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APPENDIX

Appendix 1 : Turk Island Salt solution + modified BG₁₁ medium contained the following components:

1. Preparation of Turk Island Salt solution

Stock solution A	:	KCl	33.3	g
		MgCl ₂ .6H ₂ O	275.0	g
		CaCl ₂ .2H ₂ O	73.3	g
		and made up to 5 litres with distilled water		
Stock solution B	:	MgSO ₄ .7H ₂ O	374.0	g
		and made up to 5 litres with distilled water		

2. Composition of modified BG₁₁ medium (BG₁₁ medium + NaNO₃ solution)

NaNO ₃	(75.0g/500ml)	50ml
KH ₂ PO ₄	(8.0g/200ml)	5 ml
MgSO ₄ .7H ₂ O	(15.0g/200ml)	5 ml
CaCl ₂ .2H ₂ O	(7.2g/200ml)	5 ml
Na ₂ CO ₃	(4.0g/200ml)	5 ml
citric acid	(1.2g/200ml)	5 ml
EDTA.Na ₂	(0.2g/200ml)	5 ml

$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ (1.2g/200ml) 5 ml

* Trace element A₅ solution + Co contained the following component in gram per litre ; H_4BO_4 (2.86), $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ (0.22), $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ (0.08), $\text{MnCl}_4 \cdot 4\text{H}_2\text{O}$ (1.81), $\text{Na}_2\text{MoO}_4 \cdot 2\text{H}_2\text{O}$ (0.39) and $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ (0.049).

Culture medium of *A. halophytica* was prepared by adding all solution of item 2 at indicated volume to 500 ml of Stock solution A and 500 ml of Stock solution B. To this mixture 140.8 g NaCl was added and adjusted pH to 7.6 by slowly adding 2M NaOH then adjusted the final volume to 5 litres with distilled water. The medium was sterilized by autoclaving at 15 lb/in² for 15 minutes.

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Appendix 2 : Preparation of polyacrylamide gel electrophoresis.**1. Stock reagent****30% Acrylamide, 0.8% bis stock solution**

acrylamide 30.3 g

bis-acrylamide 0.8 g

adjust volume to 100 ml

Solution B**For native-PAGE**

Tris 18.2 g

adjust pH to 8.8 with 1M HCl and adjust volume to 100 ml with distilled water

For SDS-PAGE

Tris 18.2 g

10% (w/v) SDS 4.0 ml

adjust pH to 8.8 with 1M HCl and adjust volume to 100 ml with distilled water

Solution C**For native-PAGE**

Tris 6.0 g

adjust pH to 6.8 with 1M HCl and adjust volume to 100 ml with distilled water

For SDS-PAGE

Tris 6.0 g

10%(w/v) 4.0 ml

adjust pH to 6.8 with 1M HCl and adjust volume to 100 ml with distilled water

Electrophoresis buffer**For native-PAGE**

Tris 3.0 g

Glycine 14.4 g

adjust pH 8.8 with 1 M HCl and adjust volume to 1000 ml with distilled water

For SDS-PAGE

Tris	3.0	g
Glycine	14.4	g
SDS	1.0	g

adjust pH to 8.3 with 1M HCl and adjust volume to 1000 ml with distilled water

2. Non-denaturing PAGE7.5 % Separating gel

30% acrylamide solution	2.5	ml
Solution B	2.5	ml
distilled water	5.0	ml
TEMED	10.0	μ l
10%(w/v) $(\text{NH}_4)_2\text{S}_2\text{O}_8$	50.0	μ l

5% Stacking gel

30% acrylamide solution	1.3	ml
Solution B	2.0	ml
distilled water	4.6	ml
TEMED	10.0	μ l
10%(w/v) $(\text{NH}_4)_2\text{S}_2\text{O}_8$	60.0	μ l

Sample buffer

1.25 M Tris-HCl pH 6.8 : glycerol : distilled water (1:2:2 v/v)
were added with trace amount of bromo-phenol blue.

SDS-PAGE10% Separating gel

30% acrylamide solution	3.3	ml
Solution B	2.5	ml
distilled water	4.2	ml
TEMED	5.0	μ l
10%(w/v) $(\text{NH}_4)_2\text{S}_2\text{O}_8$	50.0	μ l

