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## APPENDIX 1

## Components of Surzycki media

(Surzycki, 1971)

1) Stock Solutions and Reagents

1.1) Stock salt solution 1 Litre of distilled water contains

1.1.1) Solution A :  $\text{NH}_4\text{Cl}$  8 g and  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  2 g, dissolved in 700 ml water

1.1.2) Solution B :  $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$  1.14 g, dissolved in 300 ml water and then it was added to solution A

The three salts cannot be dissolved together, otherwise a precipitate forms and the solution cannot be used.

1.2) Phosphate I 1 Litre of distilled water contains

$\text{K}_2\text{HPO}_4$  14.34 g and  $\text{KH}_2\text{PO}_4$  7.26 g

1.3) Phosphate II 1 Litre of distilled water contains

$\text{K}_2\text{HPO}_4$  93.5 g and  $\text{KH}_2\text{PO}_4$  63.0 g

1.4) Stock Trace Elements 1 Litre of distilled water contains

$\text{H}_3\text{BO}_3$  11.4 g

$\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$  22.0 g

$\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$  5.06 g

$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  4.99 g

$\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$  1.61 g

$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$	1.57 g
$(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4\text{H}_2\text{O}$	1.10 g
$\text{Na}_2\text{EDTA}$	50.0 g

1.5) 1 M  $\text{MgSO}_4$  Dissolve  $\text{MgSO}_4 \cdot 7 \text{H}_2\text{O}$  24.65 g in distilled water to make 100 ml.

2) Preparation of Tris Minimal Phosphate Medium (TMP)

1 Litre medium contains

distilled water	950 ml
Tris	2.42 g
salt solution	50 ml
phosphate buffer II	1 ml
trace element	1 ml
10 M hydrochloric acid	1.5 ml
1 M $\text{MgSO}_4$	1 ml

The final pH of the medium before autoclaving is 7.0.

3) Preparation of Minimal-High Magnesium Medium (MM)

1 Litre of medium contains

distilled water	900 ml
salt solution	50 ml
phosphate buffer I	50 ml
trace element	1 ml
1 M $\text{MgSO}_4$	1 ml

The final pH of the medium before autoclaving is adjusted 6.7-6.8.



## APPENDIX 2

Components of nitrogen free medium

(Schlosser et al, 1976)

1 Litre medium contains

$\text{NaH}_2\text{PO}_4 \cdot 2\text{H}_2\text{O}$	0.39	g
$\text{Na}_2\text{HPO}_4$ (anhydrous)	0.36	g
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	0.25	g
$\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$	0.015	g

The pH of medium is adjusted to 7.0.

