Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

Poly(*p*-phenyleneethynylene)-based tongues discriminate fruit juices

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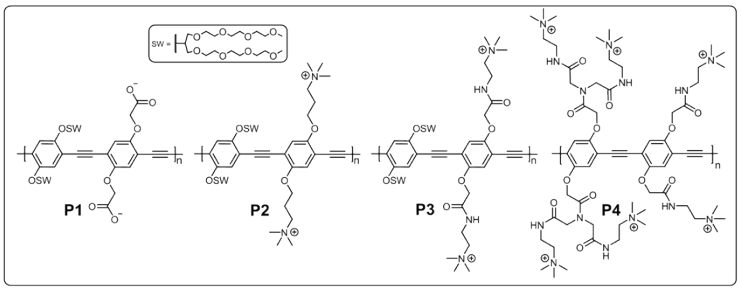
1. Screening process.

a)



b)

Abbrev.	Apple Juice Name
AP1	Bio Apple juice
AP2	Riod'oro Apple juice
AP3	REWE Apple juice
AP4	Albi Apple juice
AP5	Riod'oro Premium-Direct
AP6	Ja Apple juice
AP7	Apple Schorle
AP8	Hessischer Apple wine
AP9	Solevita Bio Apple juice
AP10	Amecke Apple juice
AP11	AITAFIT Apple juice
AP12	AITAFIT Premium Apple juice
AP13	EDEKA Apple juice
AP14	Lift Apple spirtzer

c)

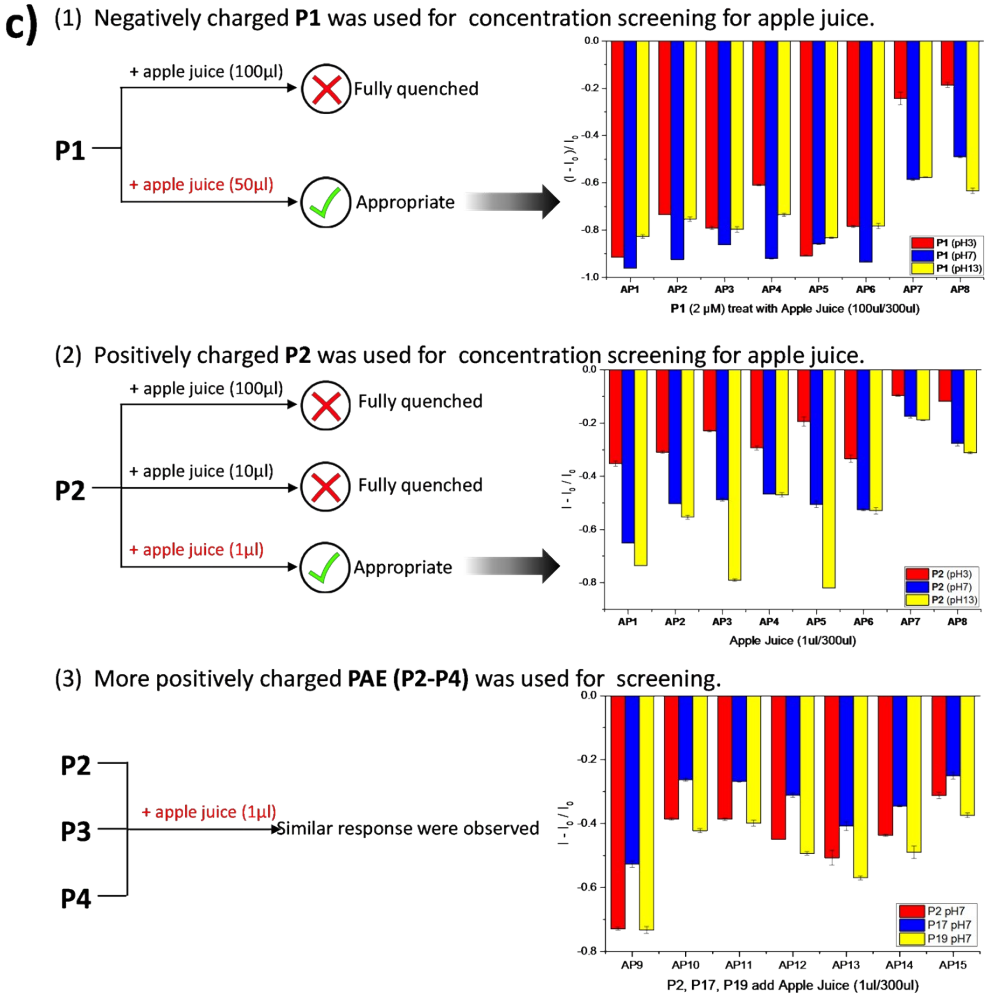


Figure S1.a) Structure of highly fluorescent charged PAE (**P1-P4**) used for screening. **P1**,[1] **P2**,[2] and **P3-P4**[3] were synthesized according to the reported procedures. ***b)*** Apple juice sample used for screening. ***(c)*** Screening process.

