TABLE 145

PC R_F VALUES OF ARABINOSE AND RIBOSE DERIVATIVES

(R. J. FERRIER, W. G. OVEREND, G. A. RAFFERTY, H. M. WALL AND N. R. WILLIAMS, *J. Chem. Soc. C*, (1968) 1092)

Paper: Whatman No. 1.
Solvents: S_1 = *n*-Butanol–ethanol–water (4:1:5).
S_2 = Phenylboronic acid (5 g) in solvent S_1 (100 ml) additioned with ethanol (*ca.* 2.5 ml).
Detection: (i) Silver nitrate–sodium hydroxide; (ii) aniline hydrogen phthalate; (iii) hydroxylamine–ferric chloride; (iv) BRITTON's method (*Biochem. J.*, 73 (1959) 19P).

Compound	R_F	
	S_1	S_2
L-Arabinose	0.18	0.13
D-Ribose	0.27	0.54
2-C-Methyl-L-arabinose	0.37	0.34
2-C-Methyl-L-ribose	0.39	0.71
Methyl β-L-arabinopyranoside	0.40	0.31
Methyl β-D-ribopyranoside	0.55	0.86
Methyl 2-C-methyl-β-L-arabinopyranoside	0.58	0.52
Methyl 2-C-methyl-β-L-ribopyranoside	0.74	0.92

TABLE 146

PAPER ELECTROPHORETIC MOBILITIES OF ARABINOSE AND RIBOSE DERIVATIVES

(R. J. FERRIER, W. G. OVEREND, G. A. RAFFERTY, H. M. WALL AND N. R. WILLIAMS, *J. Chem. Soc. C*, (1968) 1092)

Paper: Whatman No. 3.
Buffer: B_1 = Borate, pH 9.2.
B_2 = Sodium molybdate dihydrate (25 g) in water (1200 ml), pH 5.0.
Detection: Silver nitrate–sodium hydroxide.

Compound	M^*	
	B_1	B_2
L-Arabinose	0.91	0.15
D-Ribose	0.72	0.48
2-C-Methyl-L-arabinose	0.85	0.15
2-C-Methyl-L-ribose	0.70	0.61
Methyl β-L-arabinopyranoside	0.29	<0.1
Methyl β-D-ribopyranoside	0.44	<0.1
Methyl 2-C-methyl-β-L-arabinopyranoside	0.23	<0.1
Methyl 2-C-methyl-β-L-ribopyranoside	0.30	<0.1

* Rate of migration relative to D-glucose (for B_1) or to sorbitol (for B_2), corrected for electro-endoosmotic flow.

TABLE 147

TLC R_F VALUES OF POLYNUCLEAR PHENOLS

(E. SAWICKI, M. GUYER, R. SCHUMACHER, W. C. ELBERT AND C. R. ENGEL, *Mikrochim. Acta*, (1968) 1027)

Thin layers: TL_1 = Silica gel, Analtech.
TL_2 = Silica gel, Analtech, saturated with 0.3 *M* sodium acetate.
TL_3 = Polyamide.

Solvents: S_1 = Triethylamine.
S_2 = Toluene–ethyl formate–formic acid (5:4:1).
S_3 = Water–alcohol–2-butanone–acetylacetone (65:15:15:5).

Detection: D_1 = *p*-Nitrobenzenediazonium fluoroborate.
D_2 = 3-Methyl-2-benzothiazolinone hydrazone hydrochloride, 0.5 % in water. After spraying and drying with hair dryer spray with 1 % aqueous potassium ferricyanide and dry again.
D_3 = *o*-Phthalaldehyde, 1 % in sulfuric acid.
D_4 = Tetrazotized benzidine.
D_5 = Diazotized sulfanilic acid.