5% Stacking gel

30% acrylamide solution	1.3	ml
Solution B	2.0	ml
distilled water	4.6	ml
TEMED	10.0	μ l
10%(w/v) $(\text{NH}_4)_2\text{S}_2\text{O}_8$	60.0	μ l

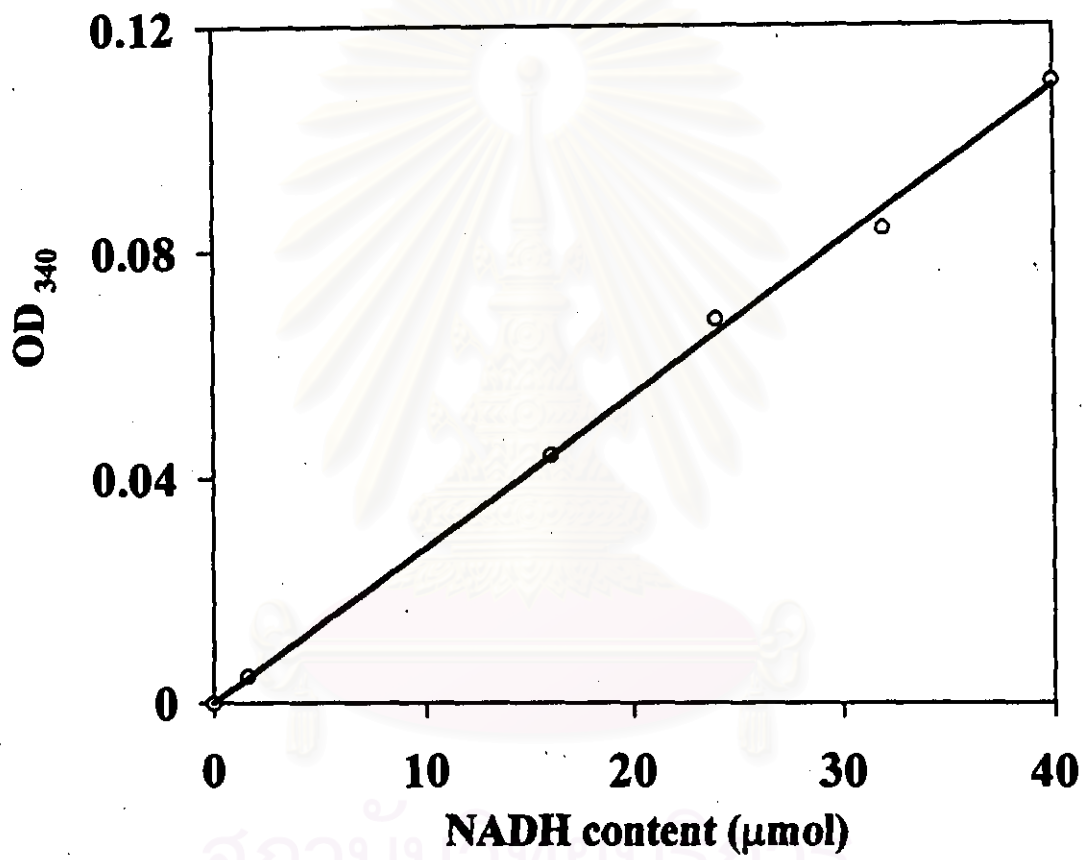
Sample buffer

1 M Tris-HCl	0.6	ml
50%(v/v) glycerol	5.0	ml
10%(w/v) SDS	2.0	ml
2- mercaptoethanol	0.5	ml
1%(w/v) bromophenol blue	1.0	ml
distilled water	0.9	ml