## APPENDIX 3

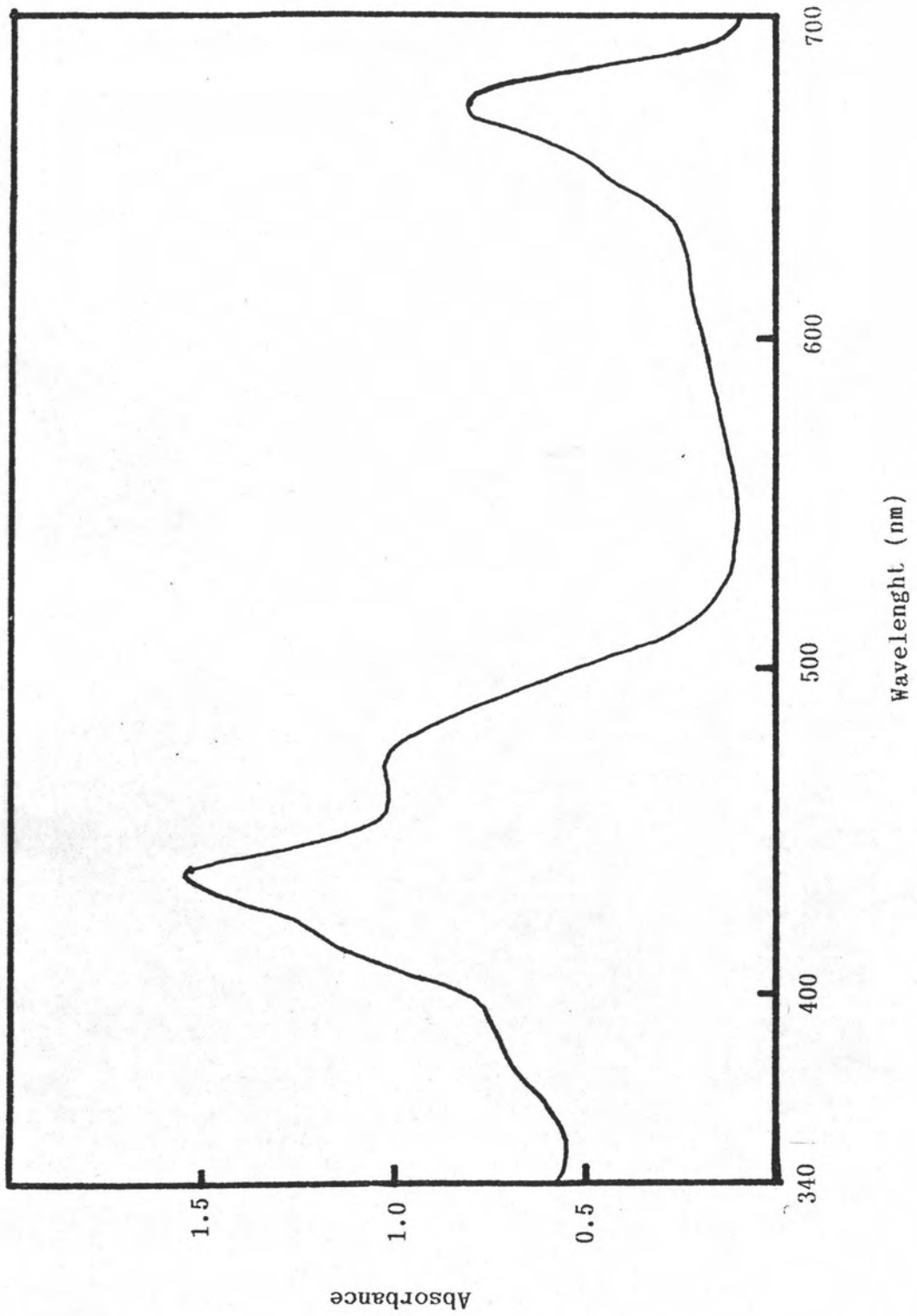
## Toluene Based Scintillation Fluid Triton X-100

1 Litre contains

2,5-Diphenyloxazole (PPO)	7.3 g
1,4-Bis-(5-phenyl-2-oxazolyl)-benzole (POPOP)	0.167 g
Triton X-100	250 ml
Toluene to make volume	1000 ml

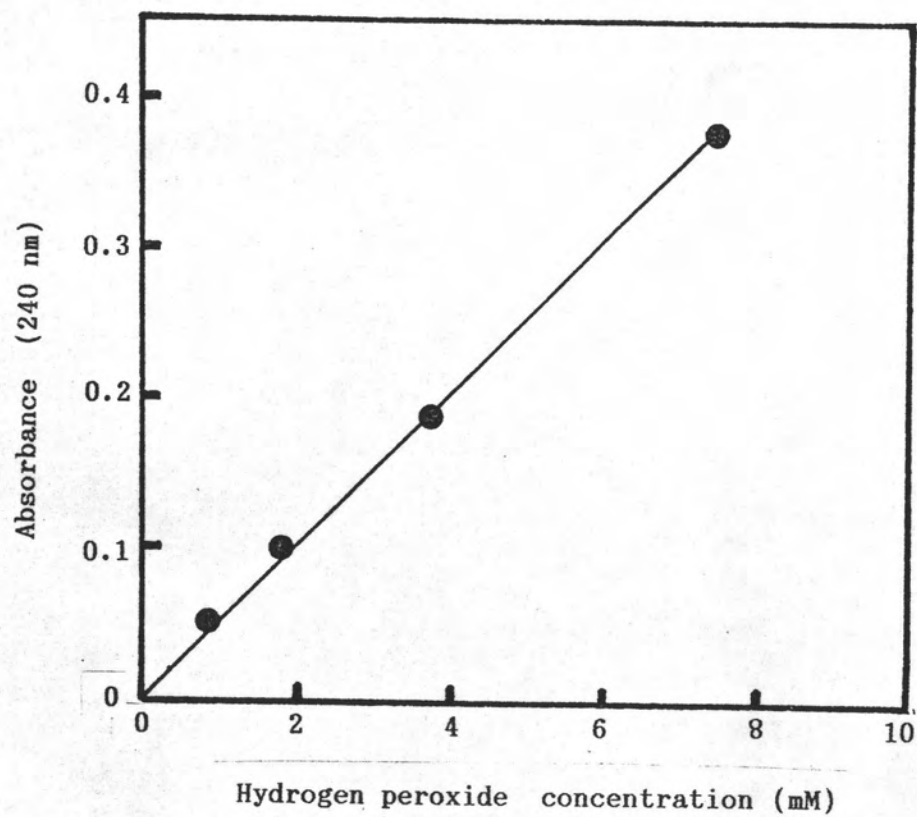
Appendix 4 Absorption spectrum of crude lysate from Chlamydomonas reinhardtii 137c.

