

Functional compounds - isothiocyanates and their biological role



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Summary

People are increasingly aware of the medical and health benefits associated with secondary metabolites found in fruits and vegetables. Recently, research has confirmed that many common foods contain non-nutritive compounds such as isothiocyanates (ITCs) that have a role in disease prevention.

Epidemiological and pharmacological studies suggest that consumption of cruciferous plants and vegetables containing ITCs, such as cauliflower (*Brassica oleracea* var. botrytis), cabbage (*Brassica oleracea* var. Capitata), wasabi (*Wasabia japonica*) and horseradish (*Aromacia rusticana*) help reduce the risk of cancer in many organs of the body (Steinmetz *et al.*, 1991; Chung, 1992; Hechet, 1995; Verhoeven *et al.*, 1996; Claudio *et al.*, 1996).

ITCs are derived from a family of compounds called glucosinolates, which are mainly found in cruciferous plants (Sultana *et al.*, 2000). Apart from the valuable contribution ITCs give to flavour many aromatic herbs and vegetables of cruciferae family, considerable interest is focused on the wide variety of their active biological roles. For instance, studies on the direct relationship of ITC and human cancer (Seow *et al.*, 1998 and London *et al.*, 2000) have provided the evidence to support the role of ITCs in prevention of lung and esophageus cancers.

In the present study, all the health benefits from consuming dietary ITCs are accumulated in the flow chart. This study highlights the biological importance of ITCs in commonly consumed foods.

Conclusion

Eat cruciferous vegetables containing glucosinolates as the ITCs have many positive biological effects.



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