

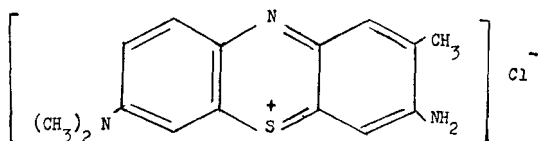
NOTES

## Labelling of Toluidine Blue with Radioactive Iodine (Radioactive Toluidine Blue — RTB)

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Toluidine Blue (Tolonium chloride; Blutene chloride; 3-amino-7-dimethylamino-2-methylphenazathionium chloride; Dimethyltoluthionine chloride; Schulz-1041; Cl-925; Tolazul) is used as a histological dye in a 0.1-1.0 % aqueous solution (Nissl's method for nerve cell bodies; metachromatic staining of mucoid substance). It was used to reduce bleeding tendency in certain hemorrhagic conditions, associated with excess of heparinoid substances in the blood, or as a precipitating agent for heparin, in the case of overdosage <sup>(1)</sup>. Finally it has been used in the last years for pancreas and parathyroid *in vivo* staining in dog experiments <sup>(2)</sup> and for parathyroid localization in surgery <sup>(3)</sup>.



Since radioisotope scanning of the parathyroid with Selenomethionine-<sup>75</sup>Se has been found unsatisfactory <sup>(4)</sup>, it was suggested to label the Toluidine Blue <sup>(5, 6)</sup>, which would be used for pancreas and parathyroid radioisotope studies.

We wish to propose a method for radioiodine labelling of Toluidine Blue. It seems to be simple, safe and promising a good yield.

### METHOD.

1. 20 mg of Toluidine Blue (G.T. Gurr Ltd., London, England) is dissolved in 1 ml distilled water in a penicillin type glass bottle.
2. Preparation of a potassium iodine/potassium iodate solution : 465 mg

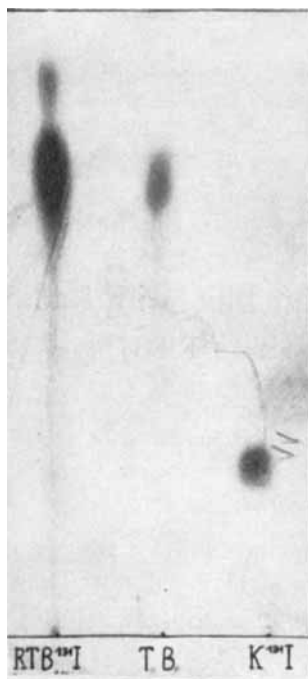


FIG. 1. Radiochromatography of Radioactive Toluidine Blue (Solvent used = n-butanol : ac. acid glacial : water) RTB<sup>131</sup>I = radioiodinated toluidine blue; TB — cold toluidine blue; K<sup>131</sup>I — radioactive potassium iodide).

KI + 307 mg KIO<sub>3</sub> in 100 ml water. 0.5 ml of this solution and about 5 mC of radioactive iodine are added to the Toluidine-Blue solution.

3. The bottle is closed, one drop of concentrated HCl is added by a syringe and the mixture is incubated overnight at room temperature.
4. The labelled Toluidine Blue is then passed through Dowex 1-X8, 50-100 mesh, anion exchanger. The solution of Radioactive Toluidine Blue (RTB) is sterilised by Millipore filter. The final yield is from 60 to 70 percent.

#### ASSAYS.

The purity of RTB was checked by radiochromatography. The solvent used was n-butanol : glacial acetic acid : water (60 : 15 : 25) and the R<sub>f</sub> of T.B. = 0.75 (Fig. 1). From 0.5 to 1 % of free radioiodine was found in several batches. The RTB solution was checked for sterility, if parenteral use was planned. The RTB thus obtained is ready for experimental and clinical use.

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