Compound	R_F		
	TL_1S_1	TL_2S_2	TL_3S_3
Acacetin (methoxyflavone)	0.0	0.55	0.0
1-Anthrol	0.68	0.91	0.0
Apigenin	0.0	0.47	0.0
Astragalin	0.0	0.30	0.11
D-Catechin		0.08	0.28
Chrysin	0.0	0.61	0.0
1,4-Dihydroxyanthraquinone	0.04	0.90	0.0
6,11-Dihydroxynaphthacenequinone	0.0	0.93	0.0
Ellagic acid	0.0	0.13	0.0
Esculin	0.0	0.0	0.65
Fisetin	0.0		
Flavanone	0.0	0.54	0.0
1-Hydroxyanthraquinone	0.12	0.90	0.0
4-Hydroxyxanthrone	0.28	0.59	0.0
4-Hydroxybenzylideneacetophenone		0.63	
2-Hydroxycarbazole	0.30	0.49	0.0
6-Hydroxychrysene	0.53	0.90	0.0
4-Hydroxycoumarin		0.0	0.0
7-Hydroxycoumarin	0.0	0.43	0.14
2-Hydroxydibenzofuran	0.60	0.83	0.0
o-Hydroxydiphenyl	0.83	0.93	0.0
p-Hydroxydiphenyl	0.73	0.83	0.0
3-Hydroxyflavone	0.17	0.87	0.0
2-Hydroxyfluorene	0.71	0.87	0.0
3-Hydroxyfluorene	0.75	0.86	0.0
5-Hydroxyisoquinoline	0.19	0.09	0.81
7-Hydroxy-4-methylcoumarin	0.0	0.39	0.10
1-Hydroxypyrene	0.48	0.89	0.0
5-Hydroxyquinoline	0.30	0.08	0.85
4-Hydroxyquinoline	0.0	0.0	0.65
8-Hydroxyquinoline	0.03	0.10	0.81
Malvin	0.0	0.0	0.90
4′-Methoxy-3′,5,7-trihydroxyflavanone	0.0	0.57	0.05
3-Methylchromone	0.0	0.0	0.64
4-Methyldaphnetine		0.29	0.17
Morin		0.16	0.0
Myricetin	0.0	0.12	0.0
9-Naphthacenone	0.82	0.94	0.0
1-Naphthol	0.80	0.90	0.0
2-Naphthol	0.74	0.89	0.0
2-Quinolinol		0.53	
Robinin	0.0	0.0	
Rutin	0.0	0.47	0.23
Techtochrysin	0.03	0.80	
4′,5,7-Trihydroxyflavanone	0.0	0.58	

TABLE 148

ELECTROPHORETIC MOBILITIES OF SOME PHENOLIC COMPOUNDS

(E. SAWICKI, M. GUYER, R. SCHUMACHER, W. C. ELBERT AND C. R. ENGEL, *Mikrochim. Acta*, (1968) 1030)

Paper: Whatman No. 1.
Electrolyte: 0.1 *N* aqueous sodium hydroxide solution.
Potential: 500 V, 25 mA.
Time: 60 min.
Detection: D_1 = Tetrazotized benzidine.
D_2 = Diazotized sulfanilic acid.

Compound	*Mobility*[a]
Acacetin	0.41
1-Anthrol	0.66
Apigenin	0.56
Astragalin	0.92
Chrysin	0.39
1,2-Dihydroxyanthraquinone	tailing
1,4-Dihydroxyanthraquinone	tailing
6,11-Dihydroxynaphthacenequinone	tailing
Esculin	1.13
1-Hydroxyanthraquinone	0.59
4-Hydroxyxanthone	0.64
2-Hydroxycarbazole	0.72
6-Hydroxychrysene	0.20
2-Hydroxydibenzofuran	0.80
o-Hydroxydiphenyl	0.96
p-Hydroxydiphenyl	0.90
2-Hydroxyfluorene	0.70
3-Hydroxyfluorene	0.81
5-Hydroxyisoquinoline	0.93
7-Hydroxy-4-methylcoumarin	0.98
1-Hydroxypyrene	0.44
5-Hydroxyquinoline	0.93
8-Hydroxyquinoline	0.91
Malvinon	1.06
Morin	0.75
1-Naphthol	1.00
2-Naphthol	0.97
Robinin	0.82
Techtochrysin	origin

[a] Mobility relative to 1-naphthol.

