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Potentiometric Solid-Contact Ion-Selective Electrode for Determination of Thiocyanate in Human Saliva

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Table S1. Comparison of the metrological parameters of different SCN-ISE reported in the literature (listed in chronological order) with indicated compounds group to whom the ionophores belongs. Reference numbering is in accordance with Reference list in the main manuscript. Group of compounds: **(I-1)** porphyrins, **(I-2)** phthalocyanines, **(I-3)** aza-macrocycles, **(I-4)** crow ethers, **(I-5)** calix[4]arenes, **(I-6)** organic and metalloorganic non-macrocyclic complexes. The selectivity coefficients for ions present in the highest concentration in saliva samples, that is Cl^- and HCO_3^- are marked with red.

Ionophore	Membrane/Electrodes System	Method: Selectivity Coefficients	Slope LOD Linear range	Analytical Usage	Ref.
nitron − thiocyanate ion−pair complex **(I-6)**	92 Orion electrode barrel with an Orion 92−06−04 microporous membrane Ag/AgCl ׀10^{-2} M NaSCN, 10^{-2} M NaCl ׀10^{-3} M nitron−SCN in nitrobenzene ׀׀ porous membrane ׀׀ SCN^- in the test solution ׀Ag/AgCl reference electrode	**FIM:** F^- −2.9; Cl^- −2.9; Br^- −2,7; I^- −1.7; ClO_4^- +0.3; IO_4^- +0.5; S^{2-} −0.6; SO_3^{2-} −3.0; SO_4^{2-} −3.0; $S_2O_3^{2-}$ −2.9; $S_2O_8^{2-}$ −2.8; CN^- −2.8; CH_3COO^- −3.0 NO_3^- −2.1 NO_2^- −3.0; $H_2PO_4^-$ −2.0; WO_4^{2-} −2.2; MoO_4^{2-} −2.1; $Fe(CN)_6^{3-}$ −3.6; $Fe(CN)_6^{4-}$ −3.6; Oxalate −2.8; Formate −2.0	−55 mV/dec ~ 10^{-5} M 10^{-1} – 10^{-5} M	Titration of Ag^+ and Hg^{2+} ions with 10^{-2} M NaSCN solution.	[47]
α,α,α,α−chloro(5,10,15,20−tetrakis−(8−bromo−l−naphthyl) porphyrinato)manganese(III) **(I-1)**	1% ionophore, 66%, dibutyl sebacate (DBS), 33% PVC	**SSM**: Cl^- −3.5; Br^- −3.3; I^- −1.9; Sal −1.5; IO_4^- −2.9; ClO_4^- −3.1	−59 mV/dec LOD− no data	Electrode tested towards Cl^-, no experiments with SCN^-.	[33]

	Hg/Hg_2Cl_2(s)KCl(sat.)/MES (0.05 mol/L), pH 5.5| sample solution | membrane | KCl (0.1 mol/L), AgCl(s)/Ag		1.6·10^{-2} – 10^{-5} M	No real samples.	
5,10,15,20−tetrakis(2,4,6−triphenylphenyl)porphyrinato)manganese(Ill) chloride **(I-1)**	1% ionophore, 66% DBS, 33% PVC Hg/Hg_2Cl_2(s); KCl, 4 M/MES buffer/sample solution/ionselective membrane/MES buffer; NaSCN 50 μM, AgCl(*s*)/Ag	**SSM:** Sal^- −1.6; ClO_4^- −2.3; I^- −3.0; CN^- −3.2; Br^- −3.8; Cl^- −4.6; AcO^- −4.2	Near Nernstian (no value given) LOD− no data 10^{-3} – 10^{-6} M	Saliva samples diluted 1:50 with MES buffer.	[34]
μ−Oxotetraphenyl porphyrinatoiron [$(FeTPP)_2O$] **(I-1)**	1% ionophore, 66% DDS, 33% PVC 1% ionophore, 66% DBP, 33% PVC Hg/Hg_2Cl_2, KCl (sat.) | samples solution || membrane || 0.1 M KCl Ag/AgCl	**SSM:** I^- −2.17; ClO_4^- −2.34; NO_2^- −2.73; Br^- −2.92; Cl^- −3.04; NO_3^- −3.70; **SSM**: I^- −1.30; ClO_4^- −0.6; NO_2^- −2.00; Br^- −2.50; Cl^- −2.90; NO_3^- −2.3;	−53 mV/dec 3.98·10^{-7} M 10^{-1} – 10^{-6} M −58 mV/dec 6.31·10^{-5} M 10^{-1} – 10^{-4} M	Urine samples diluted 1:10 with 0.01 M H_3PO_4−NaOH solution. Not specified, which electrode was used.	[35]
chloro[5,10,15,20−tetra(*p*−methoxyphenyl)porphyrinato]manganese(III) **(I-1)**	1% ionophore, 66% didecyl sebacate (DDS), 33 % of PVC Hg/Hg_2Cl_2(s)KCl (sat.)| sample solution/membrane/KCl (0.1 mol/L), AgCl(s)/Ag	**SSM**: Cl^- −3.2; Br^- −2.8; I^- −2.4; Sal −1.0; ClO_4^- −2.4; NO_3^- −3.3; NO_2^- −2.8;	Slope: no data 2·10^{-5} M 10^{-1} – 10^{-4} M	No real samples.	[36]
cobalt phthalocyanine **(I-2)**	10 % ionophore, 30% BEHP, 60% PVC;	**SSM**: SO_4^{2-} −4.08; $H_2PO_4^-$ −3.07; CO_3^{2-} −2.98; CH_3COO^- −2.03; Oxalate	−59.1 mV/dec 5·10^{-7} M	Urine samples diluted 1:10 with	[39]

