Table 1. Aggregation Number and CMC Values for Various Surfactants
Adapted from ref. [54]

界面活性劑	臨界微胞濃度(C.M.C)	聚結數(A.N.)[a]
十二烷基硫酸鈉(SDS)	8.1 mM	62
膽酸鈉鹽(SC)	14 mM	3
去氧膽酸鈉鹽(SDC)	5.0 mM	4~10
Brij 35	0.09 mM	40
溴化十二烷基三甲銨(DTAB)	14 mM	50
溴化十六烷基三甲銨(CTAB)	1.3 mM	78

[a]Aggregation number is detected in pure water at C.M.C concentration.

Table 2. Migration time、reproducibility、detection limits and stacking efficiency of preservatives by sweeping

compound	Migration time (min)	RSD (%)	Linearity range (ppm)	LOD (ppb) (s/n=3)	Correlation coefficient of calibration graphs (R^2)	SE_{height} [a]
n-Butyl p-hydroxybenzoate	11.242	0.73	0.05~2.0	17.4	0.998	230
Isobutyl p-hydroxybenzoate	11.354	0.72	0.05~2.0	17.6	0.998	230
n-Propyl p-hydroxybenzoate	12.233	0.74	0.05~2.0	15.3	0.998	270
Isopropyl p-hydroxybenzoate	12.554	0.74	0.05~2.0	15.6	0.997	250
Ethyl p-hydroxybenzoate	14.325	0.94	0.05~2.0	20.6	0.996	180
Methyl p-hydroxybenzoate	17.925	1.05	0.05~2.0	28.4	0.991	120

n=5

$$^{a}SE_{height} = \frac{H_{stack}}{H} \times \frac{C}{C_{stack}}$$

Table 3. Migration time、reproducibility、detection limits and stacking efficiency of phenolic acids by LVSS-sweeping-MEKC

compound	Migration time (min)	RSD(%)	Linearity range (ppb)	LOD (ppb) (s/n=3)	Correlation coefficient of calibration graphs (R2)	SE_{height} [a]
sinapic acid	8.167	1.24	10-500	3.2	0.992	6800
ferulic acid	9.154	1.31	10-500	2.9	0.989	6600
coumaric acid	10.417	1.06	10-500	2.8	0.991	6420
chlorogenic acid	11.075	1.56	10-500	3.7	0.993	7200
caffeic acid	12.383	1.83	10-500	2.3	0.991	5000
syringic acid	12.954	1.84	10-500	1.2	0.99	7500
vanillic acid	14.983	1.95	10-500	1.4	0.987	8000
hydroxybenzoic acid	17.213	1.89	10-500	1.5	0.986	7300

n=5

$$^{a}SE_{height} = \frac{H_{stack}}{H} \times \frac{C}{C_{stack}}$$

Table 4. Migration time、reproducibility、detection limits and stacking efficiency of phenolic acids by ASEI-sweeping-MEKC

compound	Migration time (min)	RSD(%)	Linearity range (ppb)	LOD (ppb) (s/n=3)	Correlation coefficient of calibration graphs (R2)	SE_{height}[a]
sinapic acid	7.754	1.93	1~100	0.91	0.988	51000
ferulic acid	8.817	1.87	1~100	0.64	0.987	64300
coumaric acid	10.204	1.59	1~100	0.51	0.989	64200
chlorogenic acid	10.954	1.94	1~100	0.52	0.991	61700
caffeic acid	12.408	2.03	1~100	0.45	0.982	76000
syringic acid	13.008	2.45	1~100	0.29	0.978	81000
vanillic acid	15.083	2.31	1~100	0.42	0.979	78900
hydroxybenzoic acid	17.733	2.89	1~100	0.78	0.971	34400

