Table 1 Continued

Compounds separated	Stationary phase[a]	Mobile phase[b]	Ref.
Steroids	SG	CH–EA (70:3 or 85:15)	35
	F	H–B (1:1)	36
Steroid glycosides	SG	$MeCl_2$–MeOH–FA (80:15:1)	37
Sterols	SG	H–EA (80:20)	38
	Al	IO–EA (80:20)	38
	$AgNO_3$[c]	$CHCl_3$–AC (95:5)	39
	KC	AN–$CHCl_3$ (40:35)	3
	KC	AN–$CHCl_3$–MAc (55:25:15)	3
Sterols and steryl acetates	Un	HAc–AN (1:3)	40
Triacylglycerols	TD	AC–AN (8:2)	41
	$AgNO_3$[c]	CH–B mixtures	42
	$AgNO_3$[c]	IPA–$CHCl_3$ (1.5:98.5)	42a
Ubiquinones	PO	MeOH–IPa (90:10)	9
Vitamin A isomers	SG	PE–methylheptanone (11:2)	43
Vitamins D_2 and D_3	SG	$CHCl_3$ or H–EA (90:20)	44
Wax esters	SG	CCl_4 or H–E (98:2)	45

[a]Stationary phases: Al, aluminum oxide; BA, boric acid; F, formamide; KC, Whatman KC_{18} reversed-phase plates; PO, paraffin oil; SG, silica gel; SO, silicone oil; TD, tetradecane; Un, undecane.
[b]Mobile phases (all solvents given in volume proportions unless otherwise noted): AC, acetone; AN, acetonitrile; B, benzene; BuAc, butyl acetate: CH, cyclohexane; $ChCl_3$, chloroform; DBK, diisobutyl ketone; DMSO, dimethylsulfoxide; E, ethyl ether, EA, ethyl acetate; EtOH, ethanol; FA, formic acid; H, hexane, HAc, acetic acid; IO, isooctane; IPa, isopropyl alcohol; MAc, methyl acetate; $MeCl_2$, methylene chloride; MEK, methyl ethyl ketone; MeOH, methanol; PE, petroleum ether; THF, tetrahydrofuran.
[c]Impregnating agent used on silica gel.

the medically important planorbid snail, *Biomphalaria glabrata*, depleted mainly triacylglycerols and free fatty acids during starvation. Fried and Sherma (52a) reviewed TLC methods used to analyze lipids in gastropod molluscs. Fried et al. (52b) used TLC and transmission electron microscopy to show that lipid storage and accumulation occurred in the digestive gland cells of this snail. TLC was used extensively to study the effects of a high fat diet on the lipid composition of *Biomphalaria glabrata* snails (52c). Reed et al. (52d) used TLC and flame ionization detection (FID) to show that neutral lipids, particularly triacylglycerols, play an important role as a fuel source to support the swimming behavior of macroalgal spores of palm kelp in the genus *Pterygophora*.

Lipids are important in the structural integrity of cells and comprise the major components of all membranes (53). Lipids of particular importance in these roles are sterols, phosphoglycerides, glycolipids, and sphingolipids.

Complex lipids in the membranes of neuronal tissues are involved in the transmission of electrical signals; phosphoinositides and their metabolic products play a role in cellular chemical communication. The use of TLC to study phosphoinositide metabolism in resting and stimulated cells has been reviewed (54).

Lipids are important as pheromones, precursors of pheromones, or carriers of pheromones in plants and animals. This topic was reviewed for vertebrates and insects by Shorey (55) and for invertebrates (mainly helminths) other than insects by Haseeb and Fried (56). Lipophilic pheromones or their carriers are mainly glycerides, free fatty acids, and sterols. Insects excrete long-chain alcohols, alkyl acetates, aldehydes, and ketones that serve as intraspecific pheromones (57). Shanas et al. (57a) used TLC to analyze lipids in the Harderian gland of the mole rat. Greater