	Hg/Hg_2Cl_2, KCl (sat.) ⁞ samples solution ⁞⁞ membrane ⁞⁞ graphite rod	−2.02; NO_3^- −2.77; ClO_4^- −2.36; NO_2^- −2.44; CN^- −2.34; N_3^- −2.27; F^- −2.85; Cl^- −2.80; Br^- −2.54; Sal^- −2.08; I^- −2.27	10^{-1} – 10^{-6} M	0.005 M phosphate buffer. Potentiometric titration of SCN^- with $AgNO_3$ solution.	
nickel phthalocyanine **(I-2)**	5.1% ionophore, 63% DOP, 31.9% PVC; Hg/Hg_2Cl_2, KCl (sat.) ⁞ samples solution ⁞⁞ membrane ⁞⁞ graphite rod	**SSM**: CH_3COO^- −4.4; SO_4^{2-} −4.9; $H_2PO_4^-$ −3.6; CO_3^- −2.8; Oxalate −4.4; NO_3^- −2.6; ClO_4^- −0.4; NO_2^- −2.4; CN^- −1.6; N_3^- −2.1; F^- −2.7; Cl^- −2.5; Br^- −2.2; Sal^- −2.6; I^- −1.3	−58.4 mV/dec $5{\cdot}10^{-7}$ M 10^{-1} – $5{\cdot}10^{-7}$ M	Urine samples diluted 1 : 10 and adjusted to pH 5.0.	[40]
iron(III) phthalocyanine chloride **(I-2)**	5.2% ionophore, 62.8% DOP, 32% PVC; Hg/Hg_2Cl_2, KCl (sat.) ⁞ samples solution ⁞⁞ membrane ⁞⁞ graphite rod	**SSM:** CH_3COO^- −2.6; SO_4^{2-} −4.0; $H_2PO_4^-$ −2.6; CO_3^{2-} −2.1; Oxalate −4.1; NO_3^- −2.6; ClO_4^- −0.6; NO_2^- −2.5; CN^- −3.3; N_3^- −2.1; F^- −2.6; Cl^- −2.5; Br^- −2.2; Sal^- −2.7; I^- −1.5	−57.2 mV/dec $2{\cdot}10^{-6}$ M 10^{-1} – $5{\cdot}10^{-6}$ M	Urine samples diluted 1 : 10 and adjusted to pH 5.	[40]
Mn(II) complex of N,N'−bis−(4−phenylazosalicylidene) o−phenylene diamine **(I-6)**	3.81% ionophore, 30.44% PVC, 65.45% DOP, 0.3% DTOAI Hg–Hg_2Cl_2 ⁞ KCl (sat.) ⁞ (sample solution ⁞⁞ membrane⁞⁞ 0.01 M KCl ⁞ AgCl − Ag.	**SSM:** I^- −1.34;Sal – 1.44; Benzoate −2.28; ClO_4^- – 1.40; NO_3^- –4.59; NO_2^- – 3.12; Br−–4.05; AcO^- –4.61; Cl^- –4.84	−57.3 mV/dec LOD: nd 10^{-1} – $7.02{\cdot}10^{-6}$ M	Waste water samples.	[48]
cadmium {*N*,*N*′−bis(salicylidene)−1,2−ethylenediamine} complex **(I-6)**	30% PVC, 7% ionophore, 3% HTAB (hexadecyl trimethyl ammonium bromide) and 60% DBP (dibutyl phthalate). Ag/AgCl ⁞⁞ KCl (3 M) internal solution, 1.0×10^{-3} M KSCN ⁞ PVC	**MPM**: CH_3COO^- −4.6; SO_4^{2-} −3.3; SO_3^{2-} −3.3; CO_3^{2-} −3.4; NO_3^- −3.1; ClO_4^- −3.0; NO_2^- −3.5; CN^- −3.3; Cl^- −3.0; Br^-−3.2; I^- −2.5; MnO_4^- −1.7; $S_2O_3^{2-}$ −3.3; IO_3^- −3.8; HCO_3^- −3.4; Sal^-	−59.1 mV/dec $7{\cdot}10^{-7}$ M 10^{-1} – $5{\cdot}10^{-6}$ M	Determination of thiocyanate in a sample of milk.	[49]

	membrane | test solution | Hg–Hg_2Cl_2, KCl (sat.).	−2.8; Succinate −3.4; Citrate −3.9; Ascorbate −3.6			
1,8−dibenzyl−1,3,6,8,10,13−hexaazacyclotetradecane−Ni(II) Perchlorate **(I-3)**	6% ionophore, 60.2% DBP, 2.7% sodium tetraphenyl borate (NaTPB), 31.1% PVC Pt−electrode/PVC membrane/sample solution/KCl(sat.), Hg_2Cl_2/Hg	FIM: NO_2^- −4.0; Saicylate −2.1; Oxalate−1.9; Citrate -3.9; Br^- −1.8; IO_3^-−2.5; SO_4^{2-} −3.1; CH_3COO^- -3.0; HCO_3^- −2.5; NO_3^- −1.8; $S_2O_3^{2-}$ −3.3; I^- −3.2; MnO_4^- −4.2; CrO_4^{2-} −2.7; ClO_4^- −3.2; ClO_3^- −3.5; Cl^- −3.2	−58.4 mV/dec $3\cdot10^{-6}$ M $3.3\cdot10^{-6}$ – 0.10 M	Urine and saliva samples diluted 1:10 with water and adjusted to pH 5.0 with phosphoric acid and/or potassium hydroxide solution; potentiometric titration.	[42]
chloro[5,10,15,20−tetra−phenyl)porphyrinato]manganese(III) **(I-1)**	28% PVC, 57% DOP, 10% ionophore and 5%NaTPB Hg/Hg_2Cl_2, KCl (sat.) | samples solution || membrane || graphite rod	**SSM**: CH_3COO^- −3.66; SO_4^{2-} −5.35; $H_2PO_4^-$ −4.38; CO_3^{2-} −2.75; Oxalate −5.44; NO_3^- −2.9; ClO_4^-−1.54; NO_2^- −3.88; CN^- −3.71; N_3^- −2.73; F^- −3.44; Cl^- −3.88; Br^- −2.86; Sal^- −1.9; I^- −2.49	−59.5 mV/dec $5\cdot10^{-8}$ M 10^{-1} – 10^{-7} M	Urine samples diluted 1:10 with 0.05 M phosphate buffer at pH 4.5.	[37]
2,4,10,12−tetramethyl−1,5,9,13−(benzo) tetrazacyclopentadecinato (2−) nickel(II) **(I-3)**	5.7% ionophore, 62.7% NPOE, 31.6% PVC Ag, AgCl|1–2 drop of KCl (sat.), 1.0×10^{-3} M KSCN|PVC membrane|test solution|Ag, AgCl, KCl (sat.).	**FIM**: CH_3COO^- −3.08; N_3^- −2.45; SO_4^{2-} −4.20; PO_4^{3-} −3.40; CO_3^{2-} −3.15; Oxalate −3.00; NO_3^- −2.2; ClO_4^- −0.95; −2.7; CN^- −1.65; F^- −2.30; Cl^- −3.10; Br^- −2.45; Sal^- −2.2; I^- −1.10; S^{2-} − 2.91; $S_2O_3^{2-}$ −3.55; Formate −2.53, Citrate −3.34; NO_2^- −2.2; Phthalate −2.3; Succinate −3.7; Tartarate −3.75	−59.7 mV $1.4\cdot10^{-7}$ M 10^{-1} – $1.4\cdot10^{-7}$ M	Urine samples diluted 1:10 (or 1:20) and adjusted to pH 5.0 with H_3PO_4 or KOH solutions. Saliva− no info about pretreatment, potentiometric titration.	[43]
Ni(II) 2,2,4,9,9,11−hexamethyltetraazacyclotetradekanediene perchlorate **(I-3)**	5% ionophore, 63% DBP, 2% HTAB, 30% PVC	**MPM:** F^- −4.49; Cl^- −4.37; Br^- −4.15; I^- −2.64; $S_2O_3^{2-}$	−57.8 mV/dec	Bovine milk, urine or saliva diluted 1:10	[44]

