

Supplementary information

Flexible, low volume detection of chronobiology biomarkers from human sweat

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1. Porosity details for Polyamide membrane

Pore size	200 nm
Thickness	110 μm
Bubble point (bar)	4.2

2. Formulae:
- a. Ratio of change in response = $\frac{(\text{dose impedance} - \text{baseline impedance})}{\text{baseline impedance}}$
- b. Percentage change in response = $\frac{(\text{dose impedance} - \text{baseline impedance})}{\text{baseline impedance}} * 100$

3. Ionic strength stability

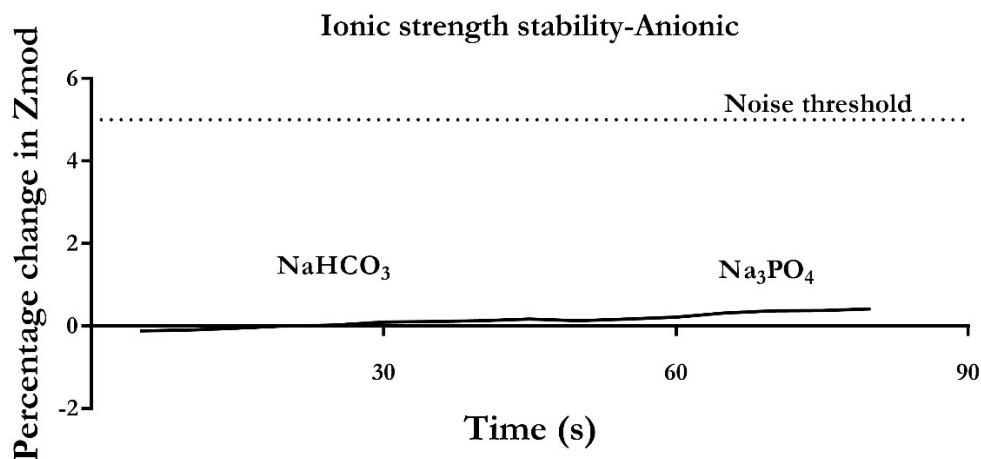


Figure S1: Stability of electrode using different Anionic solutions

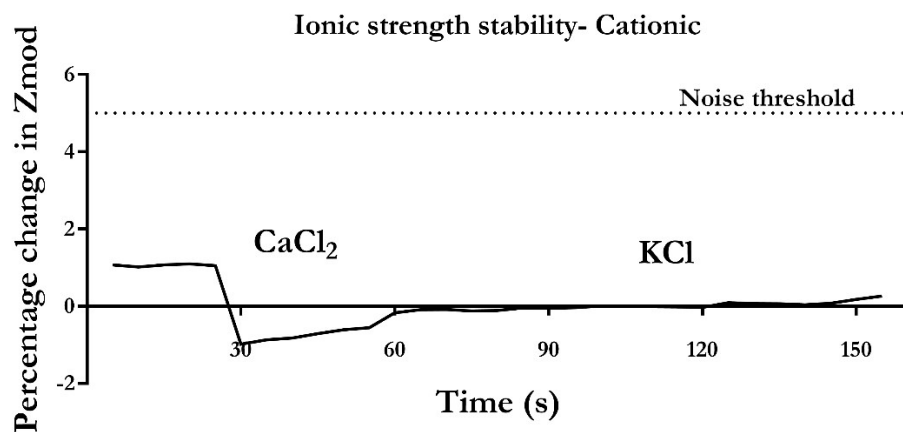


Figure S2 : Stability of electrode using different Cationic solutions

4. Raw Impedance values for DHEA

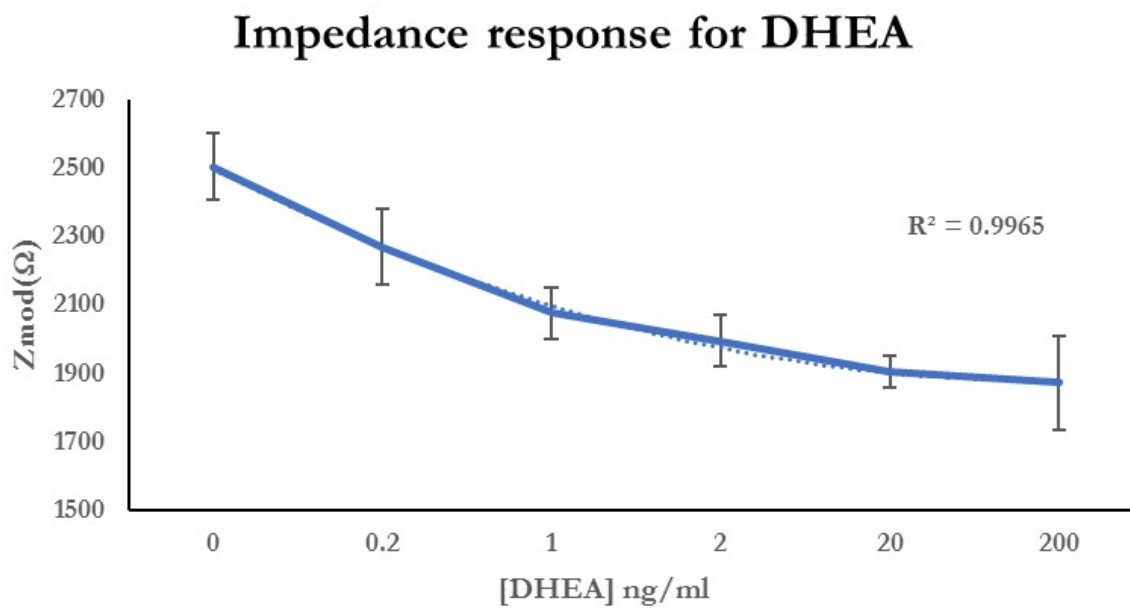


Figure S3: Impedance response for DHEA