n=5

$$^{a}SE_{height} = \frac{H_{stack}}{H} \times \frac{C}{C_{stack}}$$

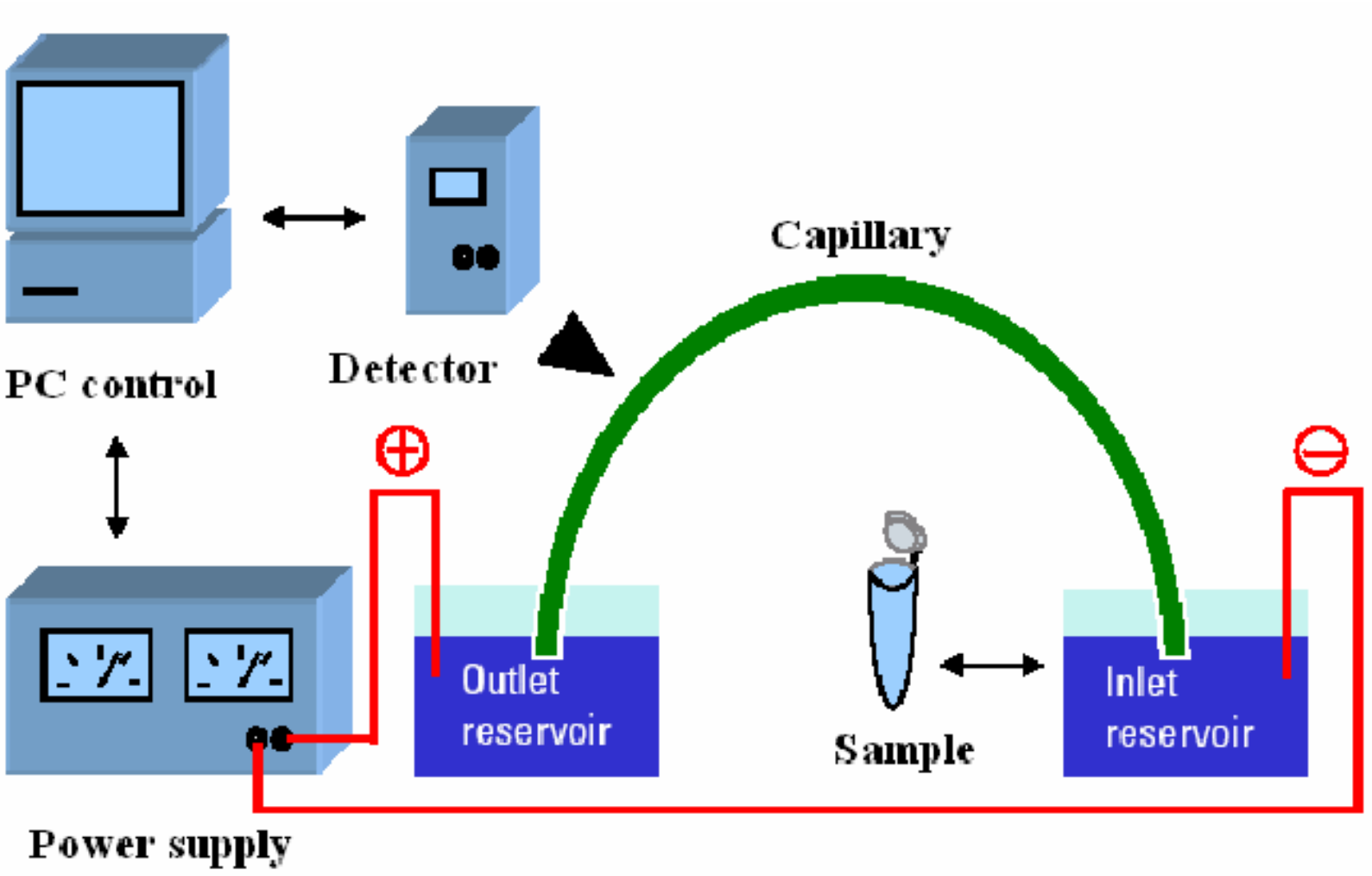

Fig. 1. The instrument of capillary Electrophoresis.

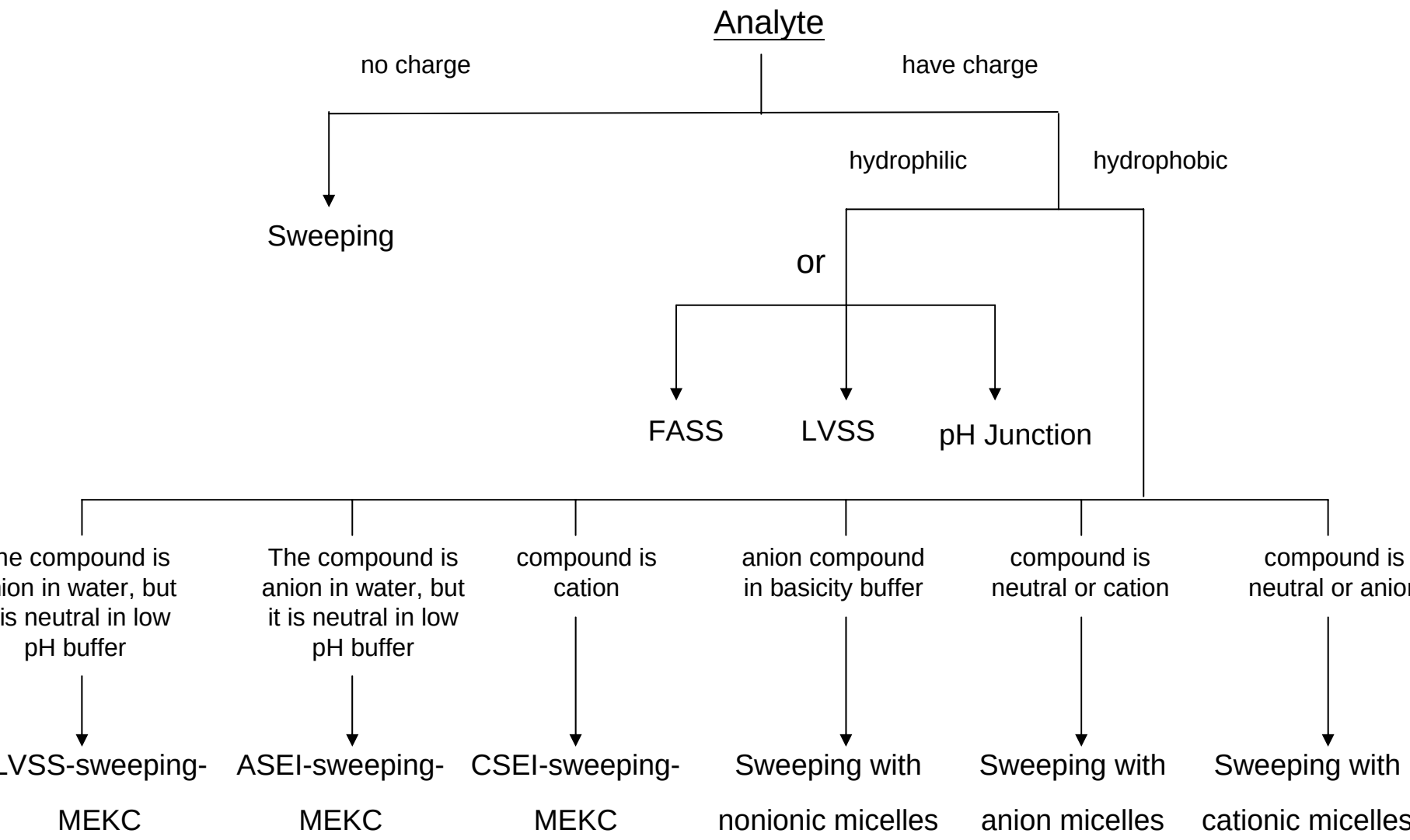

Fig. 3. The choice of on-line concentration techniques.