	Hg/Hg_2Cl_2, KCl (sat.) ǀ samples solution ǁ membrane ǁ graphite rod	−3.23; SO_3^{2-} −4.30; HCO_3^- −4.05; CO_3^{2-} −4.18; NO_2^- −3.51; CN^- −2.72; ClO_4^- −3.15; ClO_3^- −3.09; IO_3^- −3.07; IO_4^- −3.14; CrO_4^{2-} −4.35; $Cr_2O_7^{2-}$ −−4.42; MnO_4^- −4.54; MoO_4^{3-} −4.68	4.8·10^{-8} M 10^{-1} – 10^{-7} M	and adjusted to pH 5.0 with H_3PO_4 or KOH solutions.	
		SSM: F^- −4.51; Cl^- −4.48; Br^- −4.31; I^- −2.48; $S_2O_3^{2-}$ −4.32; SO_3^{2-} −3.16; HCO_3^- −4.11; CO_3^{2-} −3.09; NO_2^- −3.15; CN^- −2.57; ClO_4^- −3.18; ClO_3^- −3.17; IO_3^- −3.10; IO_4^- −3.15; CrO_4^{2-} −4.15; $Cr_2O_7^{2-}$ −4.15; MnO_4^- −4.75; MoO_4^{3-} −4.96			
bis−bebzoin−semitriethylenetetraamine binuclear copper(II) **(I-6)**	6.5 % ionophore, 64.9% o−NPOE, 28.6% PVC Hg/Hg_2Cl_2, KCl (sat.) ǀ samples solution ǁ membrane ǁ 0.1 M KCl Ag/AgCl	**SSM:** Cl^- −2.7; I^- 0.9; Sal −1.0; ClO_4^- −0.5; NO_3^- −2.5; NO_2^- −2.8; SO_4^{2-} −3.4; SO_3^{2-} −2.0; $H_2PO_4^-$ −2.6	−57.0 mV/dec 7·10^{-7} M 10^{-1} – 9·10^{-7} M	Industrial wastewater sample.	[50]
Ionophore II (I-6)	1.5% ionophore, 65% DOP, 33 % PVC, 0.5% TDMAC Ag/AgCl(s), 4 M KCl (sat.). with AgCl(s) ǀ sample solution ǁ membrane ǁ internal reference solution/AgCl(s)/Ag.	**SSM**: no given values, diagram only IO_4^-> SCN^->I^-> ClO_3^-> HCO_3^-> CN^- > NO_3^-> Br^- ~CH_3COO^-> NO_2^-> BrO_3^- > F^-> CrO_4^->S^{2-} > $S_2O_3^{2-}$> $H_2PO_4^-$ > SO_4^{2-} > SO_3^{2-}	−56.3 mV/dec 5.5·10^{-6} M 10^{-5} – 1.0·10^{-2} M	Potentiometric titration of Ag^+, Cu^{2+}, Tl^+ and Pb^{2+}.	[51]
bis(2−mercaptobenzoxazolato) mercury(II) **(I-6)**	30.5% PVC, 61.0% DOP, 6% ionophore, 2.5% methyltrioctylammonium	**FIM:** CH_3COO^- −4.12; N_3^- −3.40; SO_4^{2-} −4.35; PO_4^{3-} −4.10; CO_3^{2-} −3.92; Oxalate	−60.6 mV/dec 6·10^{-7} M	Saliva diluted 1: 10 with 0.05 M	[52]