5. Raw Impedance value for cortisol

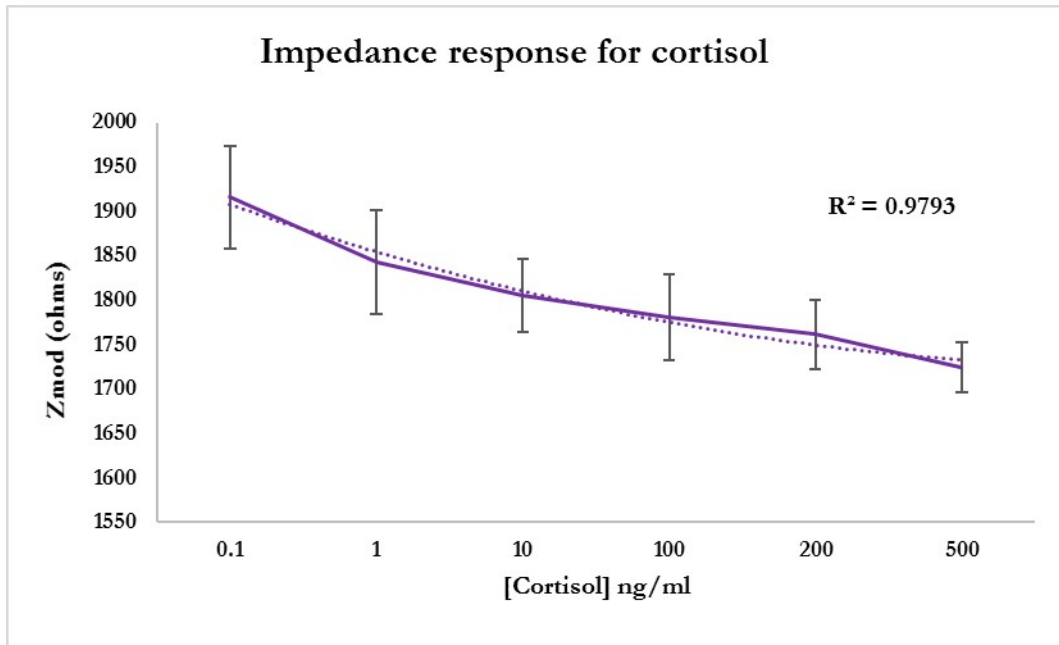


Figure S4: Impedance response for cortisol

6. Response for Cortisol in Human sweat

CDR for cortisol in Human sweat

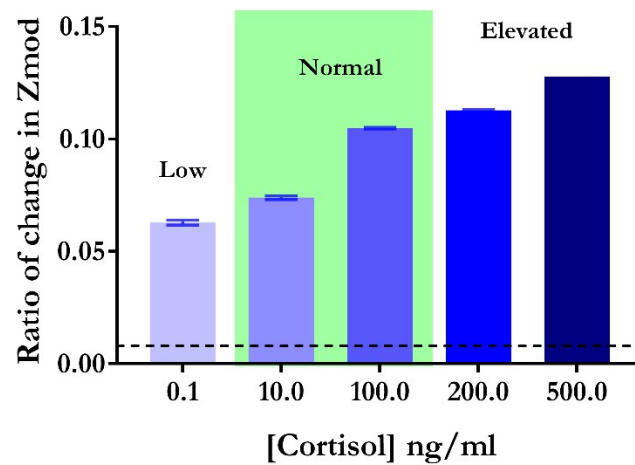


Figure S5: Calibrated dose response for cortisol in Human sweat, $R^2 > 0.95$

7. Similac infant formula constituents

Nonfat Milk, Lactose, Whey Protein Concentrate, High Oleic Safflower Oil, Soy Oil, Coconut Oil, Galactooligosaccharides. Less than 2% of: C. Cohnii Oil, M. Alpina Oil, Beta-Carotene, Lutein, Lycopene, Potassium Citrate, Calcium Carbonate, Ascorbic Acid, Soy Lecithin, Potassium Chloride, Magnesium Chloride, Ferrous Sulfate, Choline Bitartrate, Choline Chloride, Ascorbyl Palmitate, Salt, Taurine, m-Inositol, Zinc Sulfate, Mixed Tocopherols, d-Alpha-Tocopheryl Acetate, Niacinamide, Calcium Pantothenate, L-Carnitine, Vitamin A Palmitate, Cupric