A suspension of wild type cell ( $1 \times 10^7$  cells in 6 ml of 5 mM phosphate buffer, pH 7.8) was disrupted by sonication for 3 min and centrifuged. The supernatant was scanned in the range of visible light. Maximum peak of absorption was shown at 435 nm.



## APPENDIX 5

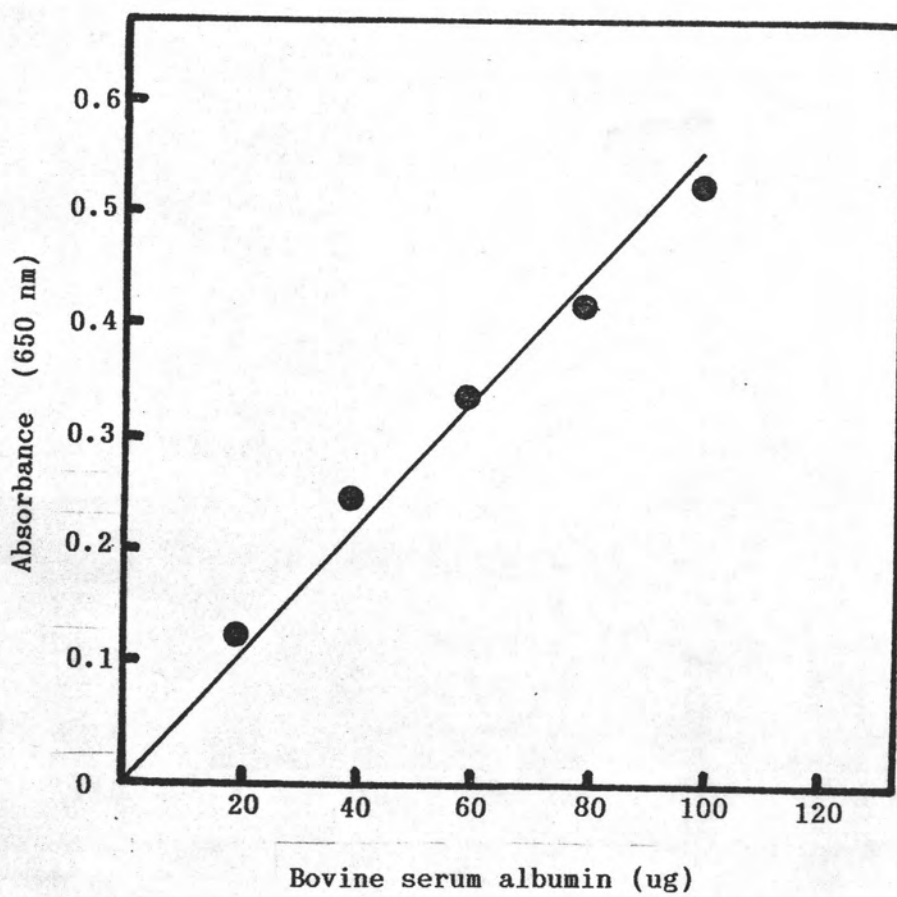
Standard curve for determination of hydrogen peroxide



## APPENDIX 6

Standard curve for determination of protein

(Lowry , 1951)



## BIOGRAPHY

The author, Miss Suporn Nuchadomrong, was born on March 28, 1960. She has got Bachelor of Science (B.Sc. in Biochemistry) and Master of Science (M.Sc. in Biochemistry) from the Department of Biochemistry, Faculty of Science, Chulalongkorn University (Gold Medal Award from the Tab Nilanidhi Foundation), and continued her doctoral program at the same department. During her study she was subsidized by Research Assiatant fellowship from Faculty of Science, Chulalongkorn University, a fellowship from the Science and Technology Development Board, and a fellowship from the National Centre of Genetic Engineering and Biotechnology.