

VITATOX 2021

Tajemství lidské moči

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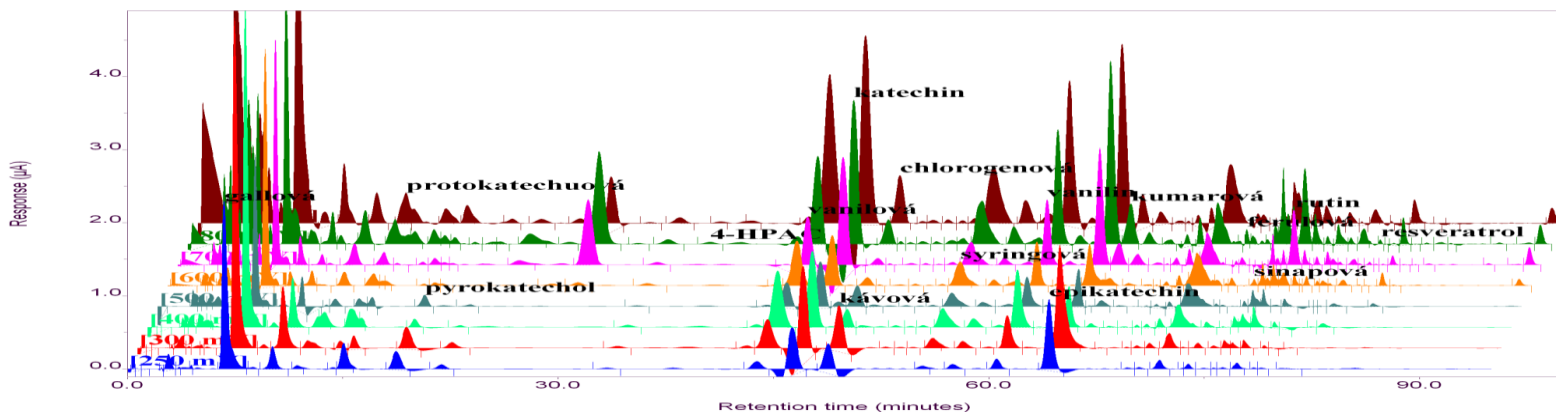
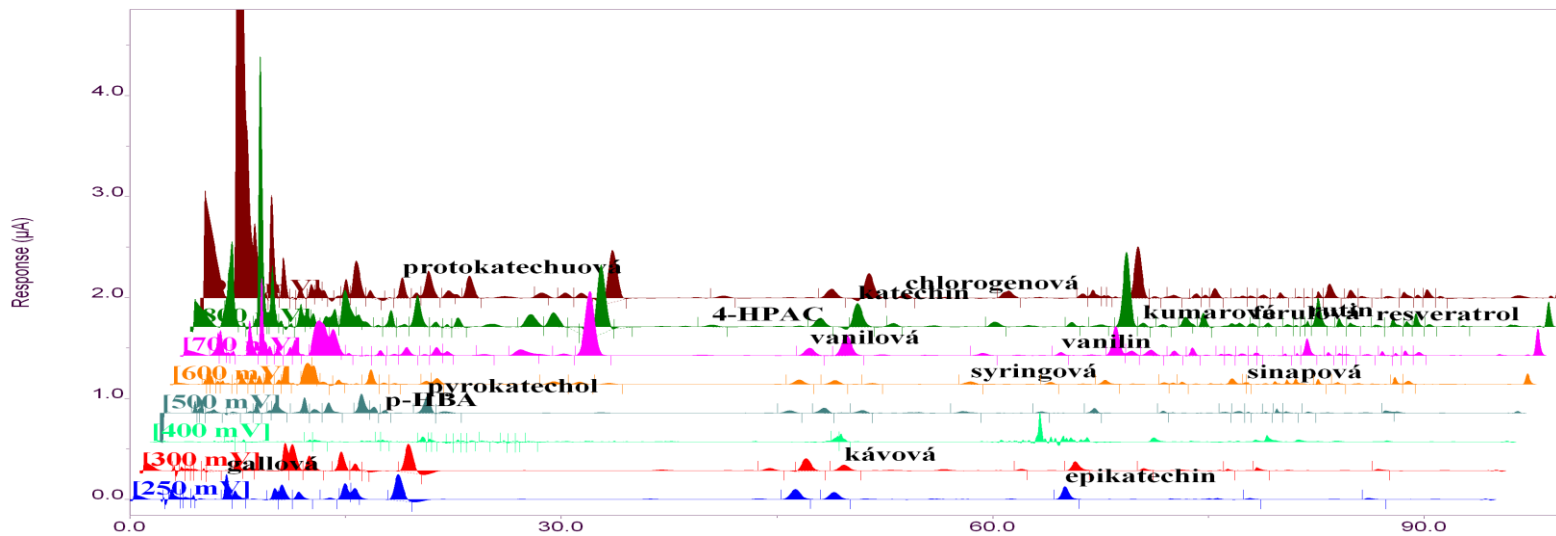
Lidská moč

- Odpad nebo chemický vzkaz o zdraví, kráse, kondici, majetku, počurejte si písek
- Ochranný prostředek vnitřních dutin těla, desinfekce, chemická závora před viry a bakteriemi
- Kde ústí močová trubice a..... Proč?
- Staroegyptské nápisy
- Celostní chápání moči - antioxidační aktivita a její diagnostické využití
-
- Wikipedia ,Labrulez

