Supplementary information

Potentiometric Biosensor based on Artificial Antibodies for an Alzheimer Biomarker detection

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Table S1. Log KPOT for different interfering species in MOPS pH 8.0.

Interfering	**Log K_{POT}**
	MIP
Creatinine	-0.018
Albumin	-0.016
Urea	-0.016

Table S2. Electrochemical biosensors for the detection of AD peptide biomarkers using nanomaterials as electrode modifiers or as labels published over the lastten years.

Biorecognition element	Biomarker	LOD	Linear Range	Selectivity Tested	Real Sample Tested	Ref
Antibody	Aβ	22 fM	0.22 pM–2.22 nM	Not tested	Serum samples	[1]
Antibody	Aβ	1.15 pM	2.22–221.6 pM	Not tested	Not tested	[2]
Antibody	p53	0.05 nM	2–50 nM	Not tested	Real plasma samples of MCI and AD patients	[3]
Antibody	Aβ	22.2 pM	111 pM–111 nM	Not tested	Not tested	[4]
Antibody	Aβ	100 fM	100 fM–25 pM.	HSA, IgG and other AD	Serum and plasma samples	[5]
Antibody	Aβ	10 pM	0.02–1.50 nM	Artificial CSF	Not tested	[6]
MIP	Aβo	88.6 fM	22 pM–14.6 nM	Not tested	Serum samples	[7]
MIP	Aβo	0.3 fg mL^{-1}	1.0 fg mL^{-1} - 100.0 fg mL^{-1}	Aβ42	plasma samples for Aβ42 analysis.	[8]
MIP	Aβo	0.27 pM	1.1 pM–2.2 nM	Aβ40-42 monomers,	Human serum samples	[9]
Aptamer	Aβo	100 pM	0.5–30 nM	Aβ40-42 monomers, CSF Aβ(40–42)o, Aβ(40–42)f		[10]]
cellular prion protein (PrPC)	Aβo	10-2 fM	10−8–104 nM	Aβf and monomers	AD mice tissue	[11]
PrP(95-110)	Aβo	8 pM	20 pM–100 nM	Aβ f and monomers	Human serum samples	[12]
membrane capturing A beta aggregates l	Aβ	2.21 pM	2.21 pM–221 nM.	Aβ monomers, peptides	Human blood serum	[13]
Gelsolin-HRP	Aβ	28 pM	0.1–50 nM	Not tested	CSF and rat brain tissues	[14]
ferrocene-encapsulated Zn zeolitic imidazole framework (ZIF-8	Aβo	10-5 μM	10−5–102 μM	Aβf and monomers and artificial CSF	Not tested	[15]

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