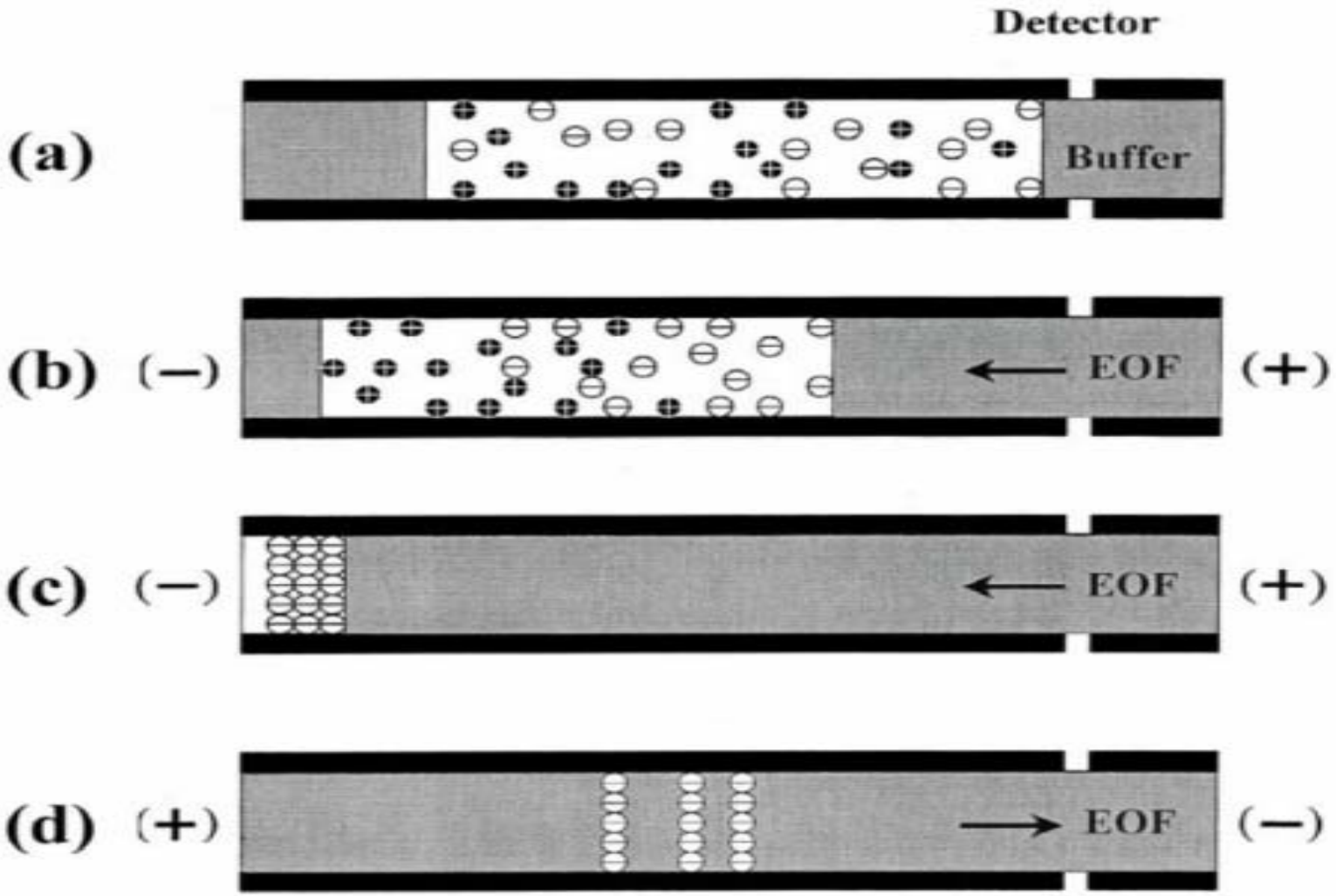

Fig. 5. The schematic of steps of CZE with LVSS under reversedpolarity conditions.
(a) A large-volume sample (prepared in water) was injected hydrodynamically (b) the voltage was applied with reversed polarity (reversed EOF direction), the sample-matrix was pushed back into the inlet vial by the EOF; (c) anionic analytes were focused on passing through the concentration boundary; (d) optimal stacking was achieved, the polarity was switched to normal mode and the separation voltage was reapplied for the analytes' separation and detection. Adapted from ref. [52]