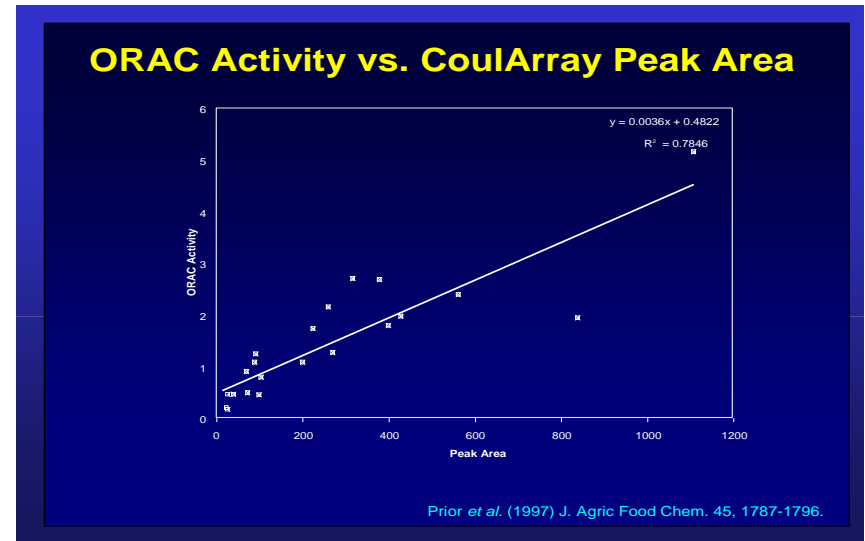
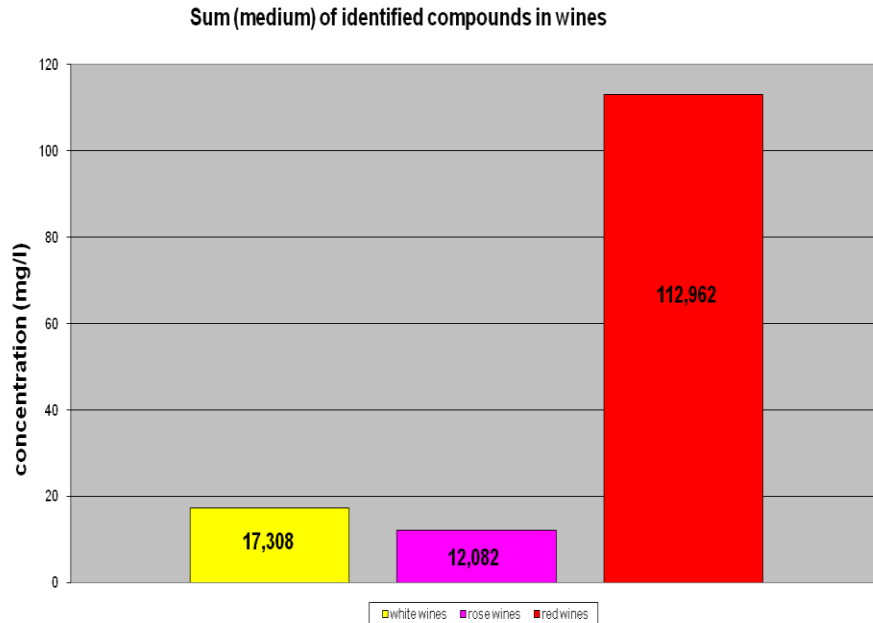
Electrochemical detection in HPLC

Prof. Pavel Jandera and CouloChem II in 1997

- Vliv pití piva Doktor na profil elektroaktivních látek v moči
- CoulArray- up to 4 series connected electrochemical cells (ESA, Inc., Chelmsford, USA)
- The CoulArray detector is compatible with HPLC gradient elution
- The sample does not need to be specially treated before analysis, for example, when determining the antioxidant activity of electroactive substances in wine, beer, or other beverages, the sample is diluted with MF only and filtered prior to injection
- Jandera P., Škeříková V., Řehová L., Hájek T., Baldriánová L., Škopová G., Kellner V., Horna A.:
- **RP-HPLC analysis of phenolic compounds and flavonoids in beverages and plant extracts using a CoulArray detector. Journal of Separation Science. 2005, 28(9-10), 1005-1022.**



Estimation of the Overall Antioxidant Capacity



Guo *et al.*, J. Agric. Food Chem., 1997,45, 1787

A relationship between the sum of peak areas of a chromatogram of a plant and the antioxidant capacity of this extract

Electrochemical detection in HPLC

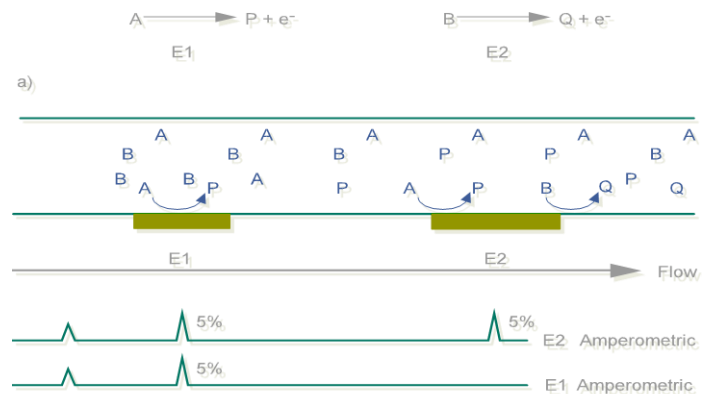
Elektrochemická detekce ECD versus UV a MS

- UV – okukování molekuly – jaká je ?
- MS – fackování molekuly - - rozbívím a z fragmentů – jaká asi byla
- ECD – hlazení a dotýkání se molekuly na intimních místech – jak reaguje

