INTRODUCTION
Breast cancer is the most common cancer among women and the second leading cause of disease deaths. Tamoxifen (TMX) is the drug of first election in premenopausal patients with estrogen receptor (+) (1). It shows poor water solubility and vulnerability to enzymatic degradation in intestine and liver (2). Its oral bioavailability is affected by the first pass effect (3). The objective of the work was to optimize and characterize a microemulsion containing TMX that could present a high solubilization capacity and a low in vitro toxicity profile.

MATERIALS AND METHODS
Screening of the microemulsion region was performed using the titration method at 37°C (4). Polisorbate 80 and other pharmaceutically acceptable excipients were chosen; compositions were then represented in Pseudo Ternary Diagrams. To determine the equilibrium solubility of the drug in formulations, excess of drug was added to the formulations, they were left to equilibrate for 72 hs, filtered and finally analyzed by HPLC (Shimadzu, Japan). Droplet size was evaluated using a Nanozetasizer, Malvern Instruments, UK (37°C). Citotoxicity evaluation of the microemulsions and excipients were carried out using MCF-7 breast cancer cell line. The selected compositions diluted with culture media were incubated 48 hs and finally viable cells were determined using CellTiter 96® Non-Radioactive Cell Proliferation Assay (MTS).

RESULTS
Considering solubility and citotoxicity assays, phosphatidylcholine was selected as oil phase and ethanol and polyethylene glycol as cosurfactants. During the screening, only formulations containing ethanol were able to form microemulsions at the desired excipients levels. Finally, 5 different compositions were selected for physicochemical characterization. Solubility studies showed an improvement of drug solubilization of 10000 fold compared with water. Polisorbate 80 was the excipient with the highest rate of toxicity but the dilutions used were the usual ones.

DISCUSSIONS/CONCLUSIONS
Microemulsions are thermodynamically stable dosage forms, widely accepted that can improve oral bioavailability or can achieve the desired dose at the tumor site for a longer period. The formulations prepared and characterized in this work showed a high solubilization capacity and a low toxicity profile, allowing different anti cancer strategies to be challenged in vitro.

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