	chloride	−4.62; NO_3^- −4.82; ClO_4^- −1.46; NO_2^- −3.36; CN^-; F^- −3.82; Cl^- −0.99; Br^- −2.12; Sal^- −3.44; I^- −0.65; CO_3^{2-} −3.92	10^{-1} – 10^{-6} M	phosphate buffer of pH 5.	
	Ag, AgCl ׀ KCl (sat.) ׀ membrane׀׀ test solution׀ graphite electrode			Potentiometric titration of SCN^- with $AgNO_3$ solution.	
two zinc(II) ions and two molecules of the bis−N,O−bidentate Schiff base 2,2_−[methylenebis(4,1−phenylenenitrilomethylidyne)]bisphenol **(I-6)**	5% ionophore, chloroparaffin−PVC (2 :1), Tridodecylmethylammonium chloride (TDDMACl)	**FIM:** CH_3COO^- −3.6; N_3^- −2.1; SO_4^{2-} −2.0; $H_2PO_4^-$ −3.8; HPO_4^{2-} −2.7; HCO_3^- −3.3; NO_3^- −1.5; ClO_4^- −0.3; NO_2^- −2.3; CN^- −2.6; F^- −4.0; Cl^- −2.7; Br^- −2.1; Sal^- −0.3; I^- −0.5;	−57.5 mV/dec $4{\cdot}10^{-7}$ M LR: nd	No sample.	[53]
	Ag׀ AgCl ׀3 M KCl ׀׀ 1 M $LiOCOCH_3$ ׀׀sample׀ membrane ׀ internal filling solution ׀AgCl׀ Ag				
N,N'−bis−(benzaldehyde)−glycine copper(II) complex **(I-6)**	3.0% ionophore, 67.2% *o*−NPOE and 29.8% PVC	**FIM: :** Cl^- −3.9; I^- −2.0; Sal −1.8; ClO_4^- −1.6; NO_3^- −3.5; NO_2^- −3.0; SO_3^{2-} −3.1; $H_2PO_4^-$ −4.4; Br^- −2.4	−57.6 mV/dec $7{\cdot}10^{-7}$ M 10^{-1} – $9{\cdot}10^{-6}$ M	Industrial wastewater sample.	[54]
	Hg−Hg_2Cl_2/KCl (sat.)/sample solution/membrane/ 0.1 M HCl/AgC1−Ag	**SSM:** Cl^- −4.3; I^- −2.4; Sal −2.1; ClO_4^- −1.8; NO_3^- −3.7; NO_2^- −3.3; SO_3^{2-} −4.1; $H_2PO_4^-$ −4.5; Br^- −2.7		Saliva samples adjusted to pH 4.0 with phosphoric acid and/or sodium hydroxide solution.	
Rh[(trpy)(bpy)Cl](PF6)2 **(I-6)**	3% ionophore, 65% o−NPOE and 30% PVC, 2% HDTMAB	**MPM:** F^- −4.7; Cl^- − 4.0; Br^- −3.4; NO_2^- −4.8; NO_3^- −5.0; ClO_4^- −2.2; IO_3^- −3.3; SO_3^{2-} −4.7; SO_4^{2-} −4.8; $S_2O_3^{2-}$ −4.2	−58.7 mV/dec $4{\cdot}10^{-6}$ M 10^{-1} – 10^{-5} M	Saliva samples diluted 1:10 with water and adjusted to pH 5.0 with phosphoric acid and/or potassium hydroxide solution.	[55]
	Ag–AgCl ׀KCl(3 M)׀ internal solution, 1 mM SCN^- ׀PVC membrane׀ test solution Hg–Hg_2Cl_2, KCl(sat.)				
butane−2,3−dione bis(salicylhydrazonato)zinc(II) complex **(I-6)**	32% PVC, 60% DOP, 6% ionophore, 2% TOMAC.	**FIM:** Cl^- −3.9; I^- −3.8; Sal −3.2; ClO_4^- −2.8; NO_3^- −3.0; NO_2^- −3.1; SO_3^{2-} −3.1; Br^- −3.3; CN^- −3.5; F^- −4.1;	−56.5 mV/dec $7{\cdot}10^{-7}$ M	Industrial wastewater sample.	[56]

	Ag | AgCl | KCl (3 M) internal solution (10^{-5} M KSCN)| PVC membrane | test solution || SCE	CO_3^{2-} −4.0; SO_4^{2-} −4.1; HPO_4^{2-} −4.0; PO_4^{3-} −4.2; ClO_3^- −3.2; CrO_4^{2-} −3.4; MnO_4^- −3.4	10^{-1} – 10^{-6} M	Urine and saliva samples diluted 1:10 with water and adjusted to pH 5.0 with phosphoric acid and/or potassium hydroxide solution.	
5,11,17,23−tetra−*tert*−butyl−25,26,27,28−tetracyanometoxy−calix[4]arene **(I-5)**	1% ionophore, 66% 2−NPOE and 33% PVC double junction reference electrode/analyte solution/ membrane/1.0×10^{-2} M HCl/Ag/AgCl	**SSM:** I^- 2.882; ClO_4^- 0.593; $H_2PO_4^-$−2.201; AcO^- −2.292; F^- −2.027; NO_3^- −2.347; NO_2^- −2.237; HSO_3^- −2.167; Br^- −1.967	−52 mV/dec $2.5\cdot10^{-5}$ M 10^{-1} – $3\cdot10^{-5}$ M	Potentiometric titration of SCN^- with $AgNO_3$ solution.	[46]
nickel(II)−1,4,8,11,15,18,22,25−octabutoxyphthalocyanine **(I-2)**	30% PVC, 65% DBP, 3% ionophore and 2% hexadecyltrimethylammonium bromide Ag/AgCl | internal solution (1 mM KSCN) | PVC membrane | test solution | Ag/AgCl | KCl (sat.).	**MPM:** ClO_4^- −3.04; ClO_3^- −3.15; IO_4^- −4.34; IO_3^- −4.15; CN^- −3.42; NO_3^- −3.50; NO_2^- −4.00; F^- −4.00; Cl^- −4.09; Br^- − 3.70; I^- − 3.4; AcO^- −4.45; SO_4^{2-} −4.02; CO_3^{2-} −4.04	−58.7 mV/dec $5.7\cdot10^{-7}$ M 10^{-1} – 10^{-6} M	Potentiometric titration of SCN^- with $AgNO_3$ solution. Urine and saliva samples diluted 1:10 with water and adjusted to pH 5.0 with phosphoric acid and/or potassium hydroxide solution.	[41]
12−crown−4−ether−cetyltrimethyl ammonium thiocyanate ion−pair **(I-4)**	5% ionophore, 31% PVC, 64% DOP Ag/AgCl(s), 4 M KCl (sat.) with AgCl(s)/sample solution//membrane//graphite	**SSM:** IO_4^- −1.9; Cl^- −4.3; Br^- −4.2; I^- −4.1; SO_4^{2-} −3.9; SO_3^{2-} −3.7; CN^- −4.2; NO_2^- −4.1; NO_3^- −3.7; CrO_4^{2-} −4.6; ClO_4^- −3.7; MnO_4^- −4.5; PO_4^{3-} −4.6; CO_3^{2-} −3.9; BrO_3^- −3.1; AcO^- −3.8; $C_2O_4^{2-}$ −3.7; Sal −3.6	−57.6 mV/dec 0.03 $\mu g\cdot ml^{-1}$ 10^{-1} – 10^{-6} M	Monitoring sequential titration of some metal ions (e.g. Ag^+, Cu^+, Pb^{2+}).	[45]