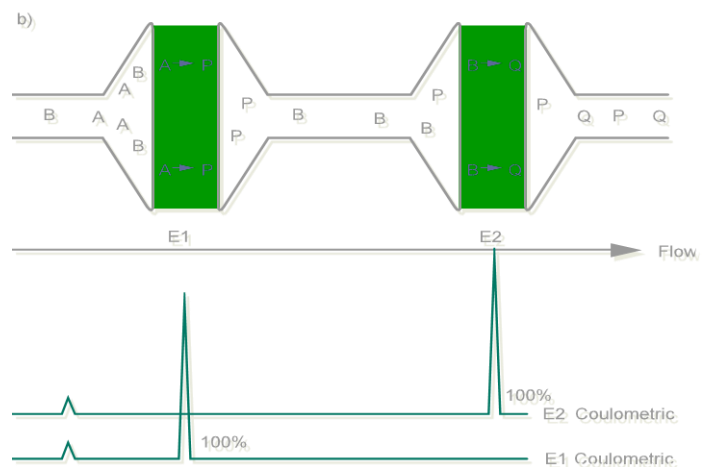
ECD je sexy . ECD and God are both mysterious.

Umění ECD je jako umění milovat. Je nebezpečné dotýkat se ...hvězd, žen

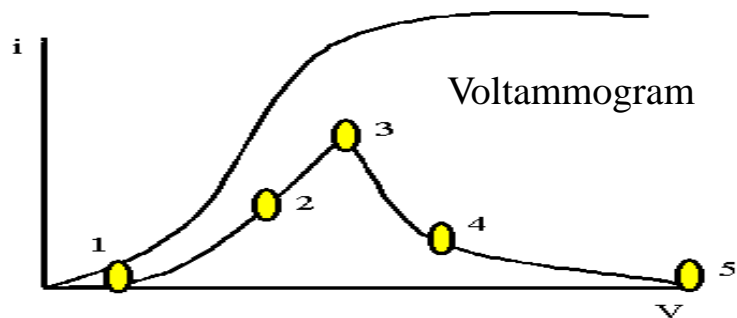
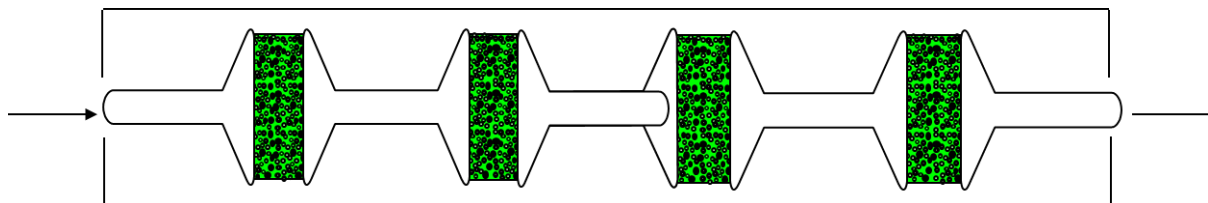
a) Lack Of Selectivity And Sensitivity With Dual Amperometric Electrodes



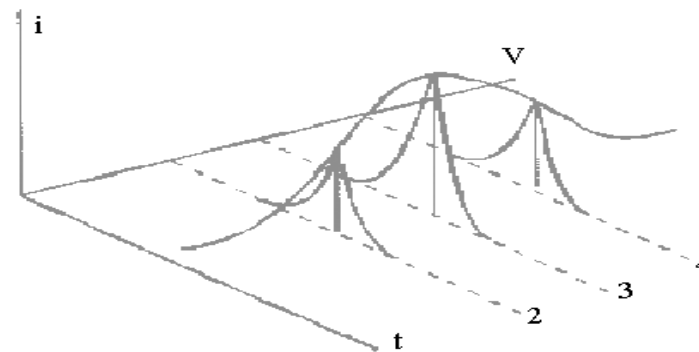
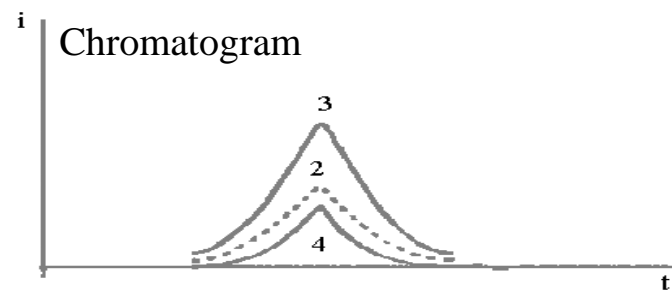
b) Dual Coulometric Electrodes Are Selective And Sensitive