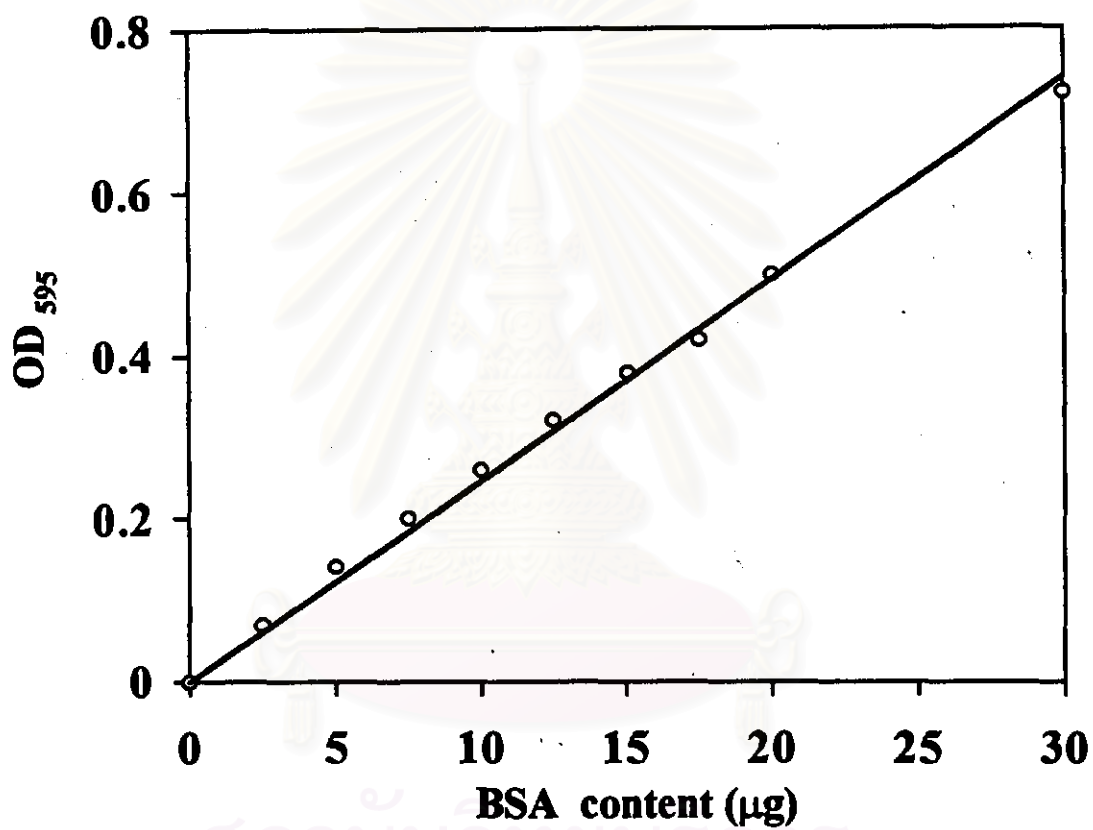
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Appendix 3 : Standard curve of NADH



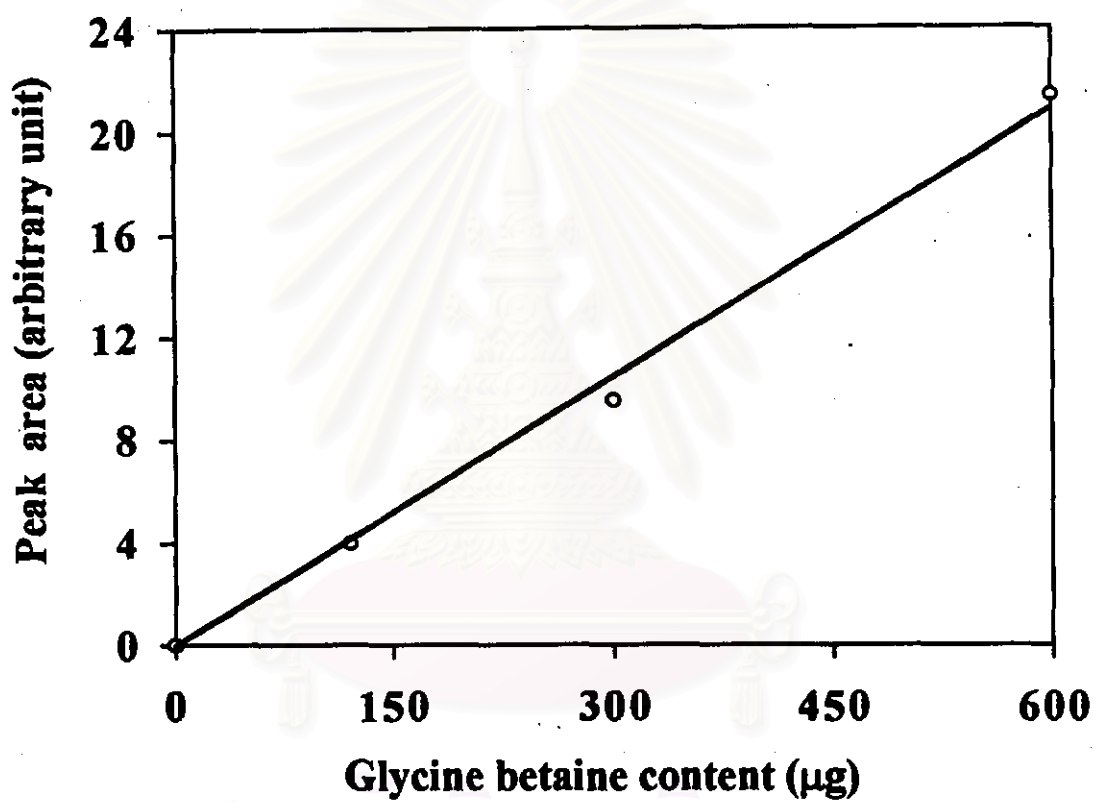
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Appendix 4 : Standard curve of BSA