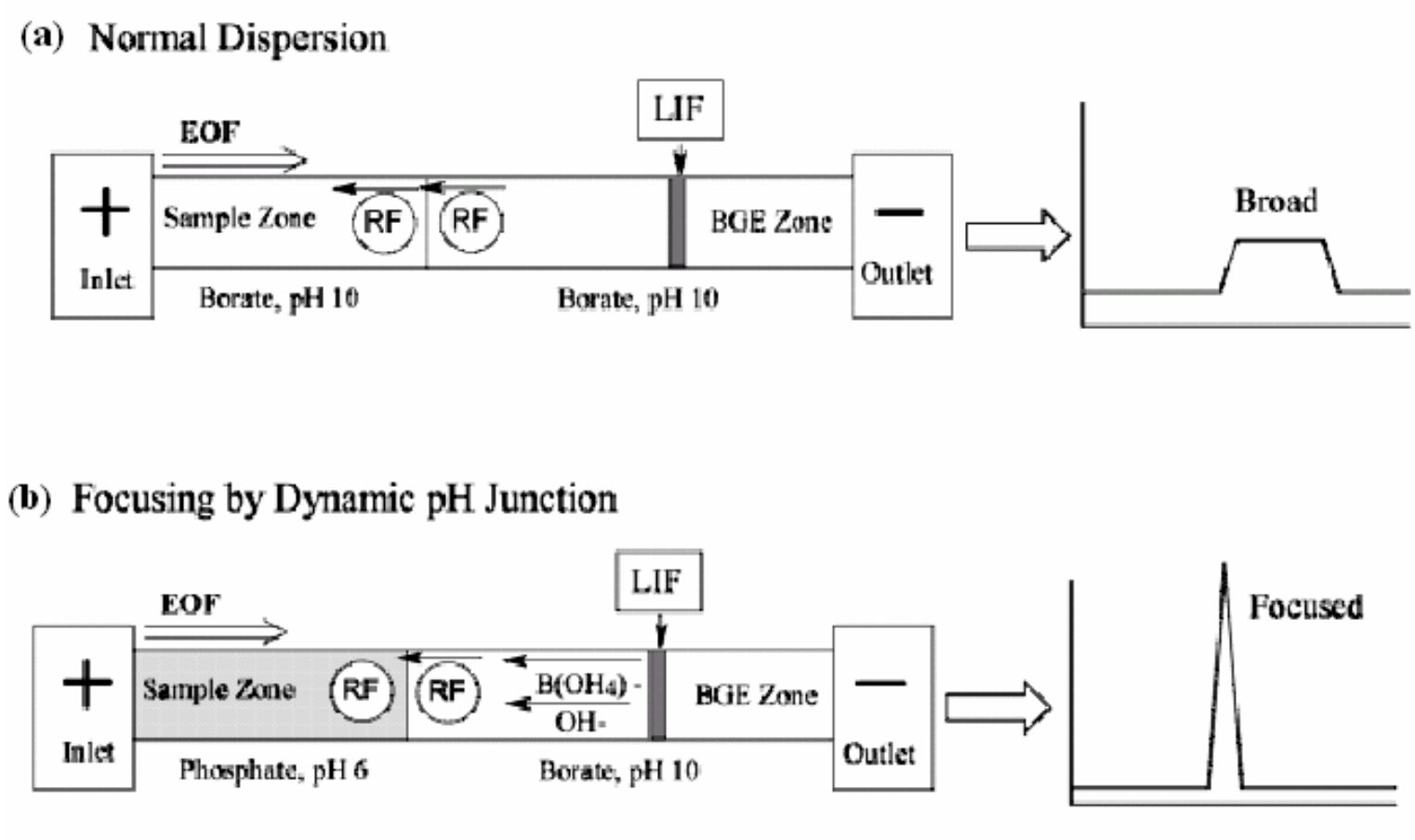

Fig. 6. The schematic of steps of CZE with dynamic pH junction (a) continuous electrolyte system and band narrowing using (b) dynamic pH junction. Adapted from ref. [20]