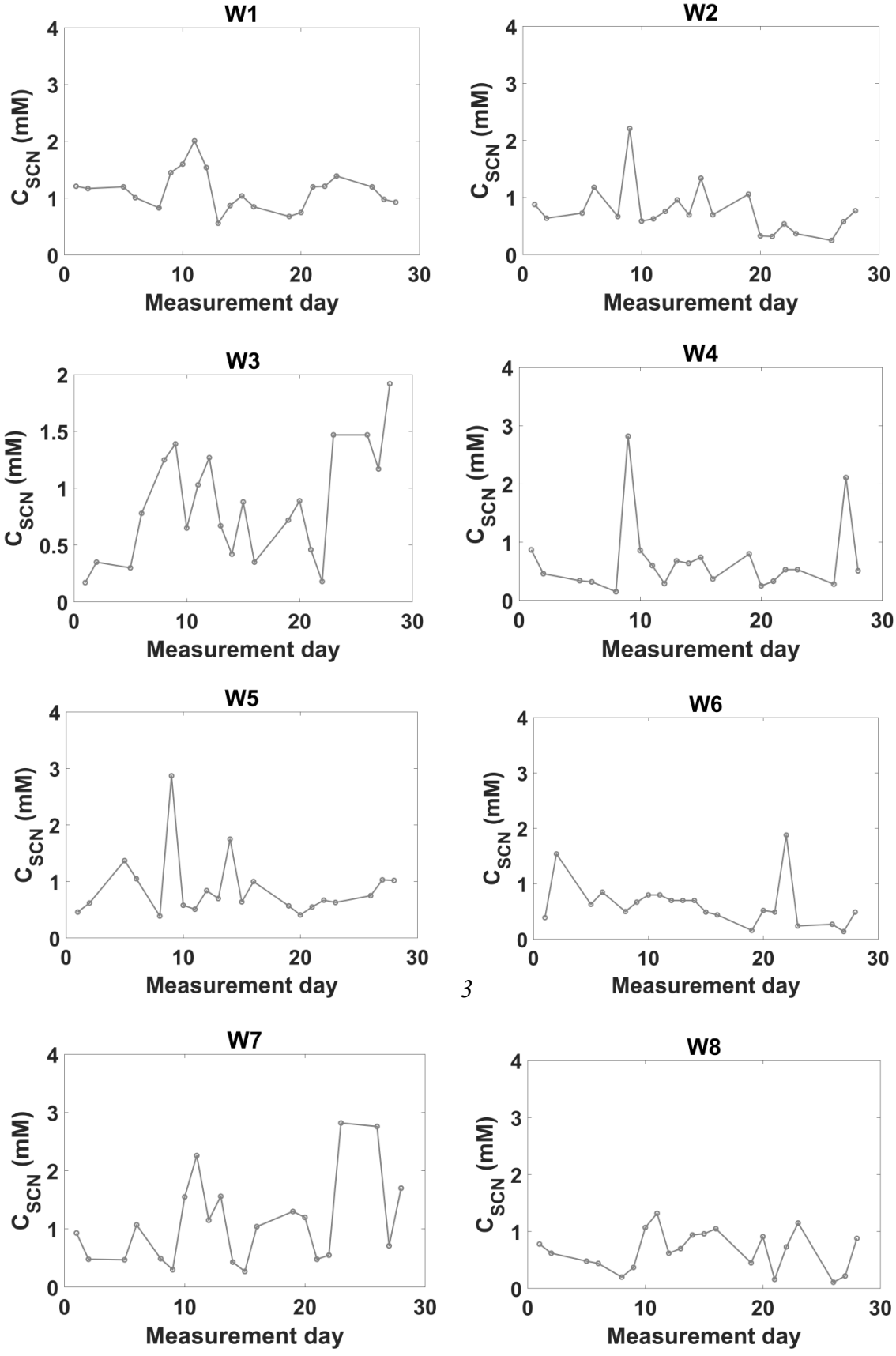
zinc−tris(*N*−*tert*−butyl−2−thioimidazolyl)hydroborate complex **(I-6)**	5% ionophore, 33% PVC, 33% DOP, 2% HTAB Ag/AgCl/KCl (sat.)/test solution/PVC membrane/10^{-2} M NaSCN/Hg/Hg_2Cl_2	**MPM:** ClO_4^- −4.2; CO_3^{2-} −4.7; Cl^- −4.4; MnO_4^- −4.0; Br^- −4.3; NO_3^- −2.8; I^- −3.6; SO_4^{2-} −4.3; NO_2^- −4.2; $S_2O_3^{2-}$ −3.4; CN^- −3.5; PO_4^{3-} −4.8; OAc^- −4.9; Sal −3.6; $H_2PO_4^-$ −4.6; $Cr_2O_7^{2-}$ −4.1; $Cr_2O_4^{2-}$ −4.8; F^- −4.2; ClO_3^- −3.8	−59.4 mV/dec $3.16 \cdot 10^{-7}$ M 10^{-2} – $6.3 \cdot 10^{-7}$ M	Urine, saliva, and serum samples treated by MES/NaOH buffer (pH 5.5) solution. River water samples.	[57]
Ni(II) complex of para−tolualdehydesemicarbazone **(I-6)**	4% ionophore, 31% PVC, 63% TBP, 2% HTAB Hg−Hg_2Cl_2 KCl (sat.) ‖ internal solution 0.1 mM KI ׀ PVC membrane ׀ test solution ׀ Hg_2Cl_2–Hg, KCl (sat.)	**MPM:** I^- −3.8; NO_3^- −4.3; Cl^- −4.0; HCO_3^- −4.7; SO_4^{2-} −4.6; Br^- −4.3; CrO_4^- −3.0; F^- −4.1; CO_3^{2-} −3.8; $S_2O_6^{2-}$ −3.2; $S_2O_3^{2-}$ −3.6	−58.8 mV/dec $1.25 \cdot 10^{-7}$ M 10^{-2} – 10^{-7} M	Urine samples diluted 1:10 with water and adjusted to pH 4.5 with phosphate buffer. Potentiometric titration of SCN^- with $AgNO_3$ solution.	[58]
[hydrotris(3−phenyl−5−methyl−1−pyrazolyl)borate](3−phenyl−5−methyl−pyrazole) nickel chloride **(I-6)**	7% ionophore, 2% HTAB, 60% DBP, 31% PVC Hg,Hg_2Cl_2 ׀KCl(satd.)׀0.01M ‖PVCmembrane‖ test solution׀ Hg,Hg_2Cl_2׀KCl(sat.)	**MPM:** ClO_4^- −2.27; N_3^- −6.21; Cl^- −4.64; Br^- −4.44; CN^- −1.15; NO_2^- −3.92; NO_3^- −3.72; AcO^- −3.08; $H_2PO_4^-$ −2.48; CO_3^{2-} −3.24; SO_4^{2-} −4.61; OH^- −3.5	−58.8 mV/dec $1.8 \cdot 10^{-7}$ M 10^{-2} – $5.3 \cdot 10^{-7}$ M	Urine and saliva samples treated by MES/NaOH buffer (pH 5.5) solution. River water samples, pH adjusted to 5.5 with HCl.	[59]
Cobalt (Salpen) (PBu_3)] $ClO_4 \cdot H2O$ (Salpen = bis(salycil aldehyde)propylene diamine) **(I-6)**	2% ionophore, 2% MTOAC, 65.5% DOP, 30.7% PVC Hg/Hg_2Cl_2/KCl (sat.) ‖ test solution ׀ PVC membrane ׀ graphite electrode	**SSM:** ClO_4^- −0.89; Cl^- −3.90; Br^- −3.65; F^- −4.00; I^- −1.21; N_3^- −3.47; CN^- −3.40; NO_2^- −2.33; AcO^- −3.70; $C_2O_4^{2-}$ −2.98; ClO_3^- −1.98; NO_3^- −2.70; CrO_4^{2-} −3.37; IO_3^- −3.62; Imidazol −4.28	−59.05 mV/dec $8 \cdot 10^{-7}$ M 10^{-1} –10^{-6} M	Urine and saliva samples diluted 1:10 with water and adjusted to pH 5.2 with HNO_3 or KOH solution.	[60]

