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Resumo	Peptic ulcers are lesions that affect the gastrointestinal tract and that can be triggered by external factors such as alcohol use. This study investigated the gastroprotective role of two anthocyanidins, malvidin and cyanidin chloride, in an ethanol-induced gastric ulcer model in male and female mice (ovariectomized and supplemented with 17β-estradiol or not) and aimed to evaluate the effectiveness of anthocyanidins in preventing the formation of lesions and to identify the underlying mechanisms, while considering hormonal differences. Moreover, in silico comparative analysis was performed to predict the properties and biological behaviors of the molecules. We observed that the hormonal status did not interfere with the gastroprotective action of malvidin, although antioxidant mechanisms were modulated differently depending on sex. On the other hand, cyanidin showed gastroprotective activity at different doses, demonstrating that, for the same experimental model, there is a need to adjust the effective dose depending on sex. In silico analysis showed that, despite being structurally similar, the interaction with receptors and target proteins in this study (myeloperoxidase, superoxide dismutase, catalase, and reduced glutathione) differed between the two molecules, which explains the difference observed in in vivo treatments.

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