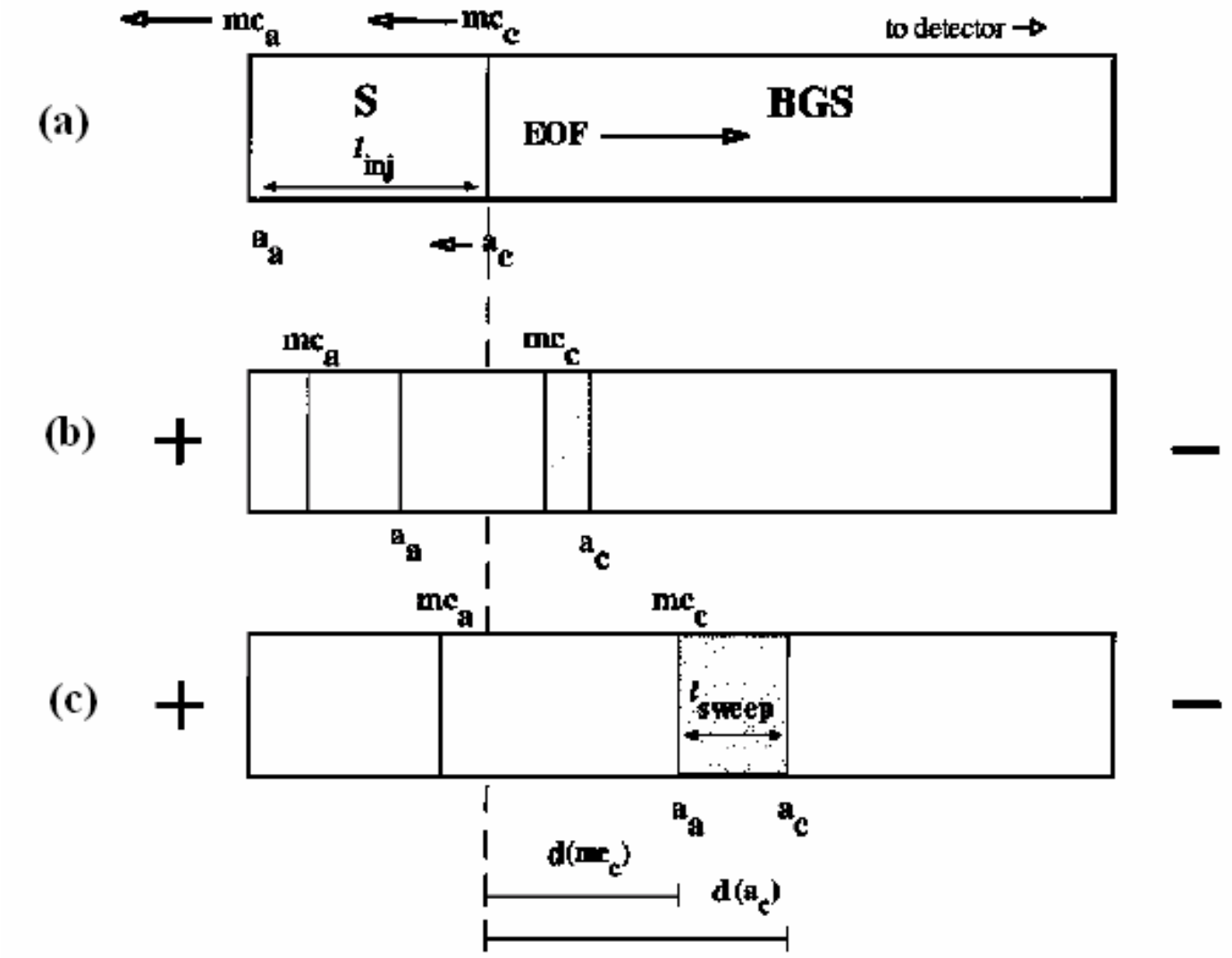

Fig. 7. Evolution of micelles and neutral analyte molecules during sweeping. Adapted from ref. [23]

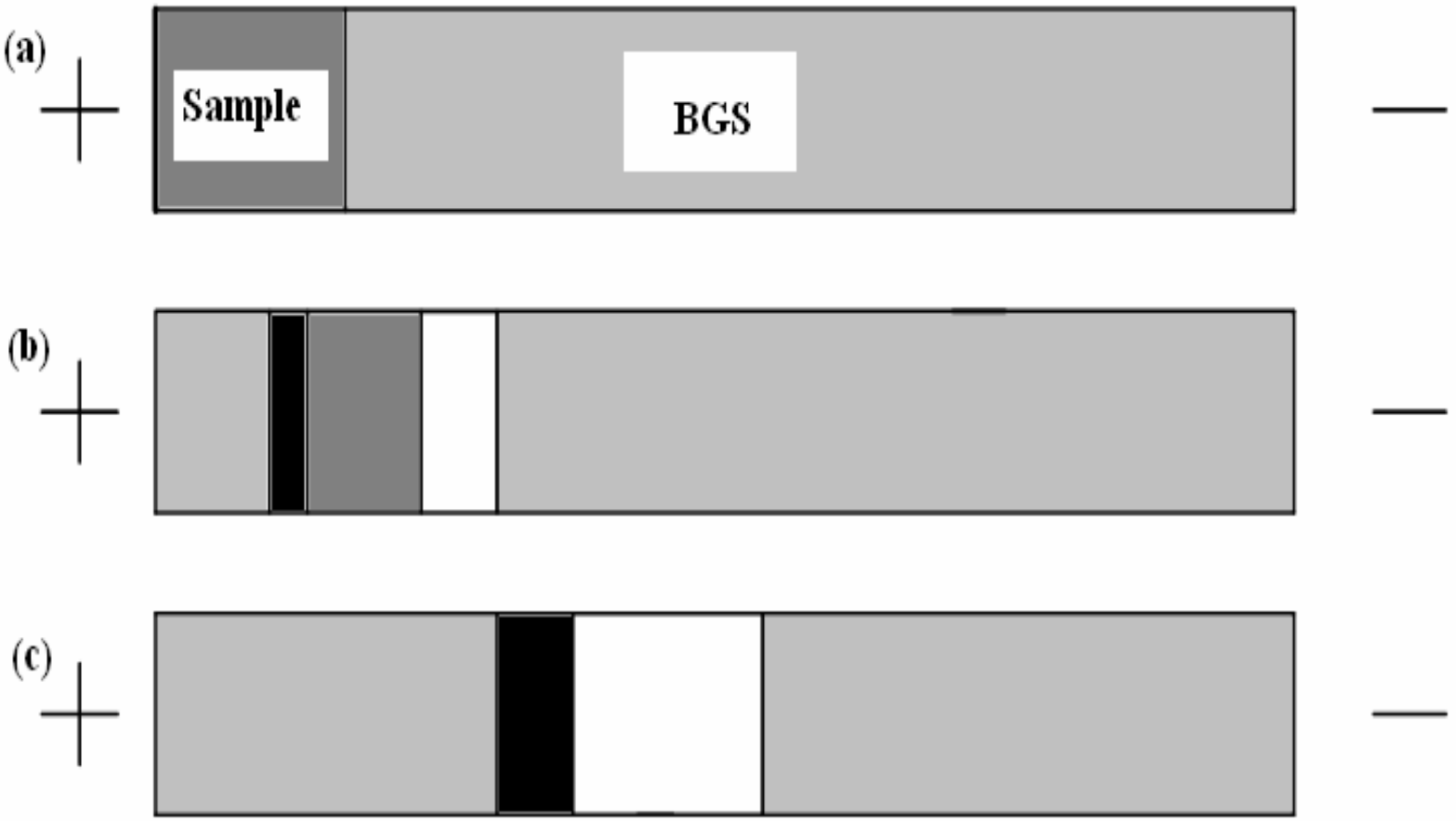

Fig. 8. Sweeping of a charged analyte in electrokinetic chromatography with a neutral pseudostationary phase. (a) Starting situation, injection of S prepared in a matrix having a conductivity similar to that of the BGS; (b) application of voltage at positive polarity, micelles emanating from the anodic side sweeping analyte molecules; (c) the injected analyte zone is assumed completely swept. Other symbols and explanations in the text. Adapted from ref. [22]

