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Growth inhibitory action of cranberry on Helicobacter pylori.

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Source

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Abstract

BACKGROUND AND AIM:

Cranberry is a fruit that originated in North America, and it has been used by Native Americans for bacterial infections. Recent studies have revealed it to be effective for preventing refractory urinary infections, while also suggesting that it plays a possible role in the eradication of Helicobacter pylori (H. pylori).

METHODS:

The H. pylori strains used in the present study were NCTC11637 and 11638. Sugar and organic acid-rich, and polyphenol-rich fractions were obtained from cranberry juice concentrate by Amberlite XAD7HP-column chromatography. The H. pylori growth inhibition was estimated by OD(660) and titration in liquid culture, and by an agar dilution plate method. The shapes of the bacteria were analyzed by scanning electron microscopy.

RESULTS:

Cranberry extract suppressed bacterial proliferation in a dose-dependent manner. In the comparison with other juices, polyphenol-rich fruits (cranberries, blueberries, and red grapes) showed similar growth inhibitory activity, whereas polyphenol-poor fruits (oranges, pineapples, apples, and white grapes) did not show any activity. The polyphenol-rich fraction of cranberry maintained the H. pylori-growth inhibitory activity. More bacteria in a coccoid form were observed after culture with cranberry.

CONCLUSION:

Cranberry extract inhibited H. pylori proliferation and it is suggested that polyphenols are responsible for this action. The morphological analysis suggested that cranberry induces H. pylori to develop a coccoid form, thereby inhibiting its growth bacteriostatically. Further basic studies to clarify these mechanisms in combination with in vivo studies are needed.

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