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Short communication

Steamed ginger (*Zingiber officinale*): Changed chemical profile and increased anticancer potential

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Abstract

Ginger, from the rhizome of *Zingiber officinale* Rosco (*Zingiberaceae*), is a common condiment for foods and beverages. In this work, we tested a hypothesis that a steaming process affects the chemical profile and anticancer potential of ginger. An HPLC method with TOF/MS and DAD was developed to analyse the chemical constituents in ginger. The antiproliferative effect of fresh, dried and steamed gingers was evaluated using human Hela cancer cells. The results showed that the antiproliferative effect of steamed ginger at 120Â Â°C for 4Â h was approximately 1.5- and 2-fold higher than that of dried and fresh ginger, respectively. Twenty-two components were characterised in the steamed ginger. The decreased concentration of gingerols and increased levels of shogaols contributed to the improved anticancer

potential of the steamed ginger. This study elucidated the relationship of the heating process with the constituents and anticancer activity, and developed an optimised processed ginger extract for chemoprevention.

Highlights

â–º The constituents in treated and untreated ginger were compared by HPLC-DADâ€“TOF/MS. â–º The steaming process could enhance the anticancer effects of ginger. â–º The increased level of shogoals contributed to the improved anticancer potential.

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Keywords

Ginger (*Zingiber officinale*); Steaming; Hela cancer; 6-Shogaol; 6-Gingerol; TOF/MS

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