TABLE 149

PC R_F VALUES OF METHYL PHENYL POLYSILOXANES

(J. FRANC AND J. CEEOVÁ, *Collection Czech. Chem. Commun.*, 33 (1968) 1572)

Paper: Whatman No. 1.

Impregnation: I_1 = 5% Solution of Apiezon L (Carlo Erba) in toluene.
I_2 = 5% Solution of Silicone elastomer (VChZ-Kolín) in toluene.

Solvent: Water–dimethylformamide (1:8).

Detection: The dried chromatograms were drawn through fuming nitric acid (98%). Immediately after this treatment the chromatograms were immersed into distilled water and after drying they were ironed with a gently warmed flat iron. While still moist they were placed between two glass plates and suitably compressed by weights.

Siloxane	R_F	
	I_1	I_2
$[(CH_3)_2(C_6H_5)Si]_2O$	0.71	0.77
$[(CH_3)_2SiO]_2OSi(C_6H_5)_2$	0.80	0.84
$[(CH_3)_2SiO]_3OSi(CH_3)(C_6H_5)$	0.17	0.14
$[(CH_3)_3SiO]_2Si(C_6H_5)_2$	0.49	0.52
$[(CH_3)_3SiO]_2Si(CH_3)(C_6H_5)OSi(CH_3)_2$	0.17	0.13
$(C_6H_5)(CH_3)_2SiOSi(C_6H_5)_2Cl$	0.82	0.88
cis-$[(CH_3)(C_6H_5)SiO]_3$	0.88	0.91
trans-$[(CH_3)(C_6H_5)SiO]_3$	0.97	0.92
$[(CH_3)(C_6H_5)_2Si]_2O$	0.93	0.94
$[(CH_3)_2SiO]_3[(C_6H_5)_2SiO]$	0.43	0.29
$[(CH_3)_2SiO]_2[(CH_3)(C_6H_5)SiO]_2$	0.63	0.57
$(CH_3)_3SiOSi(C_6H_5)_2OSi(CH_3)_2OSi(CH_3)_3$	0.36	0.23
$[(CH_3)_3SiOSi(CH_3)(C_6H_5)]_2O$	0.39	0.33
$[(C_6H_5)_2(OC_2H_5)Si]_2O$	0.76	0.92
$[(CH_3)_3SiOSi(C_6H_5)(CH_3)]_2OSi(CH_3)_2$	0.25	0.17
$[(CH_3)(C_6H_5)SiO]_4$	0.80	0.85
$[(CH_3)_3SiOSi(C_6H_5)_2]_2O$	0.75	0.70
$(CH_3)_3SiO[Si(CH_3)(C_6H_5)O]_3Si(CH_3)_3$	0.36	0.28
$[(CH_3)_3SiOSi(CH_3)(C_6H_5)OSi(CH_3)(C_6H_5)]_2O$	0.41	0.29
$[(CH_3)_3SiOSi(CH_3)(C_6H_5)OSi(CH_3)(C_6H_5)]_2OSi(CH_3)(C_6H_5)$	0.49	0.33

TABLE 150

TLC R_F VALUES OF SOME SUBSTITUTED 2-HYDROXYBENZOPHENONES
(W.-J. UHDE AND G. ZYDEK, *Z. Anal. Chem.*, 239 (1968) 25)

Thin layer: Silica Gel G.
Solvent: Cyclohexane–ethyl acetate (80:20).
Detection: D_1 = U.V. light 365 nm.
D_2 = 2% solution of Fast Red Salt AL in water. After spraying the chromatograms are heated to 100°.
D_3 = 5% solution of ferric chloride, 5% solution of potassium ferricyanate, 1 *N* hydrochloric acid. After spraying the chromatograms are heated to 100°.