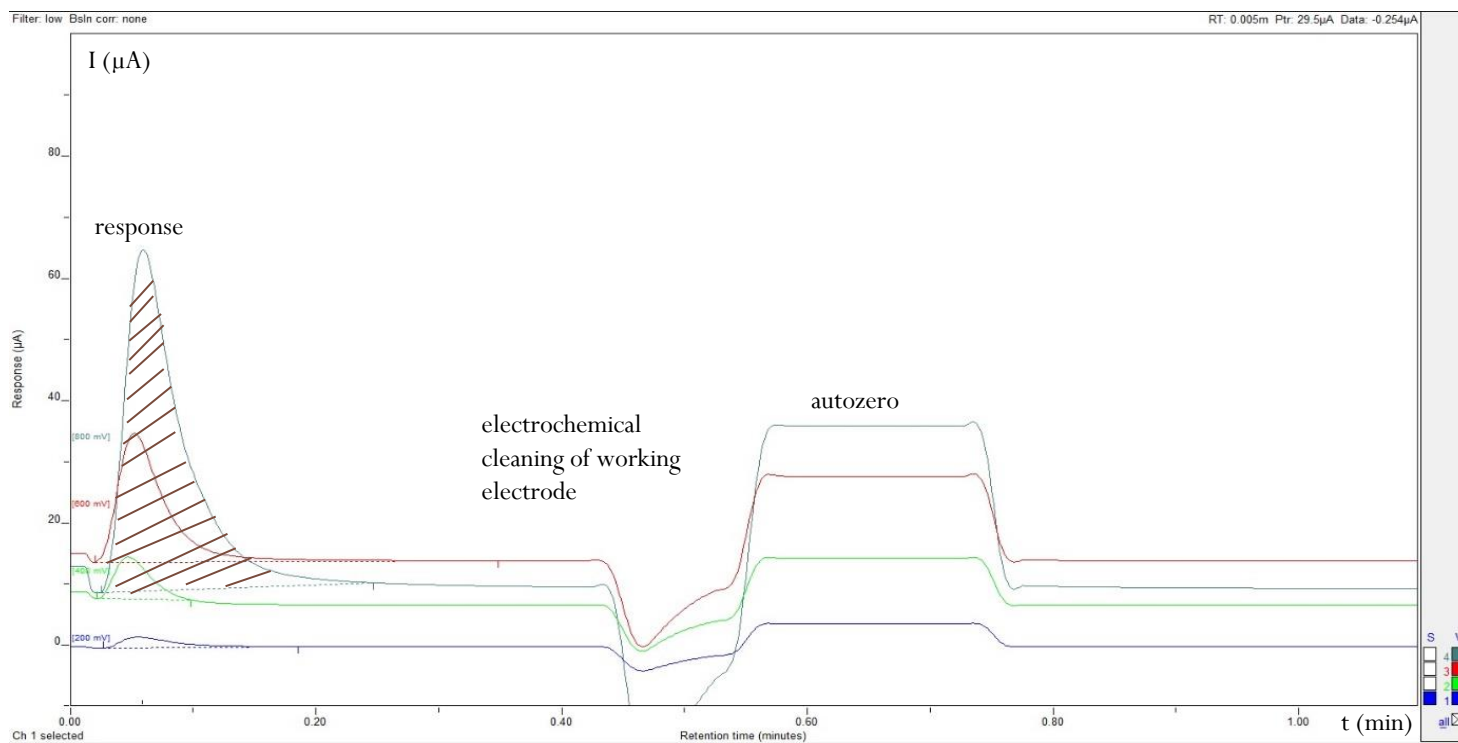
Electrode array



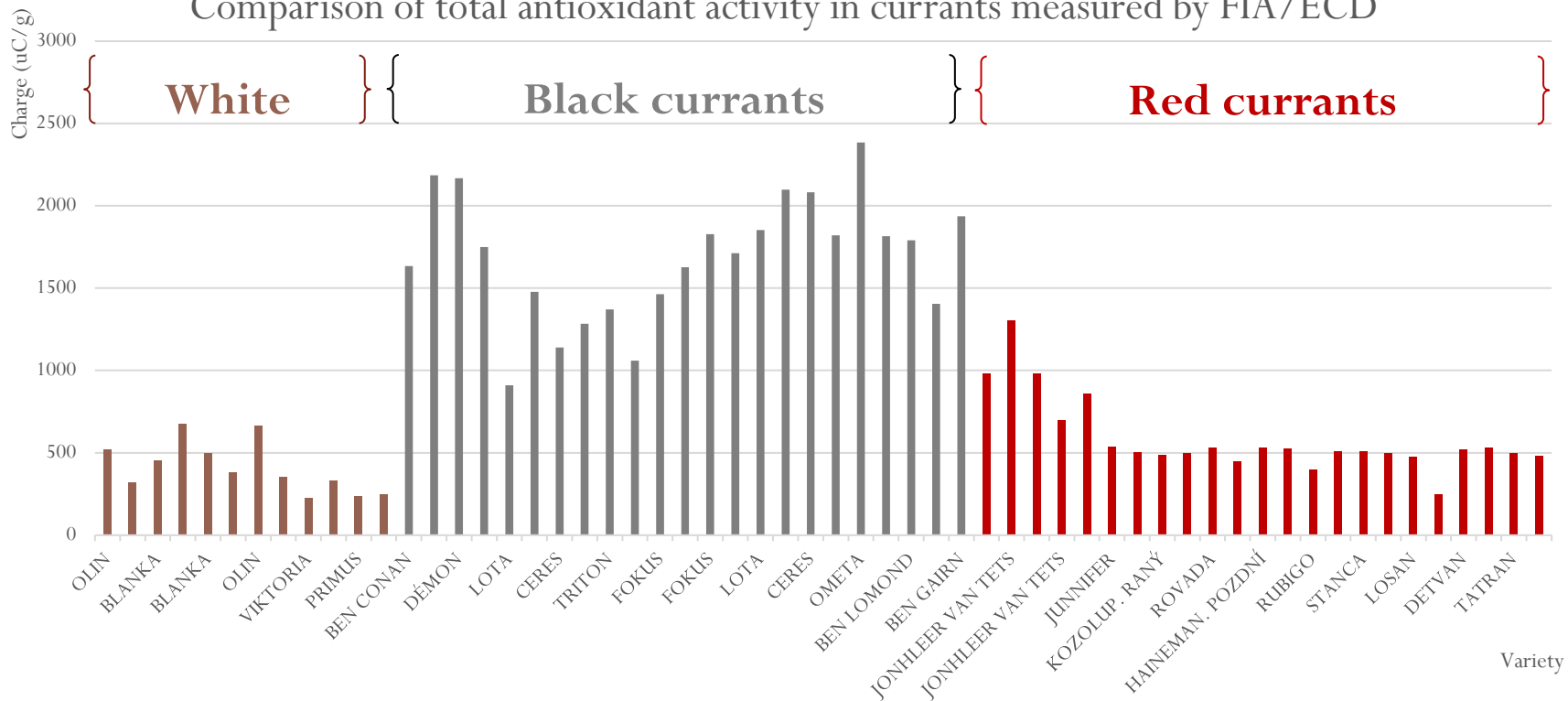
- 2: Pre-dominant
- 3: Dominant
- 4: Post-dominant peaks