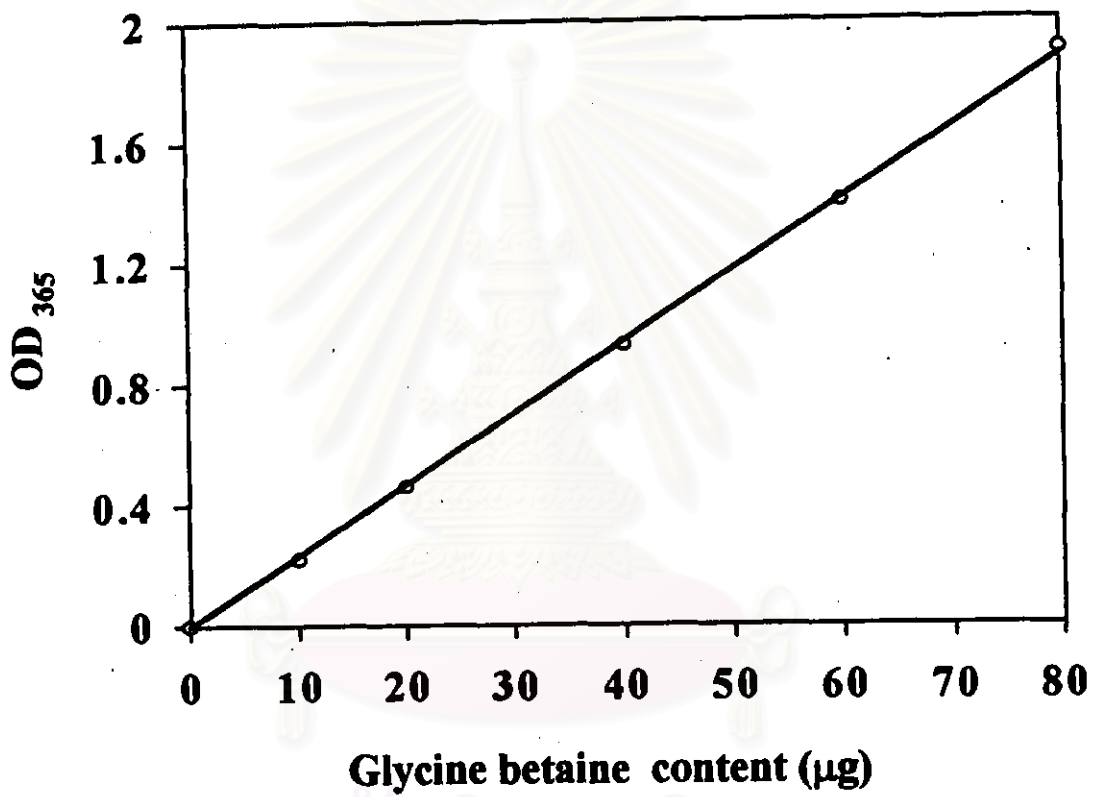
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Appendix 5 : Standard curve of glycine betaine determined by $^1\text{H-NMR}$



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Appendix 6 : Standard curve of glycine betaine determined by tri-iodide assay



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Miss Uthaiwon Kumarb was born on November 7 ,1972 in Petchburi, Thailand. She graduated with a Bachelor Degree of Science in Biology from Faculty of Science, Silapakorn University, Nakhonpathom, Thailand in 1993 and studied for a Master Degree in Biochemistry program since 1994.



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