Compound	R_F
2,4-Dihydroxybenzophenone	0.21
2,2'-Dihydroxy-4-methoxybenzophenone	0.44
2-Hydroxy-4-methoxybenzophenone	0.56
2-Hydroxy-4-octyloxybenzophenone	0.83

TABLE 151

TLC R_F VALUES OF SOME DRUGS
(K. GENEST AND D. W. HUGHES, *Analyst*, 93 (1968) 487)

Thin layers: TL_1 = Silica Gel G.
TL_2 = Alumina G.
Solvents: S_1 = Methyl ethyl ketone–dimethylformamide–ammonia (13:1.9:0.1).
S_2 = Methanol–chloroform (1:1).
S_3 = Chloroform–methanol–acetic acid (75:20:5).
Detection: The dried plates are sprayed lightly with a 10% aqueous solution of sodium acetate and then immediately with 1% ethanolic solution of 2,6-dibromo-*p*-benzoquinone-4-chlorimine.

Compound	R_F			
	TL_1S_1	TL_2S_2	TL_1S_3	*Colour*
Amphetamine	0.58	0.40	0.21	violet
Metamphetamine	0.14	0.74	0.33	yellow
4-Methyl-2,5-dimethoxy-α-methyl-phenethylamine	0.54	0.48	0.33	yellow
Mescaline	0.49	0.24	0.20	yellow
N,N-Dimethyltryptamine	0.35	0.93	0.10	orange brown
Bufotenine	0.15	0.84	0.05	dark grey

TABLE 152

PC R_F VALUES AND ELECTROPHORETIC MOBILITIES OF SOME ANALOGUES OF NUCLEIC ACID COMPONENTS

(J. BERÁNEK AND F. ŠORM, *Collection Czech. Chem. Commun.*, 33 (1968) 916)

Paper chromatography

Paper: Whatman No. 1.

Solvents: S_1 = Butanol–water (86:14).
S_2 = Butanol–ethanol–water (40:11:19).
S_3 = Butanol–acetic acid–water (5:2:3).

Detection: D_1 = U.V. light (Chromatolite).
D_2 = Potassium periodate–benzidine (for free *cis*-diols).

Paper electrophoresis

Paper: Whatman No. 1.

Electrolytes: E_1 = Borate buffer, pH 6.
E_2 = 0.05 *M* $Na_2B_4O_7$, pH 9.
E_3 = 0.02 *M* Na_2HPO_4, pH 7.4.

Detection: As above.

Compound	R_F			*Mobilities (cm)*		
	S_1	S_2	S_3	E_1 *1500 V 2 h*	E_2 *1000 V 1 h*	E_3 *1500 V 1 h*
6-Azauridine	0.12	0.28	0.49	9.6	11.3	11.0
2,2′-Anhydro-1-(β-D-arabinofuranosyl)-6-azauracil	0.21	0.40	0.56	−2.2	− 1.6	− 2.0
1-β-D-Arabinofuranosyl-6-azaisocytosine	0.07	0.25	0.45	−2.2	− 1.5	− 3.0
1-β-D Arabinofuranosyl-6-azauracil	0.12	0.28	0.49	3.2	7.0	11.0
1-(2′,3′,5′-Tri-O-acetyl-β-D-arabinofuranosyl)-6-azauracil	0.56	0.81	—	—	—	—
6-Azacytidine	0.06	0.24	0.45	7.6	4.3	− 2.6
1-β-D-Arabinofuranosyl-6-azacytosine	0.06	0.22	0.42	−2.2	− 1.7	− 2.0
6-Azauracil	0.39	0.51	0.62	—	—	—
Uridine	0.14	0.34	0.50	—	7.0	—
2,2′-Anhydro-1-(β-D-arabinofuranosyl)-uracil	0.14	0.32	0.54	—	− 1.6	—
1-β-D-Arabinofuranosyluracil	0.20	0.42	0.54	—	2.3	—
1-β-D-Arabinofuranosylisocytosine	0.07	0.27	—	—	—	—

TABLE 153

PC R_F VALUES OF SOME ANALOGUES OF NUCLEIC ACID COMPONENTS
(J. WIECZORKOWSKI, F. ŠORM AND J. BERÁNEK, *Collection Czech. Chem. Commun.*, 33 (1968) 927)

Papers: P_1 = Whatman No. 1.
P_2 = Whatman No. 40, impregnated with a 20 % methanolic solution of formamide.
Solvents: S_1 = *n*-Butanol–water (86:14).
S_2 = *n*-Butanol–ethanol–water (40:11:19).
S_3 = Ethanol–1 *M* ammonium acetate (15:6).
S_4 = 2-Propanol–25 % aqueous ammonia–water (7:1:2).
S_5 = Chloroform.
S_6 = Benzene.
Detection: D_1 = U.V. light (Chromatolite).
D_2 = Potassium periodate–benzidine reagent for *cis*-diols.