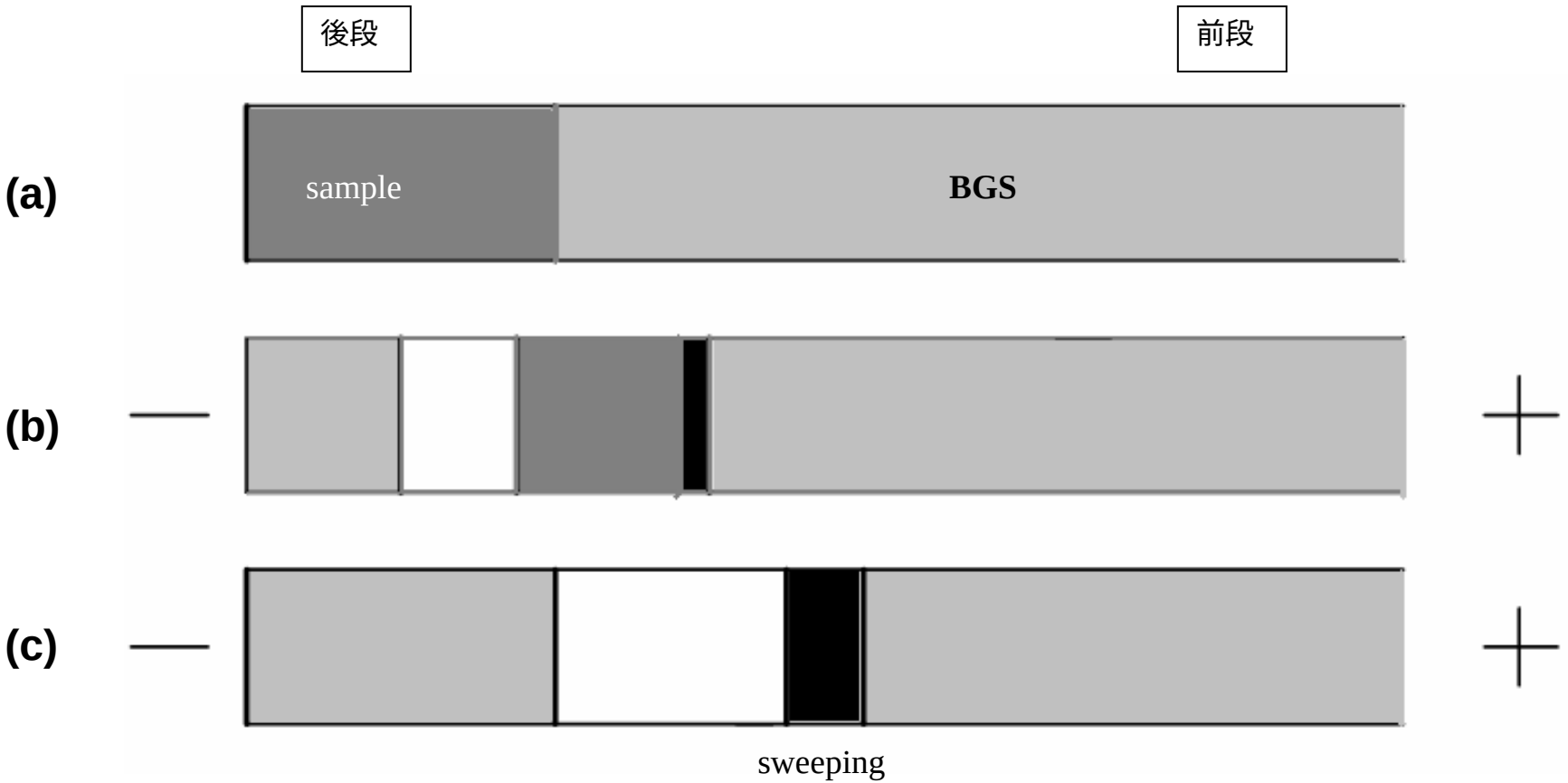

Fig. 9. Schematic diagram of a stacking mechanism by sweeping using a cationic surfactant.
(a) Starting situation, injection of S prepared in a matrix having a conductivity similar to that of the BGS; (b) application of voltage at negative polarity, micelles emanating from the cationic side sweeping analyte molecules; (c) the injected analyte zone is assumed completely swept. Other symbols and explanations in the text.