Sulfate, Thiamine Chloride Hydrochloride, Riboflavin, Pyridoxine Hydrochloride, Folic Acid, Manganese Sulfate, Phylloquinone, Biotin, Sodium Selenate, Vitamin D3, Cyanocobalamin, Calcium Phosphate, Potassium Phosphate, Potassium Hydroxide, and Nucleotides (Adenosine 5'-Monophosphate, Cytidine 5'-Monophosphate, Disodium Guanosine 5'-Monophosphate, Disodium Uridine 5'-Monophosphate).

Similac vitamins

Vitamin A	300 IU
Vitamin D	75 IU
Vitamin E	1.5 IU
Vitamin K	8 mcg
Thiamin (MT. B1)	100 mcg
Riboflavin (Mt. B2)	150 mcg
Vitamin B6	60 mcg
Vitamin B12	0.25 mcg
Niacin	1050 mcg
Folic Acid	15 mcg
Pantothenic Acid	450 mcg
Biotin	4.4 mcg
Vitamin C (Ascorbic Acid)	9 mg
Choline	16 mg
Inositol	4.7 mg

Similac minerals

Calcium	78 mg
Phosphorus	42 mg
Magnesium	6 mg
Iron	1.8 mg
Zinc	0.75 mg
Manganese	5 mcg
Copper	90 mcg
Iodine	6 mcg
Selenium	2 mcg
Sodium	24 mg
Potassium	105 mg
Chlorine	65 mg

