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APPENDICES

APPENDIX A

Molecular structure and physical properties of propylthiouracil (PTU)
(Aboul-Enein, 1997; Reynolds, 1993)

Propylthiouracil (PTU)

1. Molecular structure

1.1 Empirical: $C_7H_{10}N_2OS$

1.2 Structure:

Keto tautomer Enol tautomer

1.3 Molecular weight: 170.23

2. Physical properties

2.1 Melting range: 219-221 °C

2.2 Solubility:

PTU is sparingly soluble in water (1:900 at 20 °C); soluble in 100 parts boiling water, in 60 parts of ethanol; in 60 parts of acetone. Practically insoluble in ether, chloroform, benzene. Freely soluble in aqueous solutions of ammonia and alkali hydroxide. A saturated aqueous solution is neutral or slightly acidic to litmus.

2.3 Ultraviolet spectrum:

PTU in neutral methanol absorbs ultraviolet radiation at 275 nm (a_m 15800) and at 214 nm (a_m 15600). In alkaline medium, it shows 3 maxima at 315.5 nm (a_m 10900), 260 nm(a_m 10700) and at 207.5 nm (a_m 15400).

2.4 Stability:

PTU is a relatively stable compound at room temperature. It is recommended that it should be kept in a well-closed containers protected from light.

APPENDIX B

U-937 (Histiocytic lymphoma, Human)

(American Type Culture Collection, 1999)

U-937 (Histiocytic lymphoma, Human)

Current medium for propagation: RPMI 1640, 90%; fetal bovine serum, 10%.

Additional information: The U-937 was established by C. Sundstrom and K. Nilsson in 1974 from malignant cells obtained from the pleural effusion of a 37-year-old Caucasian male with diffuse histiocytic lymphoma. This is a near triploid human cell line. The U-937 is one of only a few human cell lines still expressing many of the monocyte-like characteristics exhibited by cells of histiocytic origin. The cells bear receptors for Fc and C_3, phagocytose antibody-coated erythrocytes and latex beads, stain strongly with nonspecific enzyme lysozyme. In addition, the cells lack EB virus-related antigens and both surface and intracellular immunoglobulins.

Submitted by: H. Koren, Duke University Medical Center, Durham, NC.

APPENDIX C

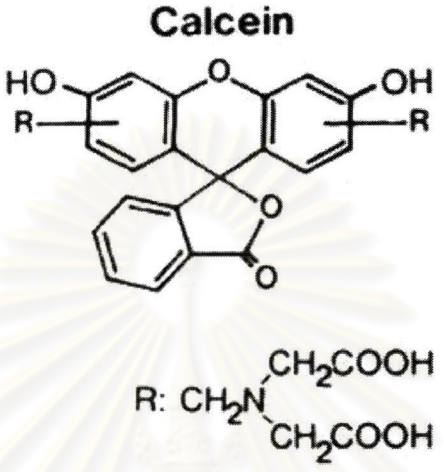
Molecular structure of calcein

(Sigma-Aldrich, 2003)

Calcein (Sigma-Aldrich, 2003; Straubinger et al., 1983)

Empirical: $C_{30}H_{26}N_2O_{13}$

Structure: bis[N,N'-di(carboxymethyl)-aminomethyl]



(From Straubinger et al., 1983)

Molecular weight: 622.5

Solubility: Clear orange to brown solution at 50 mg/ml in 1 M sodium hydroxide

Storage temperature: Store at room temperature

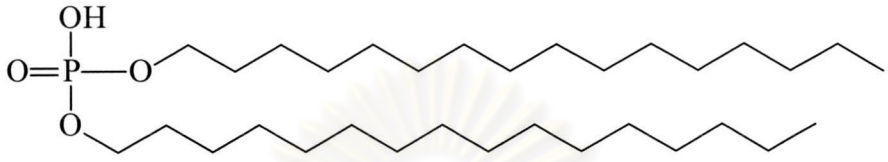
APPENDIX D

Molecular structures of lipids; PC, DCP, PS, PG, and CH
(Sigma-Aldrich, 2003; Graham and Higgins, 1997; New, 1997)

Dicetylphosphate (DCP, Dihexadecyl phosphate)

Empirical: $C_{32}H_{67}O_4P$

Structure: $[CH_3(CH_2)_{15}O]_2P(O)OH$



Molecular weight: 546.9

Melting point: 74-75°C