		MPM: ClO_4^- −0.81; Cl^- −3.82; Br^- −3.59; F^- −3.96; I^- −1.16; N_3^- −3.39; CN^- −3.36; NO_2^- −2.30; AcO^- −3.67; $C_2O_4^{2-}$ −2.92; ClO_3^- −1.90; NO_3^- −2.66; CrO_4^{2-} −3.23; IO_3^- −3.56; Imidazol −4.20		Laboratory wastewater samples (pH adjusted to 5.2 with HNO_3).	
manganese complex of N,N′−bis−(4−phenylazosalicylidene)-o-phenylene diamine **(I-6)**	4% ionophore, 66% DBP, 30% PVC Pt/electro−conductive polymer/PVC film with an ionophore	**SSM:** $SCN^- > CrO_4^{2-} > I^- > ClO_4^- > Cr_2O_7^{2-} > ClO_3^- > S^{2-} > SO_3^{2-} > Br^- > NO_3^- > NO_2^- > S_2O_3^{2-} > SO_4^{2-} = AcO^- > IO_3^- > Cl^- > CN^-$	−58.1 mV LOD: nd 10^{-1} –$10^{-5.8}$ M	Potentiometric titration of SCN^- with $AgNO_3$ solution. Artificial serum.	[61]
bis(N−3−methylphenyl salicylidenaminato)copper(II) **(I-6)**	3% ionophore, 31% PVC, 63% DBP, 3% HTAB Ag, AgCl, KCl (3 M) ׀ internal solution, KSCN (1mM) ׀ membrane ׀ test solution ׀ KCl (3 M) AgCl, Ag	**FIM:** CN^- −3.0; Cl^- −3.3; CO_3^{2-} −3.8; SO_4^{2-} −3.7	−59.3 mV/dec $5.0 \cdot 10^{-7}$ M 10^{-1} – 10^{-6} M	Potentiometric titration of SCN^- with $AgNO_3$ solution. Urine and saliva samples diluted 1:10 with water and adjusted to pH 5.0 with phosphoric acid and/or potassium hydroxide solution.	[62]
Cu(II) sulfadimidine complexes (CuSD) **(I-6)**	7%CuSD; 2.5% CPC; 53% 2−NPOE; 37.5% C Ag//AgCl, KCl(3M) // test solution// filling graphite modified paste//carbon paste electrode	**MPM:** Cl^- −3.06; Br^- −2.51; NO_3^- −2.38; NO_2^- −2.91; SO_4^{2-} −2.69; I^- −0.44; F^-−3.77; SO_3^{2-} −-3.06; ClO_4^- −0.36; CO_3^{2-}−2.00; HCO_3^- −2.20 CH_3COO^- −2.00 **SSM:** Cl^- −1.36; Br^- −1.06; NO_3^- −1.52; NO_2^- −2.01;	−60.6 mV/dec $6.9 \cdot 10^{-7}$ M $1.17 \cdot 10^{-2}$ – $1.82 \cdot 10^{-6}$ M	Thiocyanate content in waste water collected from granite factory. Potentiometric titration of SCN^- with $AgNO_3$ solution;	[63]

		SO_4^{2-} −4.71; I^- −0.71; F^-−1.86; SO_3^{2-} −4.62; ClO_4^- −0.63; CO_3^{2-} −0.22; HCO_3^- +0.26; CH_3COO^- +0.27		Urine samples diluted 1:10 and adjusted to pH 5.59.	
5,10,15,20-tetraphenylporphine iron(III) chloride **(I-1)**	1% ionophore, 65.5% *o*-NPOE, 32.7% PVC, 0.8% CTAB Electronic tongue: 5 membrane-coated graphite electrodes in array	**Measured in the array FIM:** Cl^- −3.64; Br^- −3.55; NO_3^- <−5.00; SO_4^{2-} <−5.00; I^- −3.11; F^- −4.23; S^{2-} −3.22; CO_3^{2-} −3.13; HPO_4^{2-} −4.13; CH_3COO^- −3.92; N_3^- −3.25; CN^- −1.73	No data	Synthetic solution with and without the presence of interfering ions.	[38]
Bis nitrato [4−hydroxyacetophenonesemicarbazone) nickel(II) complex **(I-6)**	31% PVC, 63% 2−NPOE, 4.0% ionophore and 2.0% trioctylmethyl ammonium chloride Hg/Hg_2Cl_2(s) ׀ KCl(sat.)׀internal solution 0.1 mM KSCN ׀ ׀ PVC membrane ׀ test solution׀ Hg/Hg_2Cl_2(s) ׀ KCl(sat.)׀	**MPM:** SO_4^{2-} −1.9; NO_3^- −2.8; $Cr_2O_7^{2-}$ −4.4; PO_4^{3-} −3.6; CO_3^{2-} −4.2; Br^- −3.8; $C_2O_4^{2-}$ −2.6; AcO^- −2.9; Cl^- −2.4; I^- −1.1; NO_2^- −2.1	−59.4 mV/dec $8.6 \cdot 10^{-8}$ M 10^{-1} – 10^{-7} M	Urine samples diluted 1:10 with water and adjusted to pH 5.0 with phosphoric acid and/or potassium hydroxide solution. Titration. Determination of SCN^- in river and tap water.	[64]

