

Instructions of TSKgel Aminopak

TSKgel Aminopak is the high performance cation exchange column for amino acid analysis. The packing material is fractionated in a narrow particle size distribution. One analysis of hydrolysed amino acid can be finished within 60 min.

Support

Base material	: polymer gel (styrene-divinylbenzene)
Functional group	: sulfonate
Ion exchange capacity	: more than 4.2 meq/g (dry gel)
Counter ion	: sodium
Particle size	: 6 μ m

Column

Dimension	: 4.6mm id. \times 12cm
Solvent	: std. 2nd. buffer for ninhydrin method

Working range

Pressure limit	: less than 8.0MPa (1,120psi)
pH range	: 2.0-14.0
Salt concentration	: less than 1.5M
Counter ion	: sodium ion
Organic solvent in eluent	: less than 20%
Temperature	: 25-80°C (for use) 15-30°C (for storage)

Quality test

Theoretical plate number and asymmetry factor of individual column are confirmed in the quality test.

Guaranteed column efficiency

Theoretical plate : more than 1,250, Asymmetry factor : 1.00-1.35

Test conditions

Sample	: tyrosine (0.1mg/mL, 20 μ L)
Eluent	: std. 2nd. buffer for ninhydrin method
Flow rate	: 0.4 mL/min
Temperature	: 55 \pm 1°C
Detector	: UV. abs. (280nm)

The Constituents of the Eluents for Amino Acid Analysis (Ninhydrin Method)

1st. Buffer

sodium citrate 2 hydrate	$\text{Na}_2\text{C}_6\text{H}_5\text{O}_7 \cdot 2\text{H}_2\text{O}$	19.6 g/L
citric acid 1 hydrate	$\text{C}_6\text{H}_5\text{O}_7 \cdot \text{H}_2\text{O}$	28.0 g/L
ethanol		80ml/L
β -thiodiglycol	$\text{C}_4\text{H}_{10}\text{O}_2\text{S}$	5.0ml/L
30% Brij-35 (polyethylene laurylether)		3.3ml/L
n-caprylic acid	$\text{C}_8\text{H}_{16}\text{O}_2$	0.1ml/L
pH value is adjusted to 3.26 with hydrochloric acid.		

2nd. Buffer

sodium citrate 2 hydrate		19.6g/L
citric acid 1 hydrate		14.0g/L
β -thiodiglycol		5.0ml/L
30% Brij-35 aq.		3.3ml/L
n-caprylic acid		0.1ml/L
pH value is adjusted to 4.30 with hydrochloric acid.		

3rd. Buffer

sodium citrate 2 hydrate		14.7g/L
sodium tetraborate 10 hydrate	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$	9.5g/L
sodium chloride	NaCl	35.1g/L
30% Brij-35 aq.		3.3ml/L
n-caprylic acid		0.1ml/L
pH value is adjusted to 9.40 with hydrochloric acid.		

Clean-up solution

0.2 N sodium hydroxide aq.	8.0g/L
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Typical eluent exchange timing

from 1st.buffer to 2nd. one	: 11 min
from 2nd.buffer to 3rd. one	: 22 min
from 3rd.buffer to Clean-up solution	: 45 min
from Clean-up solution to 1st.buffer	: 50 min