Compound	R_F					
	P_1S_1	P_1S_2	P_1S_3	P_1S_4	P_2S_5	P_2S_6
6-Azauridine	0.13	0.25	0.77	0.59		
6-Azacytidine	0.10	0.14	0.73	0.63		
2′,3′-Di-O-tosyl-5′-O-acetyl-6-azauridine	0.90	0.88				
1-(2′,3′-Epoxy-β-D-lyxofuranosyl)-6-azaisocytosine	0.20	0.24	0.75	0.71		
2,2′-Anhydro-1-(5′-O-trityl-β-D-arabinofuranosyl)-6-azauracil					0.89	0.45
2,2′-Anhydro-1-(5′-O-trityl-3′-O-mesyl-β-D-arabinofuranosyl)-6-azauracil					0.97	0.86
2,2′-Anhydro-(3′-O-mesyl-β-D-arabinofuranosyl)-6-azauracil	0.35	0.45	0.84	0.66	0.04	0

TABLE 154

ELECTROPHORETIC MOBILITIES OF SOME NUCLEIC ACID COMPONENTS
(J. WIECZORKOWSKI, F. ŠORM AND J. BERÁNEK, *Collection Czech. Chem. Commun.*, 33 (1968) 927)

Paper: Whatman No. 1
Electrolytes: E_1 = Phosphate buffer 0.02 *M* Na_2HPO_4, pH 7.4.
E_2 = Borate buffer, pH 6.07.
Potential: 1500 V.
Time: T_1 = 60 min.
T_2 = 120 min.
Detection: D_1 = U.V. light (Chromatolite).
D_2 = Potassium periodate–benzidine reagent for *cis*-diols.

Compound	*Mobilities (cm)*	
	E_1T_1	E_2T_2
6-Azauridine	7.7	11.0
6-Azacytidine	−2.9	8.3
1-(2′,3′-Epoxy-β-D-lyxofuranosyl)-6-azaisocytosine	−3.0	− 4.3
1-β-D-Arabinofuranosyl-6-azacytosine	−2.8	− 4.3
1-β-D-Arabinofuranosyl-6-azaisocytosine	−2.8	− 4.3

TABLE 155

TLC R_F VALUES OF SOME ORGANOPHOSPHORUS PESTICIDES
(C. E. MENDOZA, P. J. WALES AND D. F. BRAY, *Analyst*, 93 (1968) 689)

Thin layer: MN-Kieselgel G-HR.
Solvent: Acetone–hexane (15:85).
Detection: Enzyme-inhibition technique.

Compound	R_F^{rel} [a]
Mevinphos	0.32
Azinphosmethyl	0.52
Malathion	0.76
Parathion	1.00
Diazinon	1.11
Ethion	1.22
Carbophenothion	1.47

[a] Relative to parathion.

TABLE 156

TLC R_F VALUES OF *P. islandicum* PIGMENTS
(J. D. BU'LOCK AND J. R. SMITH, *J. Chem. Soc. C*, (1968) 1941)

Thin layer: Kieselgel H (Stahl) made up in 0.1 *N* oxalic acid.
Solvent: Ethyl acetate–hexane (3:2).
Detection: Visual, U.V. light, or magnesium acetate spray.

Compound	R_F
Islandicin	0.67
Iridoskyrin	0.65
Catenarin	0.60
Emodin	0.50
Skyrin	0.46
ω-Hydroxyemodin	0.40
Rubroskyrin	0.28
Oxyskyrin	0.28
Dihydrocatenarin	0.30
Tetrahydrocatenarin	0.11