- Automatic peak integration, electrochemical cleaning, autozero
- Total charge as a sum of charges at 200,400,600, 800 mV

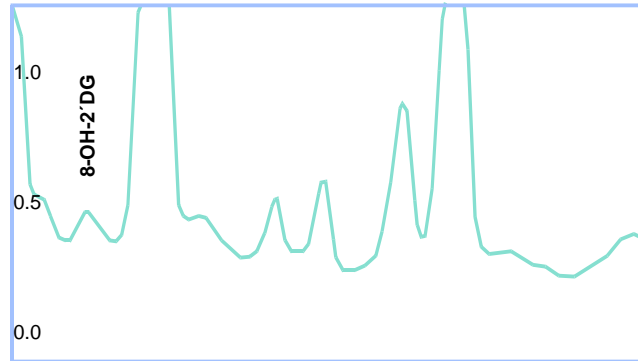


Comparison of total antioxidant activity in currants measured by FIA/ECD

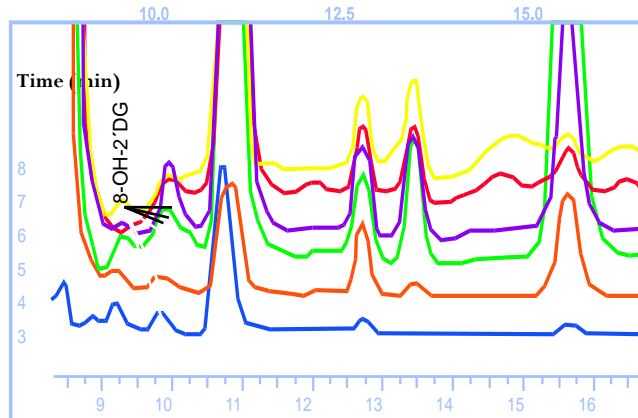


8-OH2'dG In Urine

What appears to be a single 8OH2'dG peak by conventional HPLC-ECD is actually found to be a co-elution of several metabolites by CoulArray detection!

