

Table 10 TLC of Stereoisomers of AsA and DHAsA on Metaphosphoric Acid-Impregnated Plates (R_f Values $\times 100$)

Compound	Silica				Cellulose			
	D	B	RP	RP-B	D	B	RP	RP-B
L-AsA	31	13	32	15	42	12	43	13
D-AsA	34	13	34	16	40	11	37	12
D-IAsA	37	13	36	17	50	13	43	13
L-DHAsA	62	7	40	9	55	0	41	0
L-DHAsA ^a	62	7	40	9	55	0	41	0
D-DHAsA ^a	60	7	32	9	52	0	39	0
D-Dehydroisoascorbic acid ^a	59	7	24	9	47	0	37	0

^aNorit-treated.

D, direct; B, sodium borate; RP, reversed-phase; RP-B, reversed-phase sodium borate. Solvent: Acetonitrile–acetone–water–acetic acid (80:5:15:2). R_f values are the means of three determinations. The coefficient of variation is 5%.

Source: Ref. 43.

acid (R_f value 0.53), 254 nm for paracetamol (R_f value 0.87), and 274 nm for phenylephrine (R_f value 0.22) and caffeine (R_f value 0.69).

Ascorbic acid and dipyrone (metamizole) are sometimes combined in pharmaceutical dosage forms to relieve pain and fever. Simultaneous determination of ascorbic acid and dipyrone by silica gel 60 TLC was achieved by using water–methanol (95:5) as the developing system (45). The developed plates were scanned directly at 260 nm. The R_f values for ascorbic acid and dipyrone were 0.96 and 0.65, respectively.

REFERENCES

1. Z.Z. Ziporin and P.P. Waring. *Methods Enzymol.* 18A:86–87, 1970.
2. W. Funk and P. Derr. *J. Planar Chromatogr.-Mod. TLC* 3:149–152, 1990.
3. B. Bauer-Petrovska and L. Petrushevska-Tozi. *Int. J. Food Sci. Technol.* 35:201–205, 2000.
4. R. Bhushan and V. Parshad. *J. Liq. Chromatogr. Related Technol.* 22:1607–1623, 1999.
5. J. Zempleni, J.R. Galloway, and D.B. McCormick. *Int. J. Vit. Nutr. Res.* 66:151–157, 1996.
6. A. Gliszczynska and A. Koziolowa. *J. Chromatogr. A* 822:59–66, 1998.
7. A. Gliszczynska-Swiglo and A. Koziolowa. *J. Chromatogr. A* 881:285–297, 2000.
8. A. Gliszczynska and A. Koziolowa. *J. Agric. Food Chem.* 47:3197–3201, 1999.
9. C. Granzow, M. Kopun, and T. Krober. *Cancer Res.* 55:4837–4843, 1995.
10. H. Ahrens and W. Korytnyk. *Anal. Biochem.* 30:413–420, 1969.
11. S.P. Coburn and J.D. Mahuren. *J. Biol. Chem.* 262:2642–2644, 1987.
12. M. Tazoe, K. Ichikawa, and T. Hoshino. *J. Biol. Chem.* 275:11300–11305, 2000.
13. L. Atkin, A.A. Schults, W.L. Williams, and C.N. Frey. *Ind. Eng. Chem. Anal. Ed.* 15:141–144, 1943.
14. V. Herbert. In: L.J. Filer and E. Ziegler, eds. *Present Knowledge in Nutrition*. 7th ed., Washington, DC: Int. Life Sci. Inst. Press, 1996, pp. 191–205.
15. P.C. Dagnelie, W.A. van Staveren, and H. van den Berg. *Am. J. Clin. Nutr.* 53:695–697, 1991.
16. F. Watanabe, S. Takenaka, H. Katsura, S.A.M.Z.H. Mazumder, K. Abe, Y. Tamura, and Y. Nakano. *J. Agric. Food Chem.* 47:2341–2343, 1999.
17. F. Watanabe, S. Takenaka, H. Katsura, E. Miyamoto, K. Abe, Y. Tamura, T. Nakatsuka, and Y. Nakano. *Biosci. Biotechnol. Biochem.* 64:2712–2715, 2000.
18. F. Watanabe, H. Katsura, E. Miyamoto, S. Takenaka, K. Abe, Y. Yamasaki, and Y. Nakano. *Appl. Biol. Sci.* 5:99–107, 1999.
19. F. Watanabe, K. Abe, H. Katsura, S. Takenaka, Y. Tamura, and Y. Nakano. *Appl. Biol. Sci.* 4:17–20, 1998.