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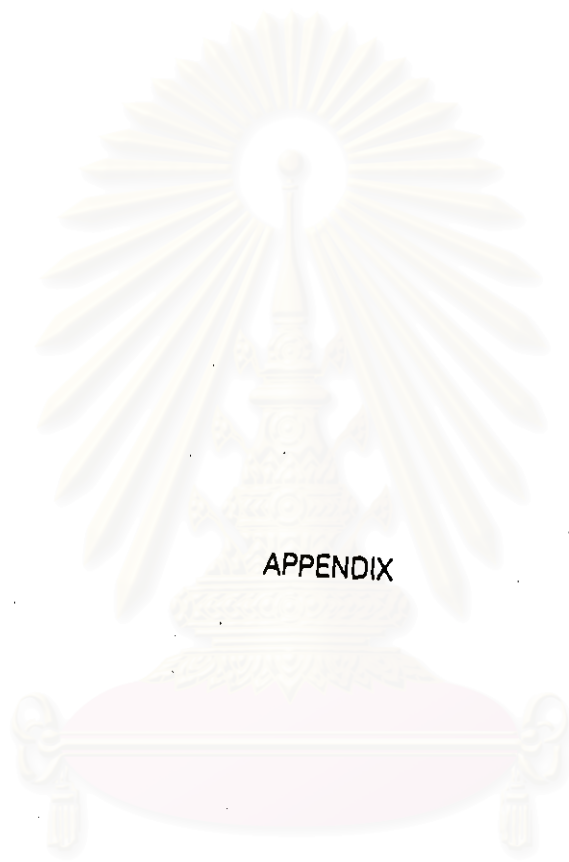
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APPENDIX

GAS CHROMATOGRAPH / MASS SPECTROMETER

Gas chromatography analysis is a method using for detection of evaporated sulfur compound in garlic oil. Garlic oil contained in closed vial is incubated in distilled water at 60^oC for 30 min. Then , evaporation of garlic oil is injected into column of Gas Chromatograph / Mass Spectrometer (GC/MS) instrument. GC/MS is used to detect structural formula of organic compound that could evaporate. The data from this detection demonstrate as mass spectrum of organic compound. And, this spectrum could be shown as structural formula of detected organic compound.

The conditions used in GC/MS were :

Column

Carbovax 100/120 Merse, 2 metres

FFAP 10 % on CW

Headspace sample control

sample temperature 60^oC

incubation time 30 min

Gas chromatograph

range x100

column temperature 80^oC

injection temperature 150^oC

Gas pressure

N₂ flow rate 30 ml/min

Sample injection

injection volume 0.5 ml

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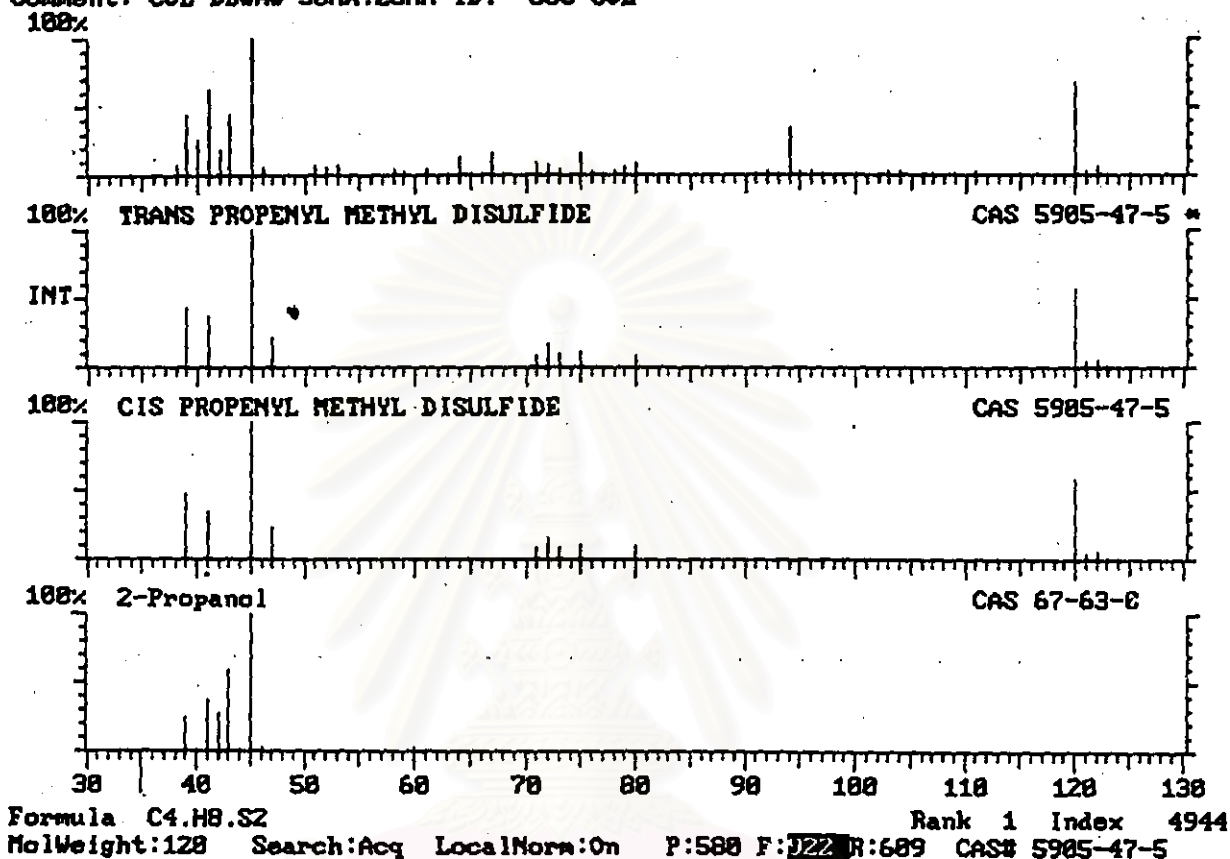


Fig.19 The result of mass spectrum indicated that garlic oil contained
cis-trans propenyl methyl disulfide.

