used HPLTC with densitometry to determine dipalmitoylphosphatidylcholine in amniotic fluid as free dipalmitoylglycerol on silver nitrate–modified silica gel HPTLC plates after enzymatic hydrolysis. Bonte et al. (145) separated stratum corneum lipids by automated multiple development (AMD) on HPTLC silica gel plates using an initial isocratic step followed by a 25-step gradient from methanol–water to hexane. Schuerer et al. (146) used densitometric quantification for the separation and analysis of human stratum corneum lipids by sequential one-dimensional TLC with detection by charring. Watanabe and Mizuta (147) detected glycosphingolipids from biological samples by TLC at the 5 pmol level using 5-hydroxy-1-tetralone as fluorescent labeling reagent. Wiesner and Sweeley (148) characterized a complex mixture of gangliosides from human plasma using two-dimensional TLC, resorcinol detection reagent, and computer-assisted image analysis densitometry.

Davani and Olsson (149) developed an HPTLC method for the detection of natural galactolipids of oats and wheat origin with 8-anolino-1-naphthalenesulfonate (ANS) as a fluorogenic visualization agent and scanning at an excitation wavelength of 375 nm. Arnsmeir and Puller (150) detected gangliosides by TLC and noted that the process was simplified and made more sensitive by the use of chemoluminescence. Touchstone (151) provided a general review of TLC procedures for lipid separation. His review included 128 references on TLC separation of lipids, including sample preparation and TLC studies with examples of applications indicating the capabilities and practicability of TLC analysis for lipids.

Rabinowitz (152) used silica gel TLC to analyze lipids in the saliva of the medicinal leech *Hirudo medicinalis*. The total lipid content of the saliva was about 3 mg of lipids per 100 mL of saliva. Neutral lipids made up about 67% of the lipids, with polar lipids making up the remainder. TLC was used to determine the profiles of polar and nonpolar lipids. The largest percentages of the identified lipids were phosphatidic acids and free fatty acids. This leech contains a unique lipid distribution in its saliva, and some of these components are important constituents in the anticoagulants present in the saliva.

Conaway et al. (153) used HPTLC with densitometry to examine the effects of restricted food intake versus ad libitum feeding on the neutral lipid content of the medically important planorbid snail *Biomphalaria glabrata*. The results of the study indicated that snails on the restricted diet had significant changes in various neutral lipids compared to snails maintained on the ad libitum diet. Rupcic et al. (154) used silica gel TLC to analyze cell lipids of *Candida lipolytica* yeast grown on methanol. The dry cell mass was 5% lipids, 52% of which were polar lipids, mainly phospholipids and sphingolipids. A high content of the sphingolipid 19-phytosphingosine was found (about 91% of the total long-chain bases). Iwamori et al. (155) described a sensitive method to determine the pulmonary surfactant lecithin/sphingomyelin ratio in human amniotic fluid for the diagnosis of respiratory distress syndrome (RDS) by TLC-immunostaining. The method distinguished the surfactant lecithin/sphingomyelin ratios in normal amniotic fluid from women who delivered babies with RDS syndrome.

Xu et al. (156) described two efficient systems to separate phospholipids and lysophospholipids from the hippocampus region of the rat brain. They found that a chloroform–methanol–acetic acid–acetone–water (35:25:4:14:2) mobile phase was suitable for the separation of 10 phospholipids on a silica gel G plate and that a chloroform–methanol–28% aqueous ammonia (65:35:8) mobile phase also gave good separation of the major phospholipids from their lyso forms. Gennaro et al. (157) used HPTLC to determine phospholipids in snail-conditioned water (SCW) from *Helisoma trivolvis* and *Biomphalaria glabrata* snails. SCW contains pheromones that function to attract larval trematodes to the snails and to facilitate intraspecific attraction and mating behavior. In this study, lipids were extracted from the water in chloroform–methanol (2:1), and extracts and standards were applied to silica gel plates developed in chloroform–methanol–water (65:25:4). Lipids were detected by spraying the plates with 10% cupric sulfate in 8% phosphoric acid and heating, and the zones were quantified by scanning densitometry at 370 nm. The major concentrations of phospholipids in SCW were phosphatidylethanolamine and phosphatidylcholine at concentrations ranging from 0.18 to 0.4 μg/mL per snail.

Maloney (158) reviewed studies on TLC in bacteriology and included methods for sample preparation of lipids and TLC protocols for work on bacteria. TLC is used to determine microbial