Systematic review, meta-analysis, <i>in vivo</i> studies, Review papers, human studies, studies with less than 8 animals, clinical trials, randomised clinical trials

Table 3 – Supplementary material: Database search strategy used for animal studies.

Search terms	Anthocyanins, CVD, cardiometabolic health/ disease/risk oxidative stress, inflammation, atherosclerosis
Databases	EMBASE, EBSCO and Web of Science
Types of studies included	Animal trials and placebo-controlled trials
Inclusion criteria	English language, animal trials, studies from 2000-2022.
Exclusion criteria	Human trials, <i>in vitro</i> , systematic reviews, meta-analysis, non-English, clinical trials.

Search terms	Anthocyanins AND CVD OR Cardiometabolic disease OR Cardiovascular health OR Cardiometabolic risk Oxidative stress OR Inflammation OR Atherosclerosis	Table 4 -
Databases	EBSCO, EMBASE and Web of Science	Suppl
Types of studies to be included	Clinical trials, RCTs, human interventions and placebo-controlled trials.	emen
Inclusion criteria	English language, human studies, dating from 2000-2022	tary
Exclusion criteria	<i>In vitro</i> , Animal studies, systematic reviews, meta-analysis, non-English	mate
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h strategy used for human studies.

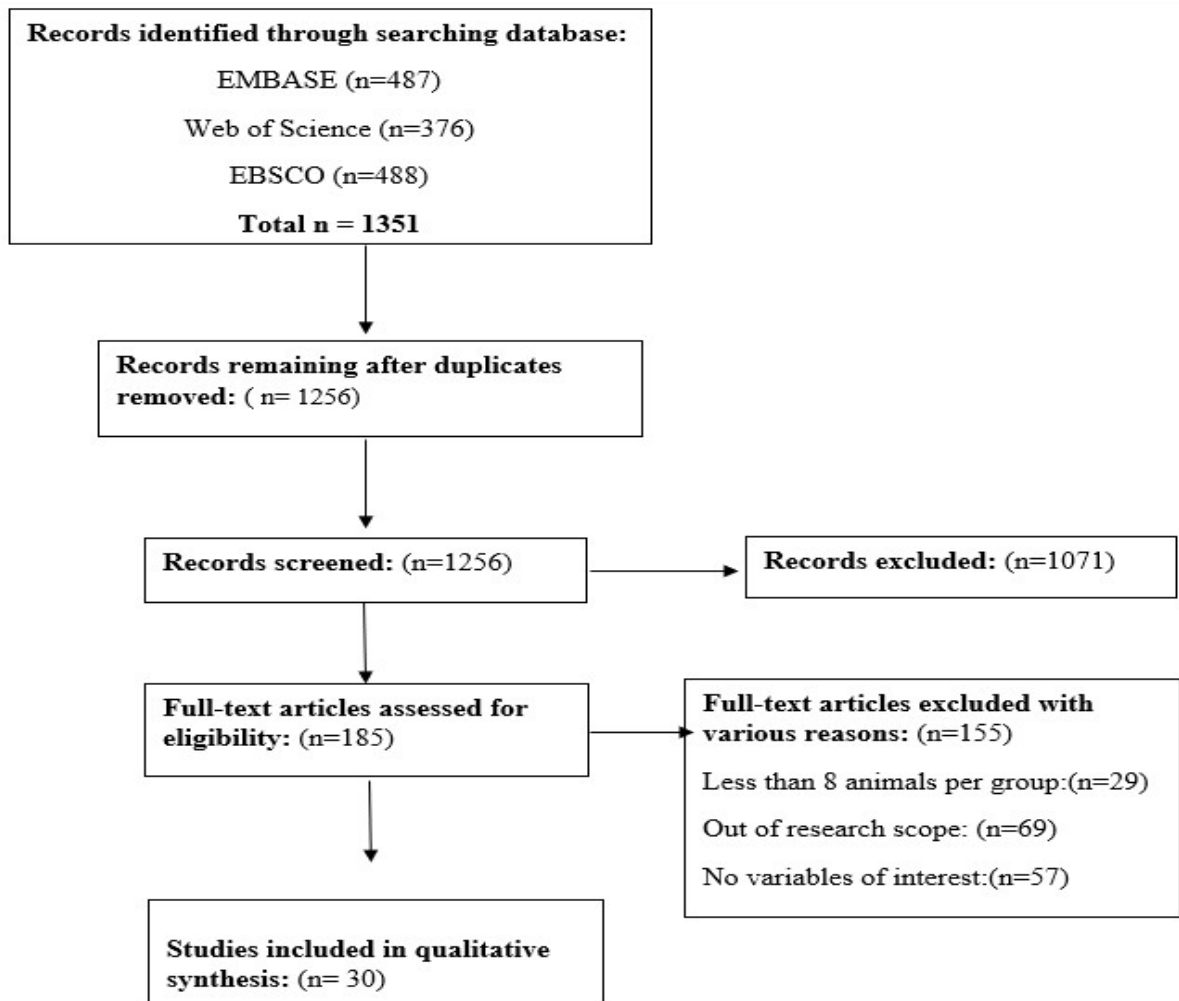


Fig. 1 – Supplementary material: Flow diagram depicting the study selection and screening process for animal studies.

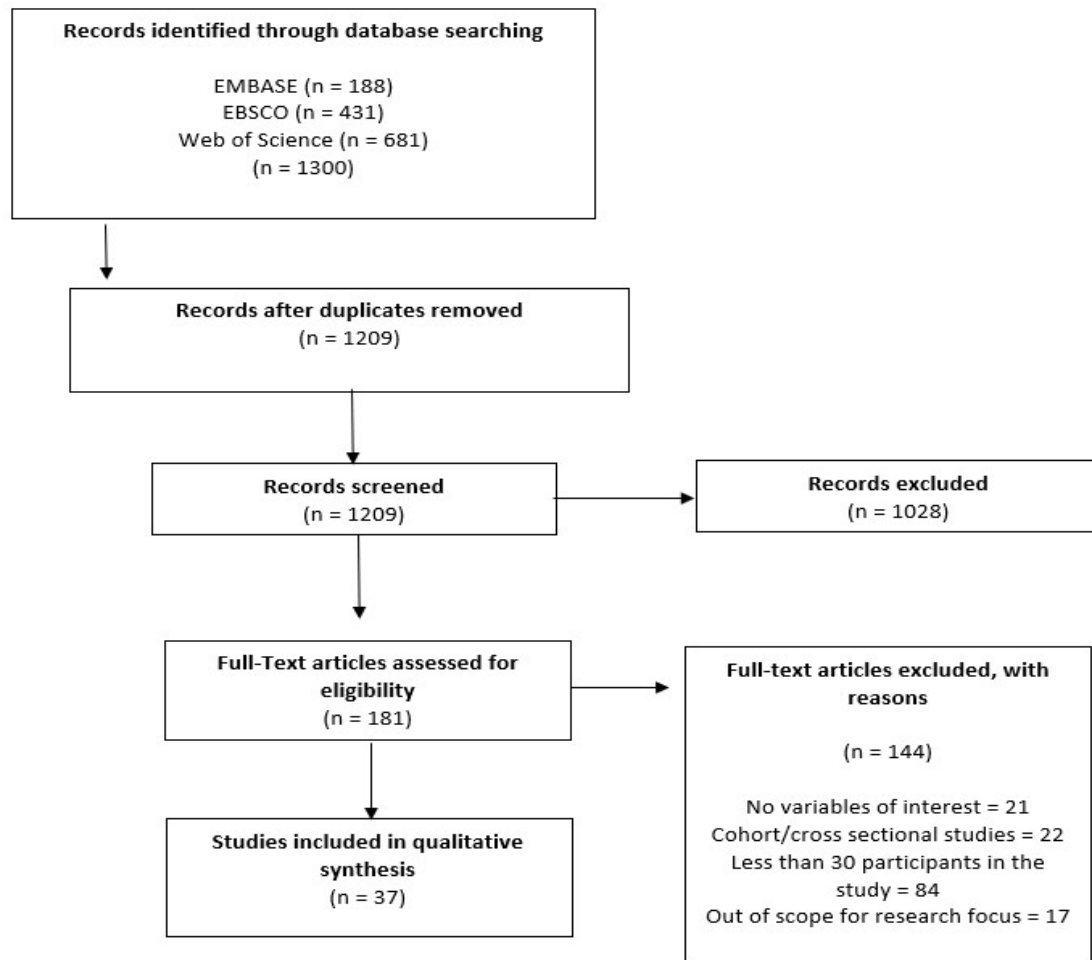


Fig. 2 – Supplementary material: Flow diagram depicting the study selection and screening process.