8. Nyquist and Bode plots for analytical curves

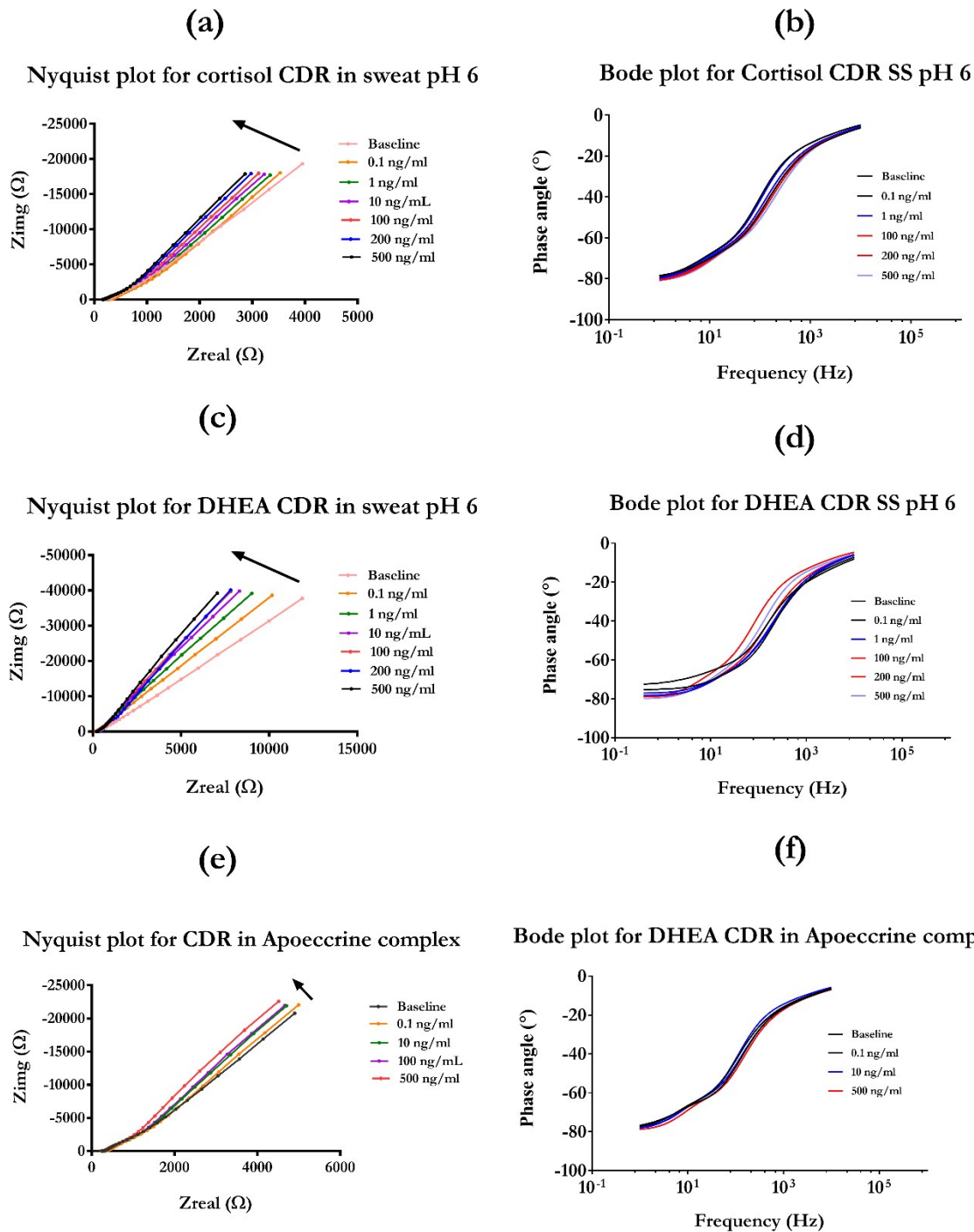


Figure S6: Nyquist and Bode phase plots for EIS analytical data