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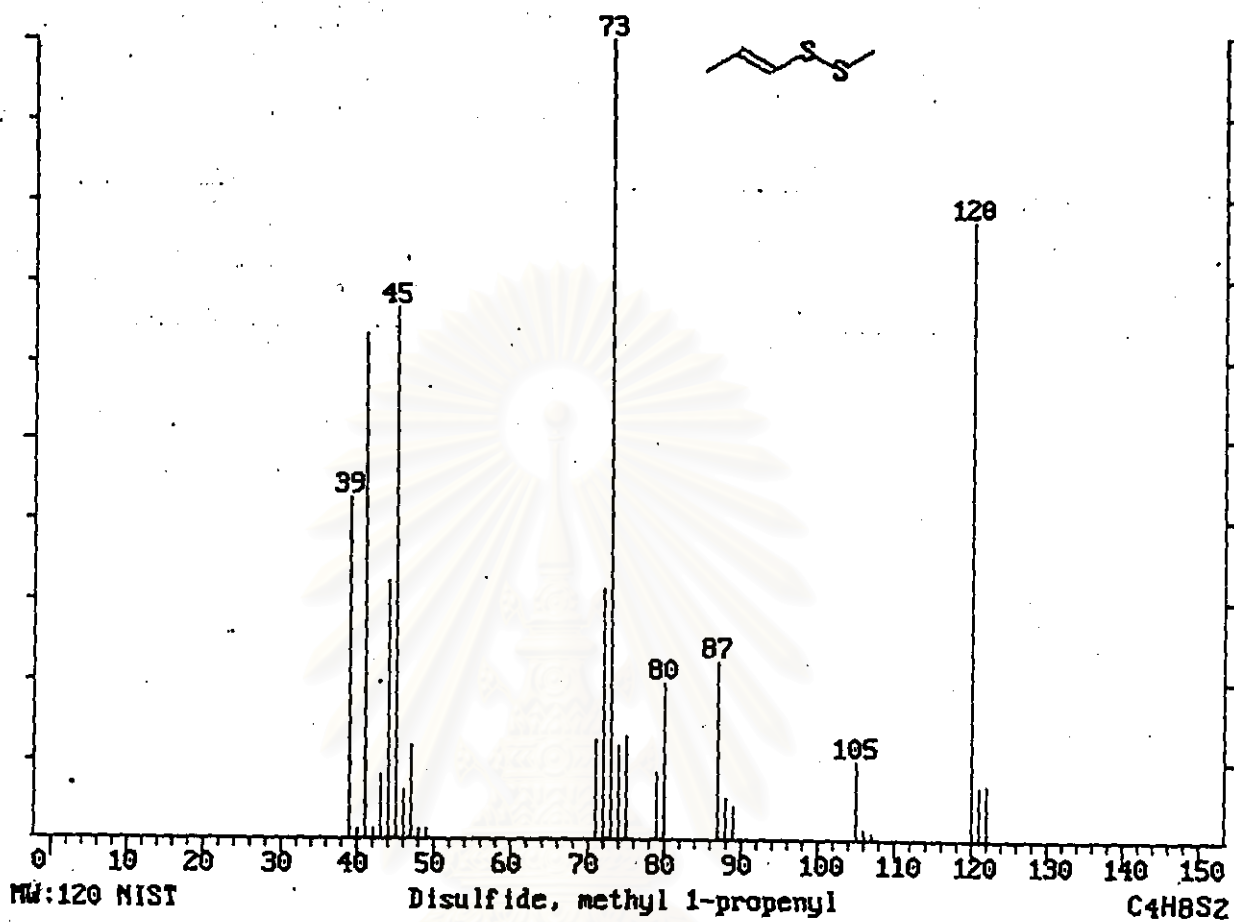


Fig.20 Structural formula of disulfide,methyl 1-propenyl that indicated by mass spectrum of garlic oil was shown.

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From this analysis by using GC/MS demonstrated that garlic oil consists of propenyl methyl disulfide as showed in Figure 19 and 20. Its structure is most likely ajoene. The structural formula of ajoene as showed in Figure 21 (Block, 1985). GC/MS is a method using for detection of evaporated sulfur compound in organic compound. Since the garlic oil is very sticky and could not inject into GC/MS. Moreover, the suitable solvent could not obtain for diluting, this garlic oil, therefore, the analysis is performed using evaporation of oil. However, other compounds that have higher boiling temperature will not be able to detect by this technique.

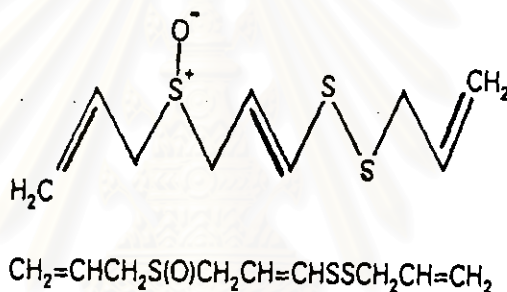


Fig.21 Structural formula of ajoene (Block , 1985).

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BIOGRAPHY

Miss Patcharin Sempukdeekul was born on June 17, 1969, in Bangkok. She graduate Bachelor degree of Nursing from Mahidol University in 1991. After that, she was a nurse at gynecological unit, Siriraj hospital until 1994.



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