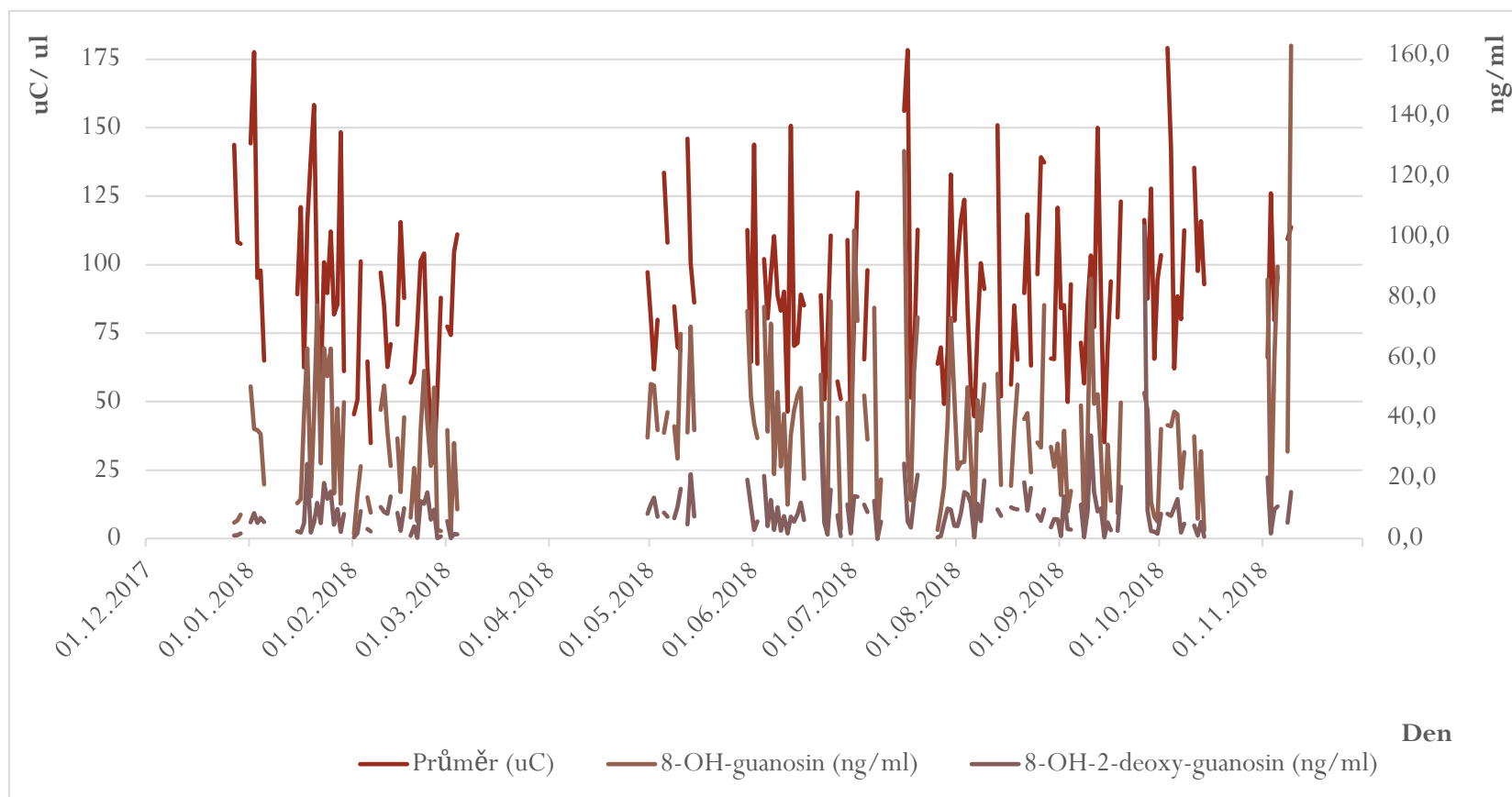


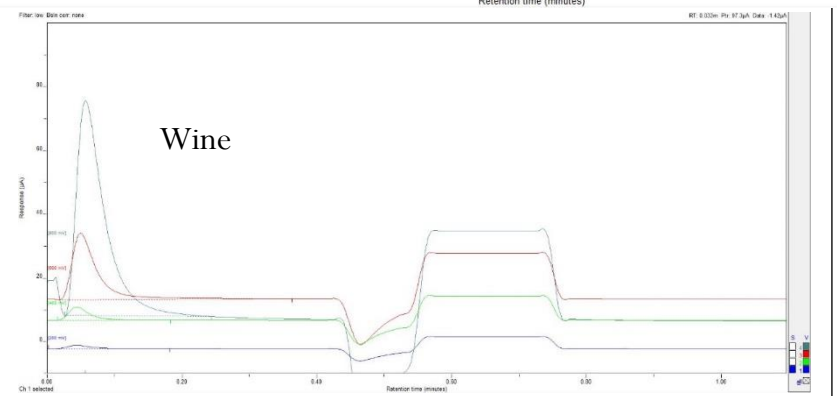
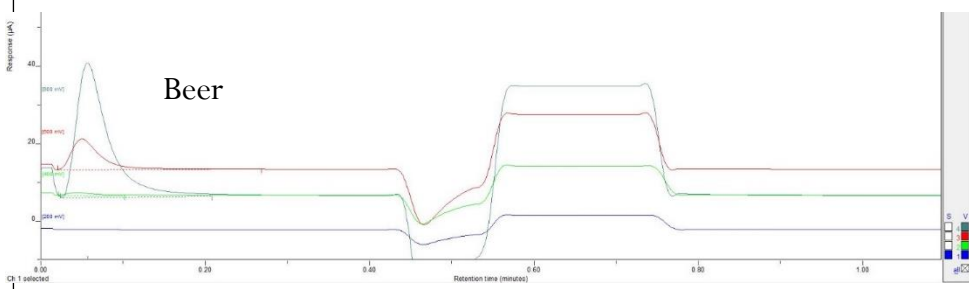
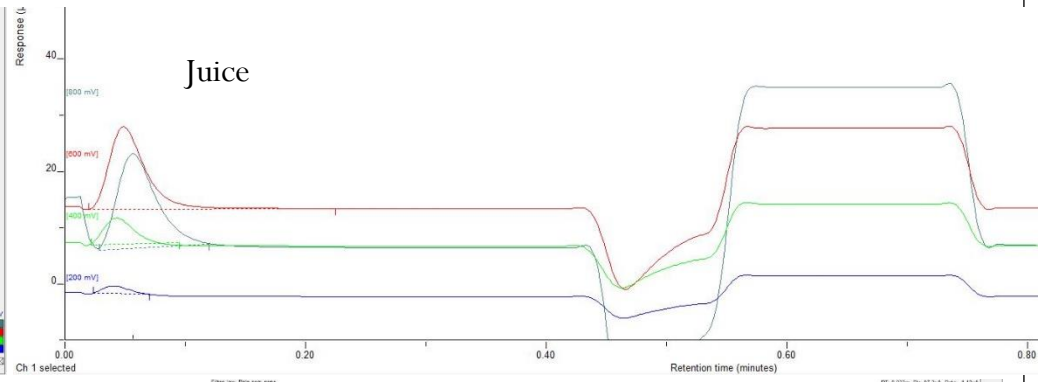
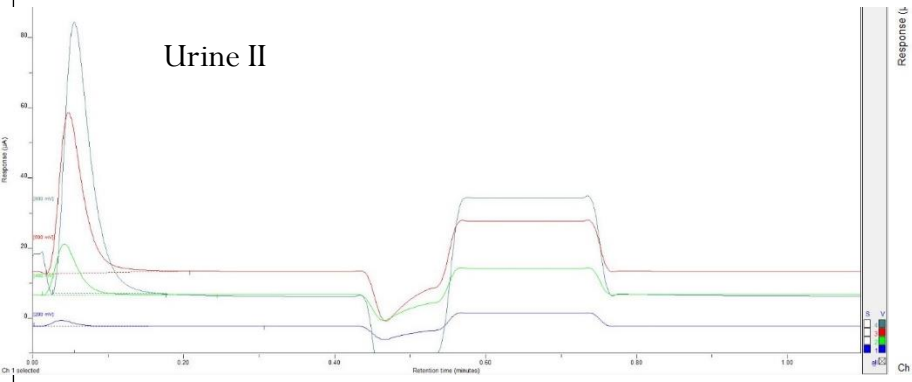
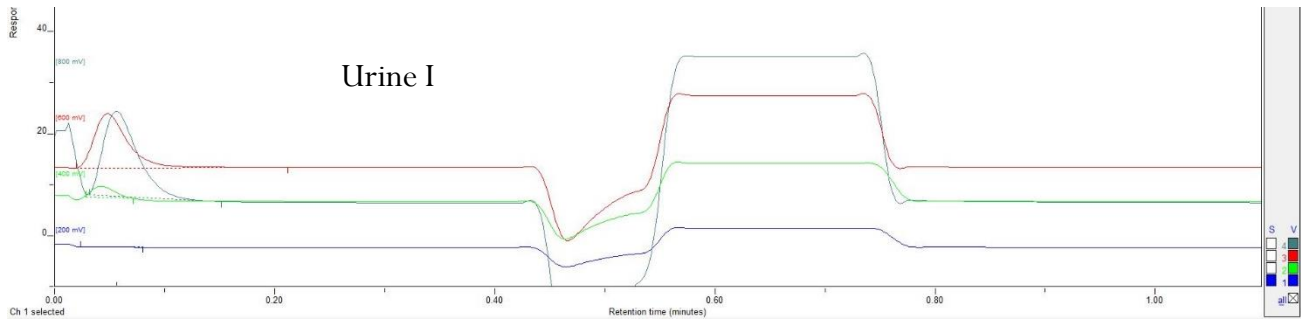
Conventional