Table S2. Comparison of mean concentrations of SCN^- in the relation of answers given in the survey.

Parameter		N	SCN- (mM)	
			$\bar{x}$	SD
Sex	Women	68	0.85	0.58
	Men	32	0.85	0.56
Drugs	Yes	69	0.80	0.52
	No	31	0.97	0.67
	Supplements	35	0.78	0.53
	Antibiotics	7	0.74	0.45
	OTC	38	0.83	0.55
	Steroids	6	0.87	0.45
	Hormonal drugs	5	0.66	0.35
	Contraceptive	11	0.88	0.59
	Other	15	0.78	0.54
Fluids	Water	43	0.84	0.57
	Tea	29	0.81	0.57
	Coffee	16	0.78	0.51
	Juice	9	1.17	0.59
	Drink	3	1.00	0.28
	1 L	12	1.09	0.72
	2 L	40	0.82	0.50
	2.5 L	40	0.82	0.59
	More than 3 L	8	0.90	0.24
Contraceptive	Yes	13	0.87	0.59
	No	55	0.86	0.59
Chronical diseases	Yes	30	0.79	0.51
	No	70	0.87	0.59
	Renal	1	1.02	---
	Cardiovascular	3	0.86	0.53
	Hematological	3	0.88	0.26
	Pulmonary	6	0.69	0.54
	Allergies	7	0.70	0.54
	Other	10	0.88	0.41
Brushing teeth	Today morning	95	0.86	0.58
	Yesterday evening	4	0.58	0.42
	Earlier than yesterday	1	0.85	---
Frame of mind	Good	32	0.91	0.64
	Fatigue	53	0.82	0.49
	Infection	4	0.68	0.43
	Chronic desease	11	0.75	0.55
Oral hygiene liquid	Yes	27	0.83	0.65
	No	73	0.85	0.55



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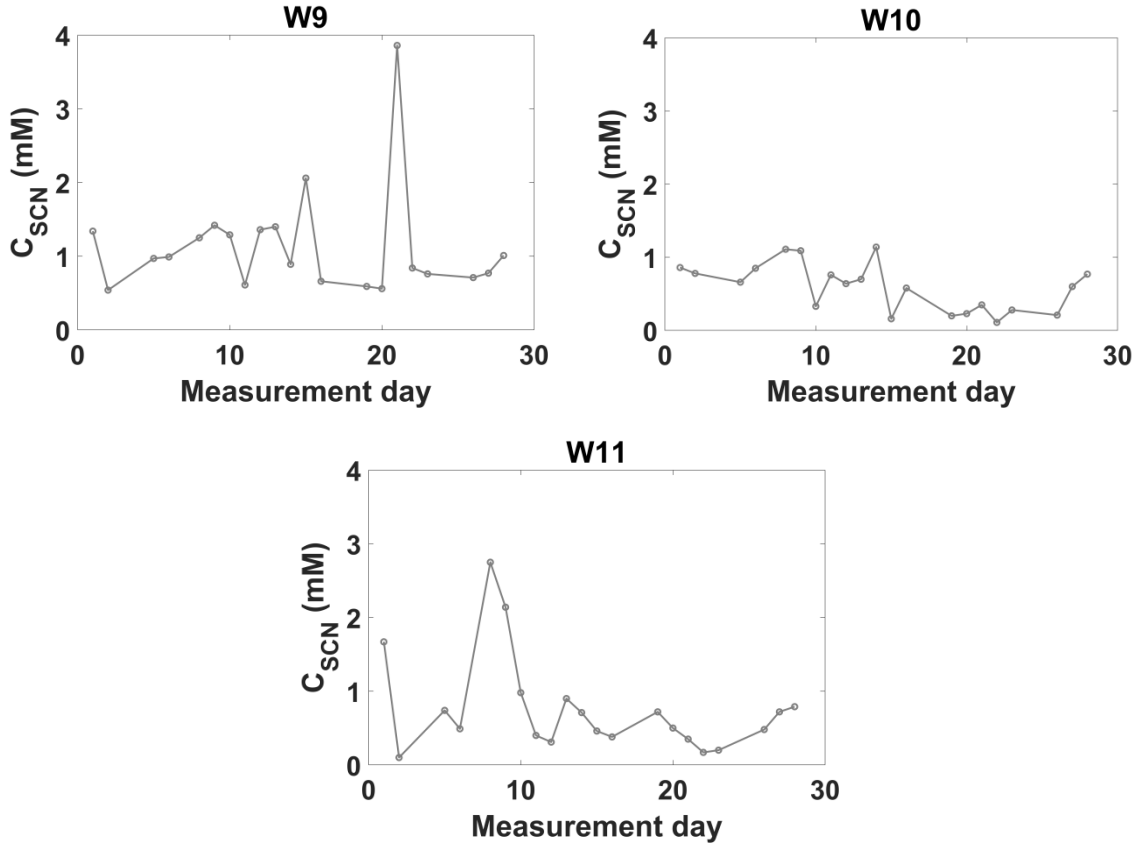
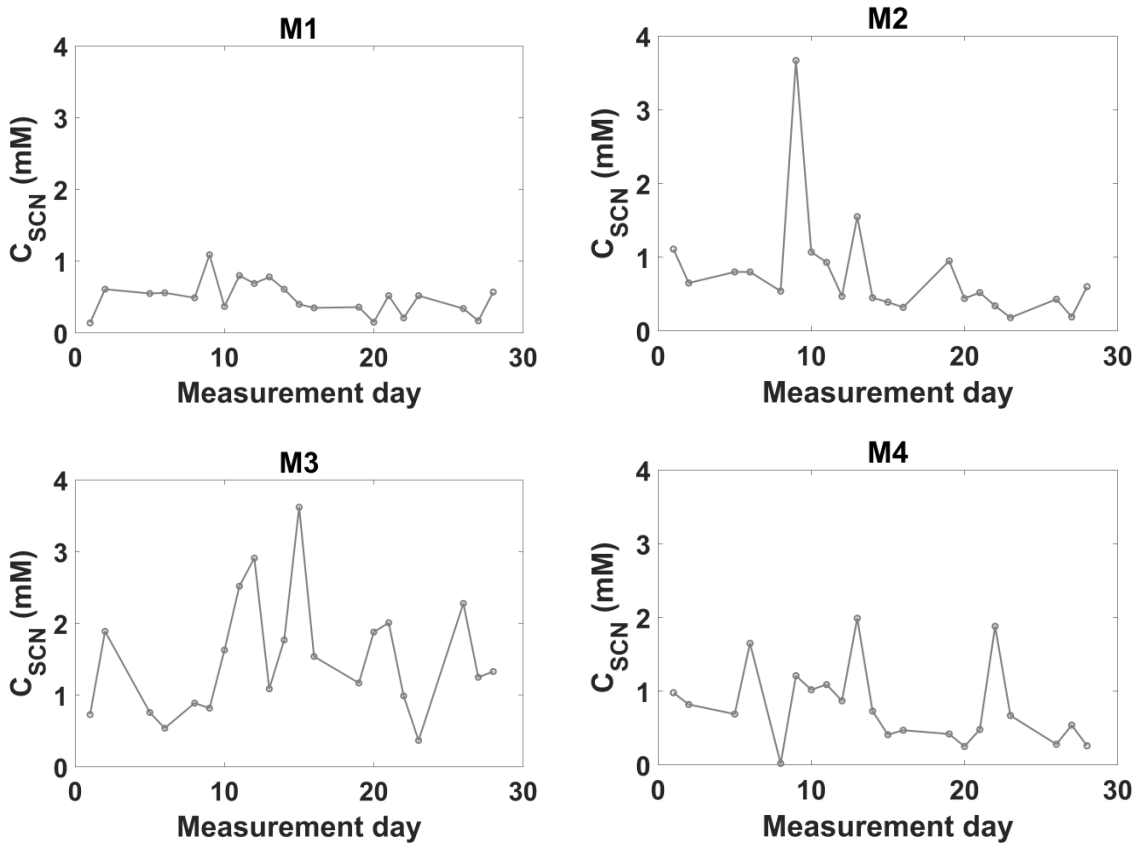


