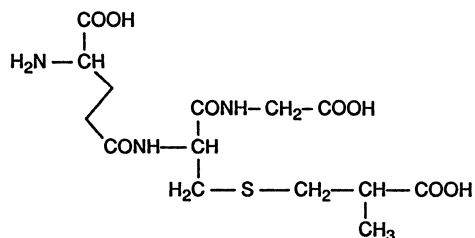
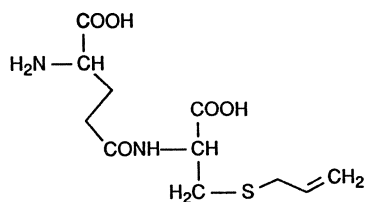


In addition, some sulfur containing acidic peptides such as  $\gamma$ -glutamyl-*S*-methylcysteine and its sulfoxide derivative,  $\gamma$ -glutamyl-*S*-(2-carboxy-propyl)-cysteinyl-glycine (11-26);  $\gamma$ -glutamyl-*S*-allylcysteine (11-27); and  $\gamma$ -glutamyl-*S*-propylcysteine as well as  $\gamma$ -glutamylphenylalanine without sulfur were found in garlic [12].



$\gamma$ -Glutamyl-*S*-(2-carboxy-propyl)-cysteinyl-glycine (11-26)



$\gamma$ -Glutamyl-*S*-allylcysteine (11-27)

### 11.2.2 Chemical Constituents of *Allium tuberosum*

Seven sulfides: dimethyl sulfide, diallyl sulfide, methyl allyl disulfide, dimethyl trisulfide, diallyl disulfide, methyl allyl trisulfide and dimethyl tetrasulfide were identified together with 2 ketones, 18 alcohols, and 2 esters in the oil obtained from extraction of the steam distillate of *A. tuberosum*. Dimethyl disulfide and dimethyl trisulfide were the main volatile components [13].

### 11.3 Pharmacology

Garlic or its constituents exhibit various biological activities such as antibacterial, antifungal, antiviral, antitumor and antidiabetic effects. The greatest interest, however, has been focused on their anticholesterolemic and antithrombotic activities. Applied orally, garlic and its ethanol extract reduced plasma and liver cholesterol levels in male rats fed a diet containing 1% cholesterol. In particular, very low density lipoprotein and low density lipoprotein cholesterol fractions were reduced. The hypocholesterolemic principle of garlic was found in the ethanol extract and was stable when autoclaved at 120°C for 1 h [14]. Oral administration of an aqueous extract of garlic to hypercholesterolemic patients for 2 months significantly reduced cholesterol levels. Withdrawal of treatment increased the cholesterol levels again [15].