

البحث رقم (٣) : بحث فردي – منشور – غير مستخلص من رساله علمية

TLC Bioautographic method for Detecting Lipase Inhibitors

عنوان البحث

الكشف عن مثبطات إنزيم الليبيز في المستخلصات النباتية بواسطة طريقة تثبيط الإنزيم على ألواح كروماتوجرافيا الطبقة الرقيقة.

ABSTRACT

Introduction – Bioautographic assays using TLC play an important role in the search for active compounds from plants. A TLC bioautographic assay has previously been established for the detection of acetylcholinesterase inhibitors but not for lipases.

Objective – Development of a TLC bioautographic method for detecting lipase inhibitors in plant extracts.

Methodology – After migration of the plant extracts, the TLC plate was sprayed with α -naphthyl acetate and enzyme solutions before incubation at 37°C for 20 min. Finally, the solution of Fast Blue B salt was sprayed onto the TLC plate giving a purple background colouration.

Results – Lipase inhibitors were visualised as white spots on the TLC plates. Orlistat (a known lipase inhibitor) inhibited lipase down to 0.01 mg. Methanolic extracts of *Camellia sinensis* (L.) kuntz and *Rosmarinus officinalis* L after migration on TLC gave enzymatic inhibition when applied in amounts of 82 and 56mg, respectively. On the other hand the methanolic extract of *Morus alba* leaves did not exhibit any lipase inhibitory activity.

Conclusion – The screening test was able to detect lipase inhibition by pure reference substances and by compounds present in complex matrices, such as plant extracts.