Figure S1. Monthly ionograms showing fluctuations of SCN- concentration for selected women.



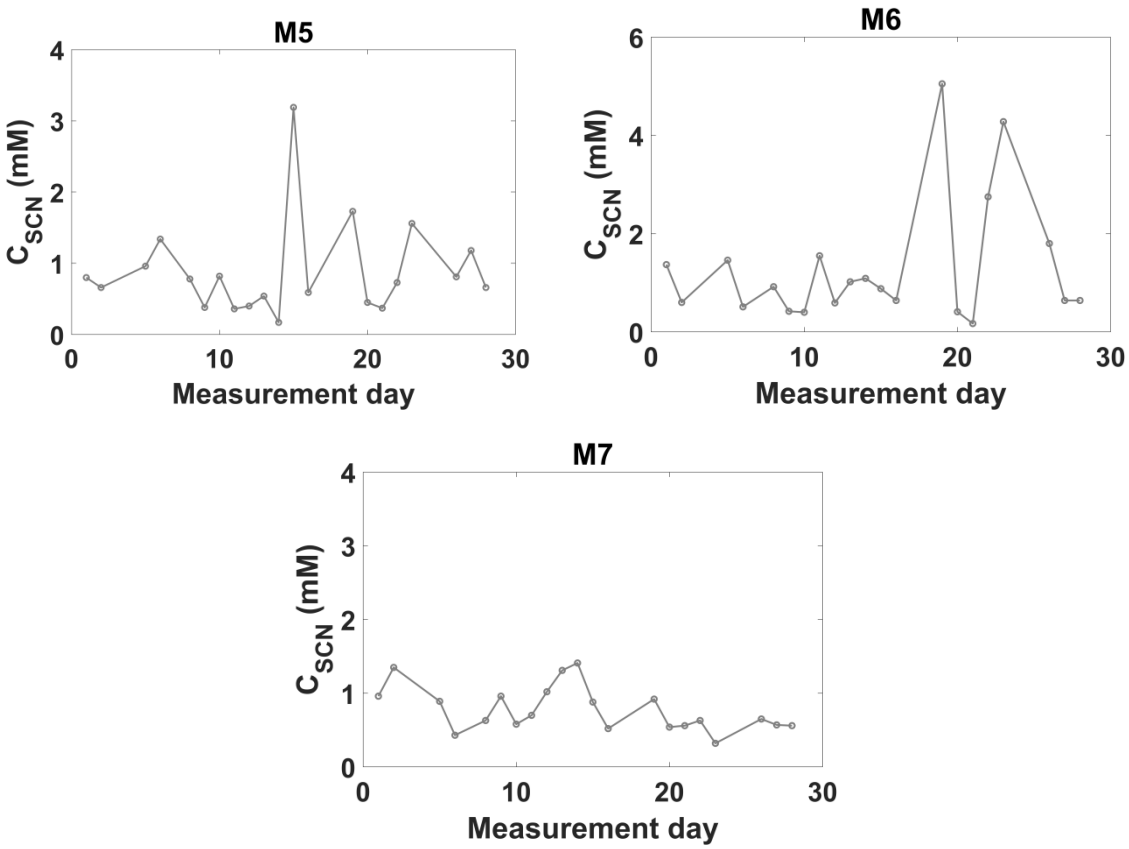


Figure S2. Monthly ionograms showing fluctuations of SCN- concentration for selected men.