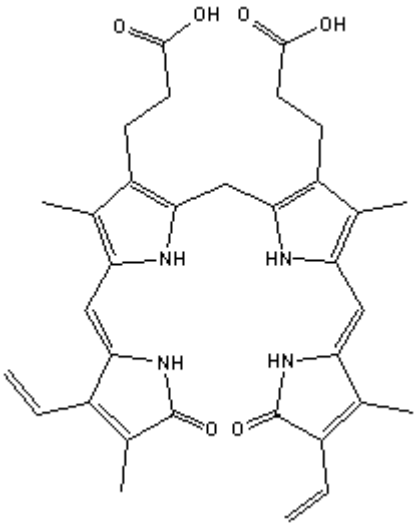
Catalog Number: 199474

Bilirubin

Structure:



Molecular Formula: $C_{33}H_{36}N_4O_6$

Formula Weight: 584.65

CAS # : 635-65-4

Physical Appearance: Light orange-yellow to reddish powder

Description: Shall be a red or red-orange crystalline bilirubin powder suitable for use in the preparation of standard stock solutions of bilirubin for color density comparison in the determination of serum bilirubin.

Coefficient of Extinction: Weigh accurately 50.0 mg of bilirubin and transfer to a 500 ml volumetric flask with small portions of reagent grade chloroform. Add to the flask sufficient chloroform to make the flask about 3/4 full. Add several glass beads and place flask on a steam bath. Allow to boil until complete solution is achieved. Do not boil for more than 2 hours. Remove from the steam bath and allow to cool to room temperature. Dilute to mark with chloroform and mix thoroughly. Withdraw 1 ml of this solution and transfer to a 25 ml volumetric flask. Dilute to mark with chloroform and mix well. Immediately read the density of this solution at 454 mu against a blank of chloroform in a 1 cm cell.

Calculations:

$$E^{1\%}_{1\ cm} = \frac{\text{optical density}}{\text{g/100 ml x cell path 0.0004}} = \text{optical density}$$

Should not be less than 1.02×10^3.

Solubility: Soluble in chloroform (10 mg/ 100 ml-clear, to hazy yellow to orange solution), when solution is prepared as described under Coefficient of Extinction, in benzene, chlorobenzene, carbon disulfied, acids, alkalis; slightly soluble in alcohol ether; practically insoluble in water

Identification: A small amount is dissolved in chloroform. To this is added 1 ml of a mixture consisting of 50 ml of nitric acid, 500 ml of water, saturated with sulfanilic acid, and to which a few granules of sodium nitrate has been added, and 1 ml of concentrated hydrochloric acid. The aqueous portion becomes pink, then changes to blue. Chloroform phase first turns green, then violet.

Preparation: Bilirubin is produced from Ox-gall which is sterilized before extraction with high pressure vapour at 120^{o}C. Then the bilirubin is extracted in a continuous extraction process with chloroform as a crude product. Recrystallization and purification is with ethanol and chloroform.

Availability:

Catalog#	Description	Size
199474	Source: Porcine gall bladder Purity: 99%	250 mg 500 mg 1 g 5 g

References:

1. Merck Index, 11th Ed., No 1235
2. Fischer, Plieninger, Naturwiss, v. 30, 382 (1942)
3. D. Kaplan, G. Navon, J. Chem. Soc. Perkin Trans. II, 1374 (1981)
4. J.S. Weiss, et. al.,N. Engl. J. Med., v. 309, 148 (1983)