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### Stabilizing Effect of Grape Seed Extract on Ascorbic Acid

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L-Ascorbic acid (AsA) has numerous biological activities. It is known that AsA is unstable under neutral and alkaline conditions, degrading almost completely within several hours, whereas it is relatively stable under acidic conditions. The present study investigated the effect of grape seed extract (GSE), which contains proanthocyanidins, on the stability of AsA under neutral and alkaline conditions. The addition of GSE to AsA solution in 3,3'-dimethylglutaric acid-tris(hydroxymethyl)aminomethane-2-amino-2-methyl-1,3-propanediol (GTA) (50mM, pH 7.0 or 10.0) buffer significantly increased the remaining amount of AsA and the 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical-scavenging activity, compared with those of AsA alone. In particular, it was clarified that GSE contributed to the stability of AsA at an alkaline pH. We also investigated the effect of GSE on the stability of AsA under *quasi*-physiological conditions. It was revealed that GSE stabilized AsA in simulated intestinal juice (pH 8.5) at 37°C. DPPH radical-scavenging activity was closely correlated with the remaining amounts of AsA. The present results, although not directly transferable to *in vivo* conditions, suggest that GSE may stabilize AsA under neutral and alkaline conditions and affect the physiological activity of AsA.

**Keywords:** [grape](#), [proanthocyanidin](#), [\(+\)-catechin](#), [ascorbic acid](#), [antioxidation](#), [radical-scavenging activity](#)



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