

## PREPARATION AND EVALUATION OF F-OCTYLBROMIDE EMULSIONS FOR CONTRAST AGENTS AND SYNTHETIC OXYGEN CARRIER

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Stable emulsions containing 100% w/v of F-octylbromide (PFOB) have been prepared with egg yolk lecithins as emulsifying agents. These emulsions have been tested as contrast enhancement agents for X-ray, ultrasound and magnetic resonance imaging. The minimum effective diagnostic dose for CAT scans is about 0.25 g/kg in rats; the LD<sub>50</sub> dose is about 45 g/kg in mice.

A survival ratio of 19:24 was obtained in rats, following exchange transfusions to 3% red cell hematocrit. The conscious rats showed normal behavior breathing 60% O<sub>2</sub> during the exchange transfusion using equal volumes of 100% PFOB emulsion and 2% human serum albumin, adjusted to pH 7.4 and 300 mOsm (final emulsions contained 50 w/v% of PFOB); the O<sub>2</sub>-content of the inspired atmosphere was stepwisely brought back to normal in 4 days. The albumin or gelatin and saline-perfused controls survived only a few hours even when breathing 95% O<sub>2</sub>.

Examples will be presented of standard radiography of the gastrointestinal tract obtained after a patient had drunk neat PFOB, as well as of CAT detection of tumors in the liver of rabbits which had received a PFOB emulsion intravenously.

The 100% w/v PFOB emulsions were manufactured in large batches using Good Manufacturing Practices and pure raw materials available at reasonable costs.

PFOB emulsions have low toxicity, and efficacy in multiple applications, and can be prepared by methods that are industrially feasible. Thus, PFOB is expected to achieve clinical and commercial success as a contrast enhancement agent as well as a synthetic oxygen carrier.