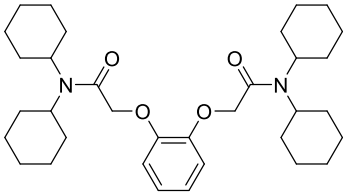
Product Information



71734 Sodium ionophore III

(ETH 2120; *N,N,N′,N′*-Tetracyclohexyl-1,2-phenylenedioxydiacetamide)
Selectophore®, function tested

Electrochemical Transduction

Ion-Selective Electrodes

Application 1 and Sensor Type[1]

Assay of Na^+ activity in whole blood, plasma, serum and aqueous solutions with solvent polymeric membrane electrodes based on Sodium Ionophore III.

Recommended Membrane Composition

1.00 wt%	Sodium Ionophore III (71734)
66.00 wt%	Bis(1-butylpentyl) adipate (02150)
33.00 wt%	Poly(vinyl chloride) high molecular weight (81392)

Recommended Cell Assembly

Reference || sample solution || liquid membrane | 0.01 M NaCl | AgCl, Ag

Electrode Characteristics and Function

Selectivity coefficients $\log K_{Na,M}^{Pot}$ as obtained by the separate solution method.

		Required[a] for blood	Found
$\log K_{Na,H}^{Pot}$		<-4.4	-0.6
$\log K_{Na,Li}^{Pot}$		<-0.1[b]	-1.2
$\log K_{Na,K}^{Pot}$		<-0.6	-1.5
$\log K_{Na,Mg}^{Pot}$		<-1.2	-4.4
$\log K_{Na,Ca}^{Pot}$		<-1.3	-2.9
Lifetime:	log P_{TLC}[c] ionophore	>8.4	7.8
	log P_{TLC}[c] plasticizer	>12.8	10.8

[a] 1% interference, worst case[2,3]
[b] therapeutical Li^+ concentration
[c] lipophilicity, determined by thin-layer chromatography[4]

Ion-Selective Field Effect Transistors

Application 1 and Sensor Type[5-8]

Determination of sodium activity with ISFET based on Sodium Ionophore III incorporated in the gate membrane.

Cocktail Composition

2.00 wt%	Sodium Ionophore III (71734)
65.00 wt%	Bis(2-ethylhexyl) sebacate (84818)
33.00 wt%	Poly(vinyl chloride) high molecular weight (81392)

The ISFET used contains a polyHEMA interlayer. The membrane solution (a total 100 mg of components in 1 ml THF) is cast on the polyHEMA layer.

Electrode Characteristics and Function

Selectivity coefficients $\log K_{Na,M}^{Pot}$ as obtained by the fixed interference method with 0.1 M solutions of the chlorides).

$\log K_{Na,K}^{Pot}$	-1.6	$\log K_{Na,Rb}^{Pot}$	-2.2
$\log K_{Na,Cs}^{Pot}$	-2.6	$\log K_{Na,Ca}^{Pot}$	-3.2
$\log K_{Na,Li}^{Pot}$	-1.4	$\log K_{Na,Mg}^{Pot}$	-3.6

Slope of linear regression: 58.4-61.6 mV (background of 0.1 M interfering ion)

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