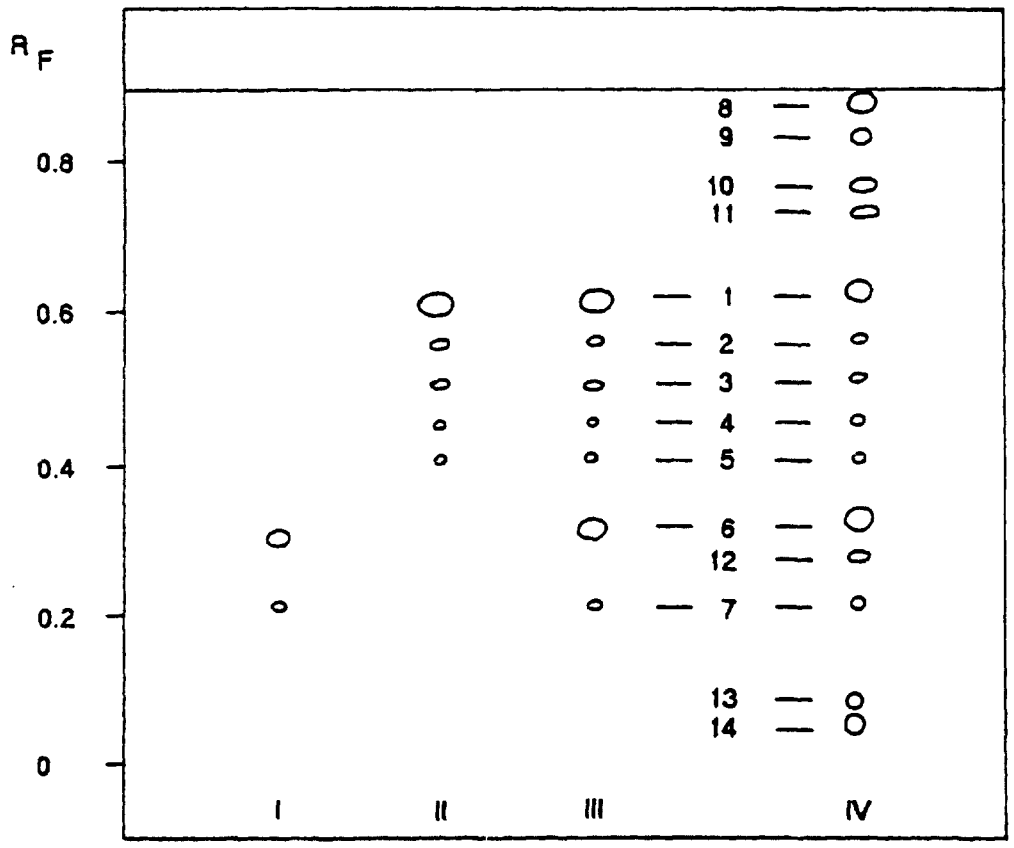

Figure 5 Chromatographic separation of virginiamycins. I, V[M]; II, V[S]; III, mixture of V[M] + V[S]; IV, sample of fermentation broth. *1*, V[S1]; *2*, V[S2]; *3*, V[S3]; *4*, V[S4]; *5*, V[S5]; *6*, V[M1]; *7*, V[M2], and *8–14*, unknown components of fermentation broth. (From Ref. 95.)

the virginiamycins were also done by HPLC. Table 7 lists the TLC and HPLC results obtained for major components of the fermentation broth, virginiamycins VM1 and VS1, in several samples. Comparison of HPTLC and HPLC data showed good correlation ($r = 0.993$).

H. Sulfonamides

Sulfonamide drugs, often called sulfa drugs, are synthetic compounds and were the first chemotherapeutic agents discovered. The first sulfonamide drug, discovered in 1932 by the German doctor Domagk, was a red azo dye, 2,4-diaminobenzene-4′-sulfonamide, called prontosil rubrum. The sulfonamides include sulfanilamide (4-aminobenzenesulfonamide) and numerous compounds closely related to it (derived from substitution in the sulfamide group). Other sulfonamide drugs are probenecid, used in treating gout; acetazolamide and furosemide, which are diuretics; the hypoglycemic tolbutamide; and chlorothiazide and hydrochlorothiazide, which are both diuretic and antihypertension agents. Bacteriostatic sulfonamide drugs are used mainly in the treatment of infections in livestock and, at subtherapeutic doses, to promote the growth of food animals. To a lesser extent they are also used in the treatment of human infections such as bronchitis and urinary tract infections, diabetes, edema, hypertension, and gout. The sulfonamides are toxic, and some patients are hypersensitive to them. The common side effects are nausea, vomiting, mental disturbance, anemia, leukopenia, kidney dysfunction, fever, and skin allergy. Some sulfonamides could be carcinogenic.