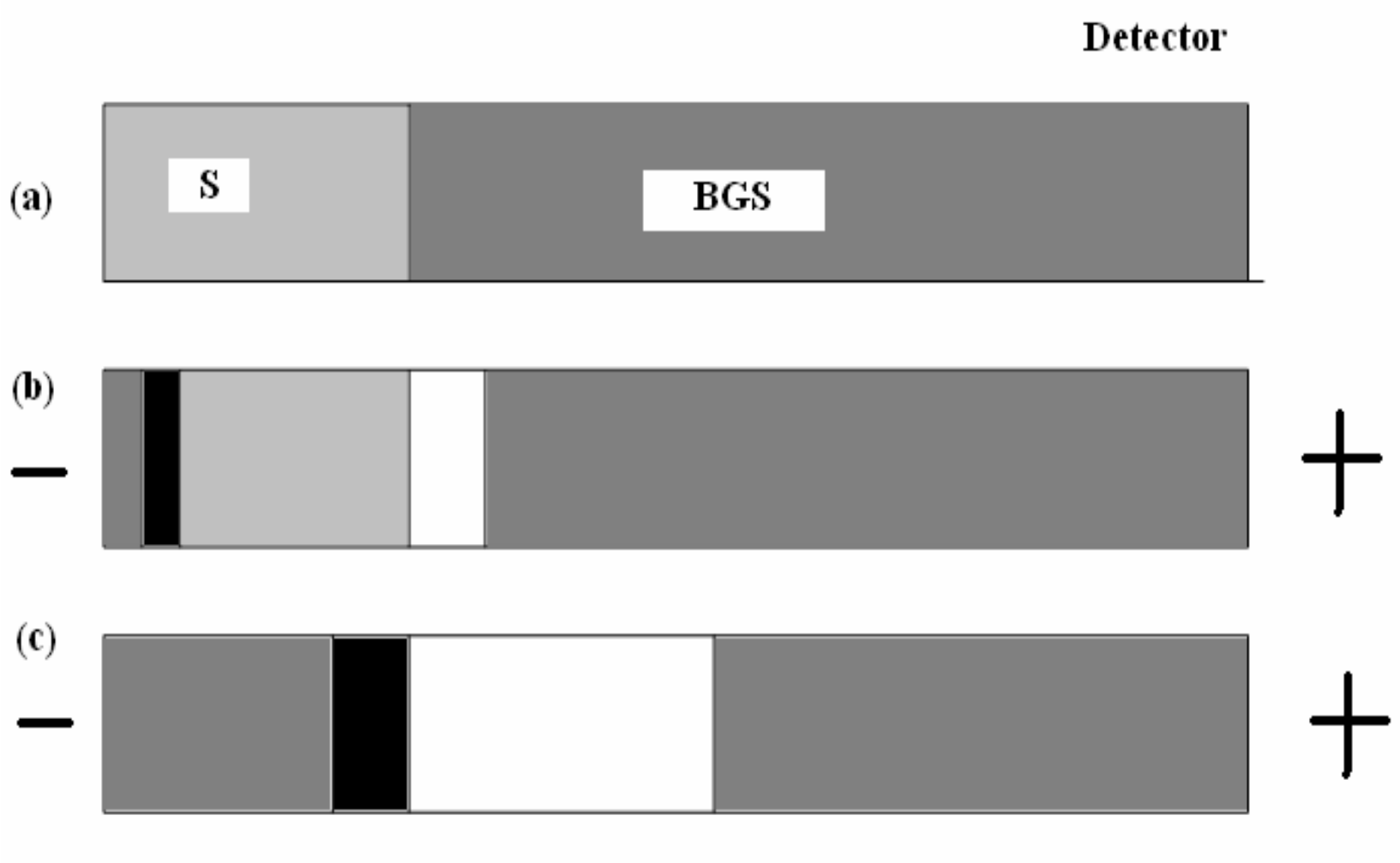

Fig. 10. Schematic diagram of a stacking mechanism by sweeping using a anionic surfactant.
(a) Starting situation, injection of S prepared in a matrix having a conductivity similar to that of the BGS; (b) application of voltage at negative polarity, micelles emanating from the anodic side sweeping analyte molecules; (c) the injected analyte zone is assumed completely swept. Other symbols and explanations in the text. Adapted from ref. [53]