CoulArray

BIOMARKERS – CORRELATION FIA/ECD AND UPLC-MS/MS





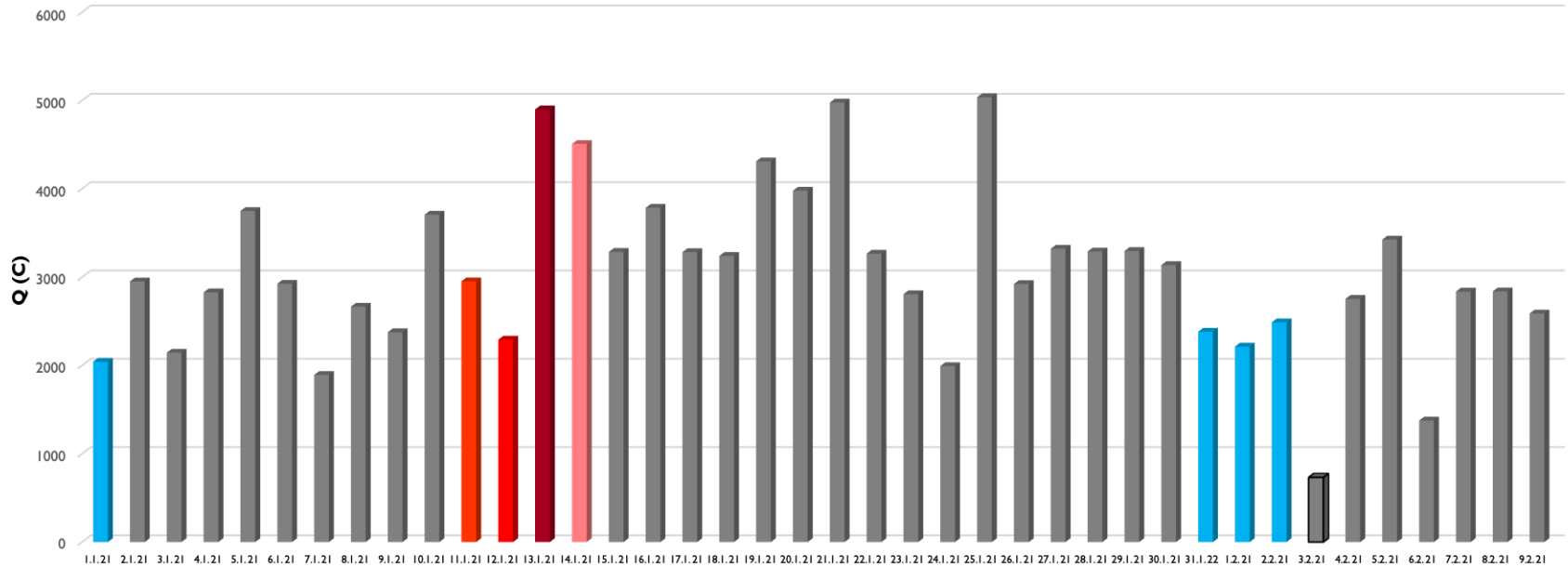
Objective

- Evaluation of antioxidant activity of the urine in relation with diet

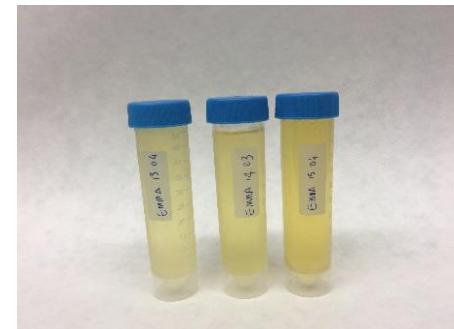
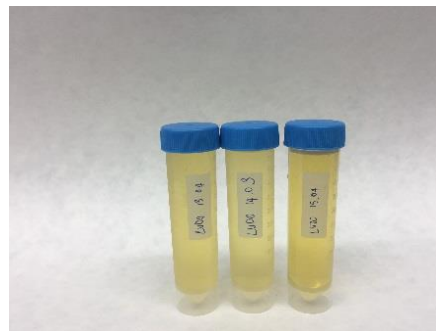
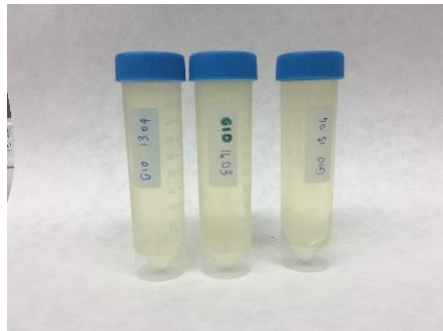


