the monomeric form of stilbenes, the major active compound is trans-resveratrol and most of the physiological studies conducted have been targeted on its activity (Cassidy et al. 2000). The main dietary sources of stilbenes are grapes, peanuts and peanut products. Trans-resveratrol is a phytoallexin that protects grapevines from fungal infection.

2.2.3 Glucosinolates

Glucosinolates are sulphur-containing glucosides prevalent in the cruciferous family of vegetables, especially *Brassicas* (e.g. cabbage, cauliflower, broccoli and Brussels sprouts) and are also present at relatively high levels in oilseeds (such as rapeseed) and also in condiments (like mustard seed). Over a hundred different glucosinolates have been recognized in the plant kingdom, but about ten are only present in cruciferous vegetables (Stoewsand 1995). Although glucosinolates are structurally diverse, based on the side-chain structure, there are only three principal groups: aliphatic, aromatic and heteroaromatic (indolyl) glucosinolates (Mithen et al. 2000). All the glucosinolates have a β-D-thioglucose, a sulphonated oxime moiety and a variable side-chain derived from methionine, tryptophan, phenylalanine or branched-chain amino acids (Fenwick et al. 1983).

During food preparation or chewing, the plant tissue is damaged, leading to the contact of the glucosinolates with myrosinase, the endogenous enzyme which hydrolyzes the former, to yield a complex mixture of products, primarily isothiocyanates, nitriles and thiocyanates. The glucosinolate breakdown of products exerts a range of antinutritional and toxic effects in animals higher up in the animal kingdom, the most thoroughly studied of which is the goitrogenic effect of some products. There is little or no epidemiological evidence for this goitrogenic effect, resulting in disease in humans, at present.

Finley (2005) on the other hand, summarized that *in vitro* and *in vivo* studies have reported that isothiocyanates intrude on many steps of cancer development, including modulation of phase I and II of detoxifying enzymes, acting as a direct or indirect antioxidant by phase II enzyme induction, modulating cell signalling, induction of apoptosis, control of the cell cycle and reduction of *Helicobacter* infections. Apoptosis and alteration of phase I and phase II detoxification pathways have been considered the most significant mechanisms by which the glucosinolate/isothiocyanates inhibit carcinogenesis (Mithen et al. 2000; Talalay and Fahey 2001; Finley 2005). The bioactivity of glucosinolates is enhanced only when they have been enzymatically hydrolysed to the associated isothiocyanates.

2.2.4 Organosulphur Compounds

Allium compounds are organosulphur compounds (OSCs) found in *Allium* vegetables such as garlic, onions, shallots, scallions, chives and leeks, which are responsible for their distinctive flavour and aroma. In addition, as many authors reported, these compounds also contribute to the medicinal effects of these above-listed vegetables. The OSCs in *Allium* vegetables have been reported to exert various physiological activities, including antimicrobial activity, lipid-lowering effects, hypocholesteremic