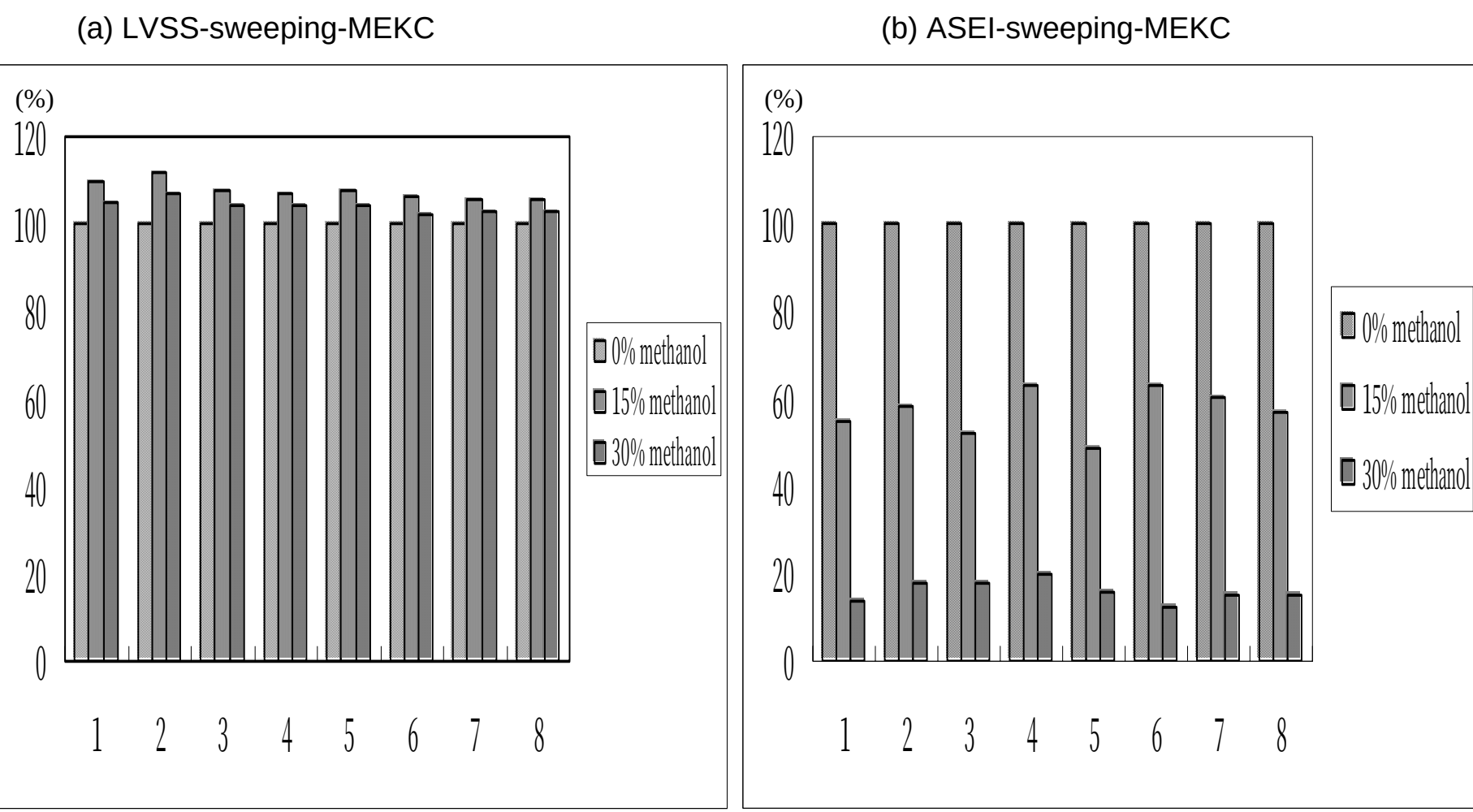

Fig. 29. Effect of the proportion of methanol in sample matrix.
Separation micellar buffer, 180 mM SDS in 15 mM citric acid/disodium hydrogen phosphate buffer at pH 2.6; separation nonmicellar buffer, 25 mM citric acid/disodium hydrogen phosphate buffer at pH 2.6; injection pressure, 5 p.s.i.; injection time, 7 min; stacking time, 5.1 min; stacking voltage, -20 kV; applied voltage, -30 kV; sample concentration, 50 μg/ L, sample dissolved in varying proportion of methanol/water.
1.sinapic acid 2. ferulic acid 3.coumaric acid 4.chlorogenic acid 5.caffeic acid
6.syringic acid 7.vanillic acid 8.hydroxybenzoic acid

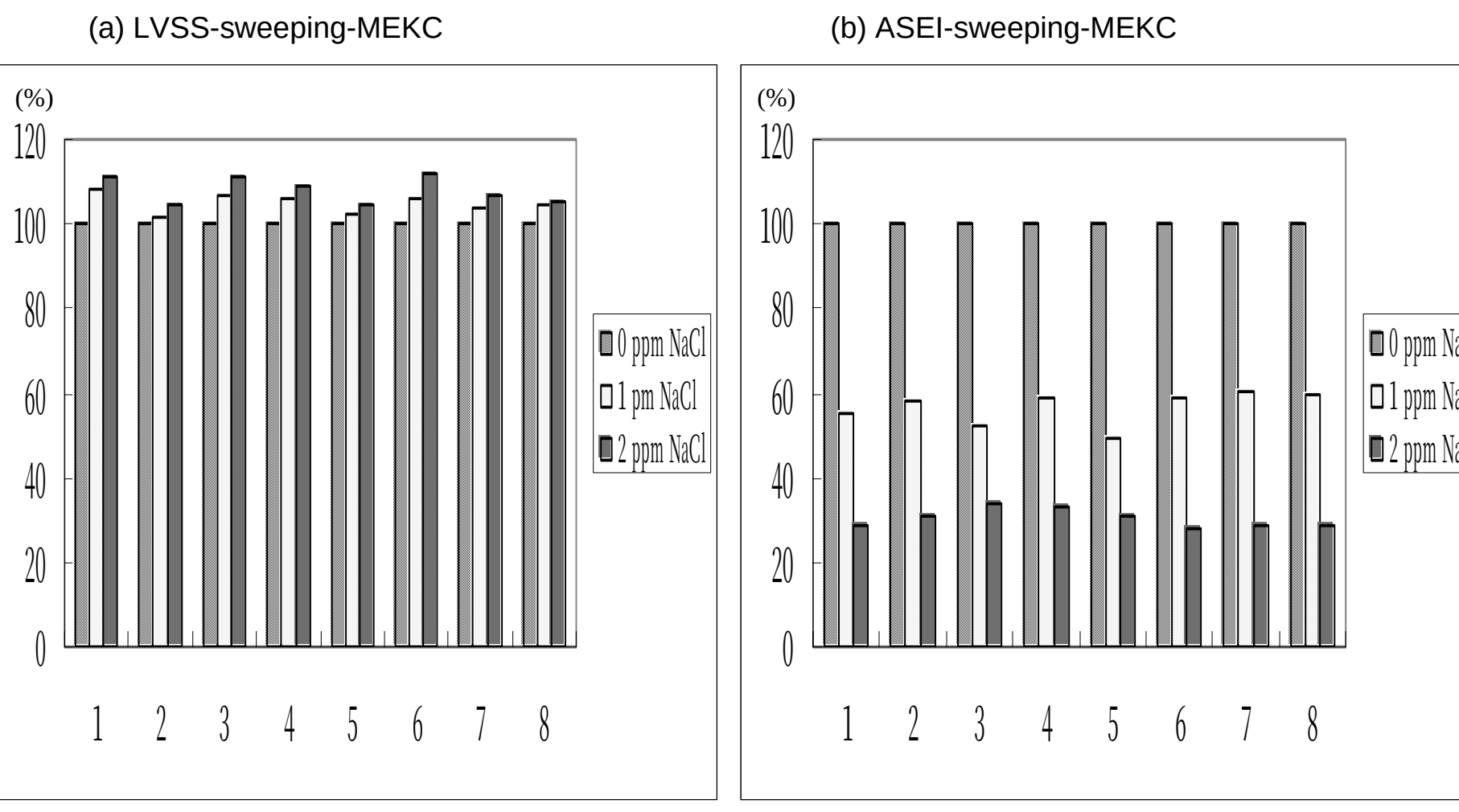

Fig. 30. Effect of the proportion of salt in sample matrix..
Separation micellar buffer, 180 mM SDS in 15 mM citric acid/disodium hydrogen phosphate buffer at pH 2.6; separation nonmicellar buffer, 25 mM citric acid/disodium hydrogen phosphate buffer at pH 2.6; injection pressure, 5 p.s.i.; injection time, 7 min; effect length, 50 cm x 50 μm I.D; stacking time, 5.1 min; stacking voltage, -20 kV; applied voltage, -30 kV; sample concentration, 50 μg/ L, sample dissolved in salt water.
1.sinapic acid 2. ferulic acid 3.coumaric acid 4.chlorogenic acid 5.caffeic acid
6.syringic acid 7.vanillic acid 8.hydroxybenzoic acid