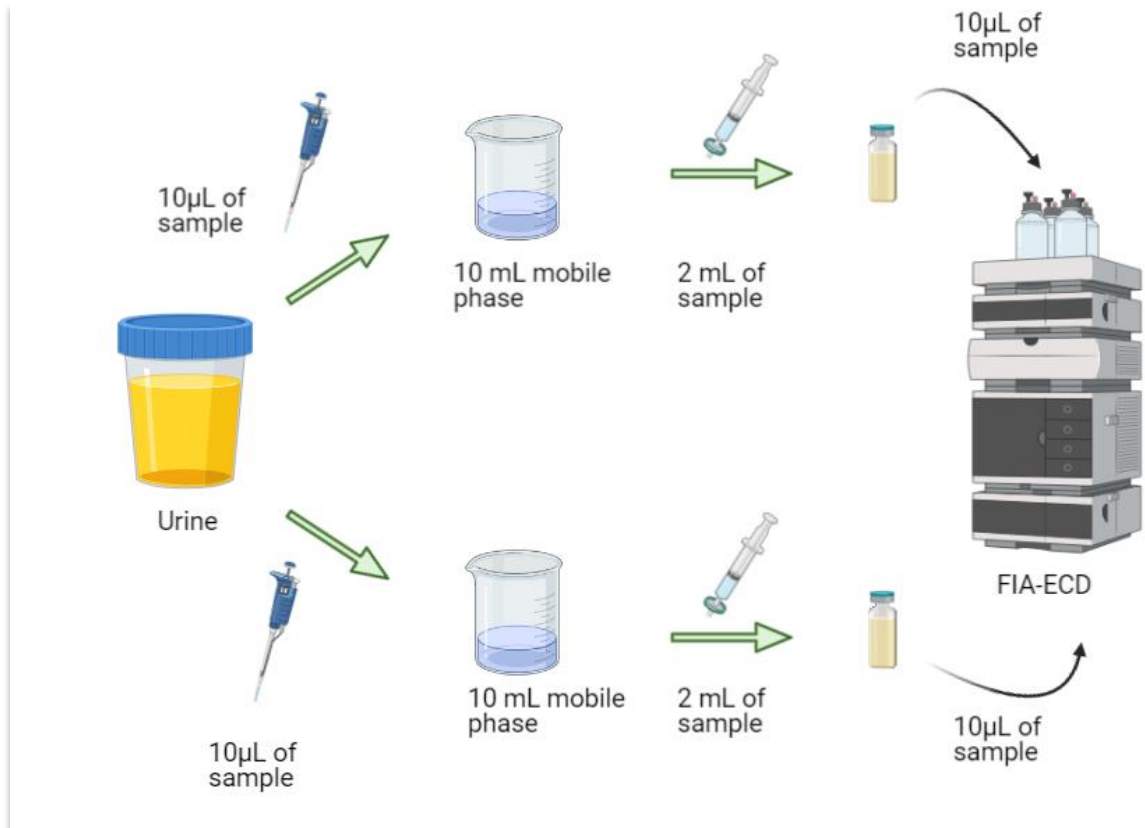
Total Charge Q (C) of collected 24-hour urine in the time of 40 days

Red days are menstruation, blue are ovulation and 3th February 2021 is the day without food



9 sample: urine of 3 people for 3 days





Process for the
evaluation of
antioxidants in
urine

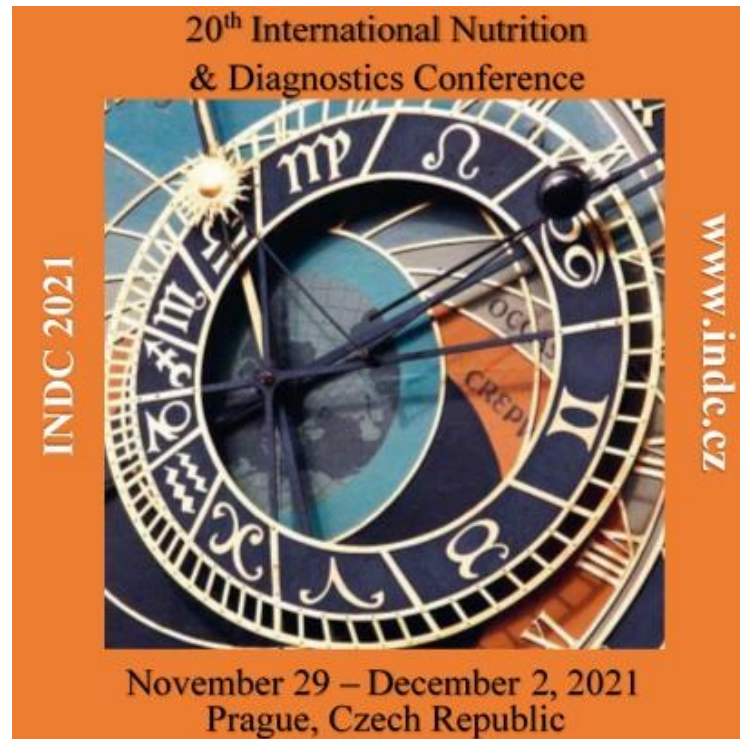
	Volume (l)		
	Day 1	Day 2	Day 3
Giorgia	3,5	3,05	3,1
Ludovica	1	1	0,7
Emma	1,7	1,6	0,9

Results of the Volume (l) of urine of each subject each day of the experiment

	C/24h		
	Day 1	Day 2	Day 3
Giorgia	1087,392	1266,33	1332,669
Ludovica	826,4367	1891,767	947,506
Emma	1108,219	1226,747	976,062

Results of the Total charge in urine in C/24h of sample of urine of the three subjects in each day of the experiment

pozvánka



Poděkování

