

CHEMICAL DEGRADATION OF METHOXSALEN AFTER ACID AND ALKALINE HYDROLYSIS

OHP-018

*Fernández Ferreiro A, Cores Esperon, A, Esteban Cartelle H, González Barcia M, Lamas Díaz MJ.
Servicio de Farmacia. Complejo Hospitalario Universitario de Santiago de Compostela. Spain.*

BACKGROUND

Photochemotherapy is an effective therapy for psoriasis. The photosensitizer methoxsalen can be applied either orally or topically. When applied topically, the patient is immersed in a bath containing 0,0001% methoxsalen in warm water for 20min, followed by UVA irradiation (PUVA bath (PUVAb)).

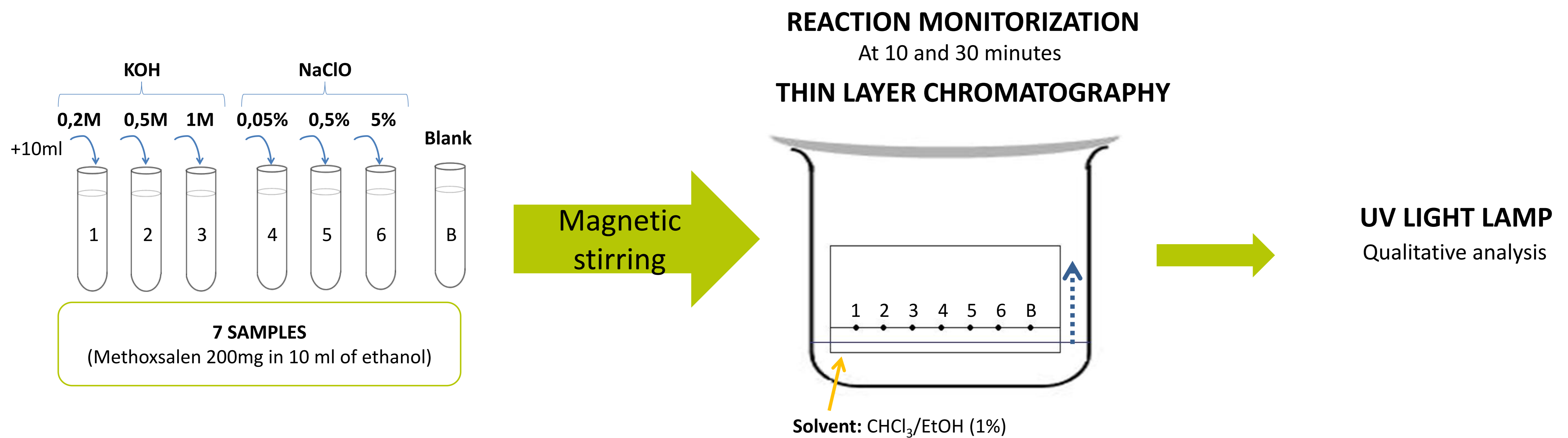
Methoxsalen is very toxic and has carcinogenic effects when it is swallowed or gets in contact with mucosa. It must be manipulated with caution.

PURPOSE

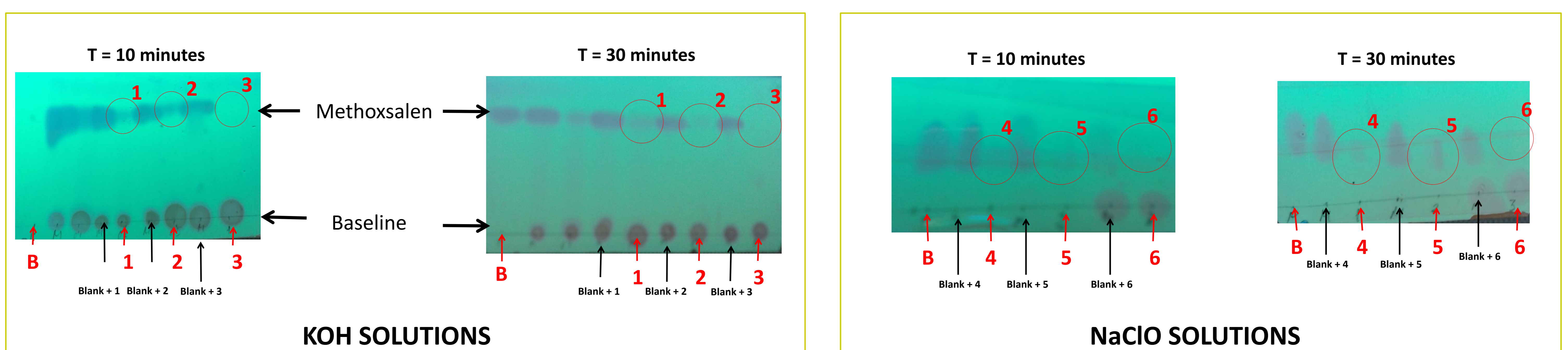
Find an effective and simple method for chemical deactivation of methoxsalen, which could be used in the clinical setting after PUVAb.

MATERIALS AND METHODS

MATERIALS: Methoxsalen powder, KOH, Ethanol, NaClO, CHCl_3



RESULTS



Blank shows that methoxsalen is completely eluted by the mobile phase. In the six samples, we observed that a part of the mixture is eluted (methoxsalen), while other compounds are retained in the stationary phase. These may be polar degradation products. The more concentrated the reactives, the smaller the quantity of methoxsalen remaining. The most extensive hydrolysis is seen in the mixture with KOH 1M.

CONCLUSIONS

- Both KOH and HClO hydrolyze methoxsalen. The most efficient reactive was KOH 1M, which hydrolyzed almost the whole sample.
- These results suggest that KOH 1M may be useful to deactivate methoxsalen after PUVAb, although further studies are necessary to characterize degradation products and evaluate their toxicity.