2. Linear Discriminant Analysis

Table S1. Training matrix of fluorescence response pattern from negatively charged water-soluble **P1** (2 μM, at pH3, pH7, and pH13, buffered) against commercial apple juice samples **AJ1**-**AJ14** (50 μl). LDA was carried out as described above resulting in the three factors of the canonical scores and group generation.

Analytes	**Fluorescence Response Pattern**			**Results LDA**			
Apple juice	**P1** (pH3)	**P1** (pH7)	**P1** (pH13)	SCORE1	SCORE2	SCORE3	Group
AJ1	-0.95	-0.64	-0.67	-42.09	2.24	-7.20	1
AJ1	-0.95	-0.65	-0.68	-44.04	3.16	-8.13	1
AJ1	-0.95	-0.65	-0.68	-43.50	2.48	-7.39	1
AJ1	-0.95	-0.67	-0.68	-44.62	4.00	-5.82	1
AJ1	-0.95	-0.66	-0.67	-43.06	2.46	-4.88	1
AJ1	-0.95	-0.67	-0.68	-44.41	4.07	-4.97	1
AJ2	-0.90	-0.47	-0.59	-17.25	-8.10	-14.33	7
AJ2	-0.90	-0.47	-0.59	-16.95	-7.69	-13.77	7
AJ2	-0.89	-0.47	-0.60	-16.83	-6.81	-14.43	7
AJ2	-0.90	-0.48	-0.59	-17.49	-7.37	-12.34	7
AJ2	-0.89	-0.47	-0.59	-16.40	-7.93	-12.99	7
AJ2	-0.89	-0.46	-0.59	-15.62	-7.98	-14.45	7
AJ3	-0.91	-0.50	-0.54	-13.38	-13.74	-4.21	8
AJ3	-0.91	-0.51	-0.55	-15.11	-12.64	-4.98	8
AJ3	-0.91	-0.51	-0.54	-12.70	-12.72	-3.09	8
AJ3	-0.91	-0.52	-0.54	-13.78	-12.80	-2.89	8
AJ3	-0.91	-0.52	-0.54	-14.17	-12.73	-2.76	8
AJ3	-0.91	-0.52	-0.54	-13.41	-12.26	-2.81	8
AJ4	-0.75	-0.70	-0.67	-18.95	25.83	2.71	9
AJ4	-0.76	-0.71	-0.66	-18.59	24.91	3.82	9
AJ4	-0.75	-0.71	-0.67	-19.46	26.18	2.82	9
AJ4	-0.75	-0.71	-0.66	-16.89	25.59	5.05	9
AJ4	-0.75	-0.71	-0.66	-18.04	26.30	4.03	9
AJ4	-0.76	-0.71	-0.67	-19.84	25.60	2.90	9
AJ5	-0.80	-0.61	-0.63	-15.26	13.15	-2.76	10
AJ5	-0.80	-0.61	-0.62	-14.63	11.83	-1.19	10
AJ5	-0.80	-0.61	-0.63	-15.97	12.82	-2.34	10
AJ5	-0.80	-0.62	-0.62	-15.11	12.38	-0.89	10
AJ5	-0.80	-0.61	-0.62	-14.38	12.04	-2.05	10
AJ5	-0.80	-0.62	-0.63	-15.76	13.91	-1.85	10
AJ6	-0.88	-0.40	-0.51	0.71	-17.57	-10.12	11
AJ6	-0.88	-0.41	-0.51	-0.18	-16.85	-9.89	11
AJ6	-0.88	-0.40	-0.51	0.16	-17.73	-9.63	11
AJ6	-0.88	-0.40	-0.52	-0.55	-16.90	-10.55	11
AJ6	-0.88	-0.41	-0.51	0.42	-17.45	-9.29	11
AJ6	-0.88	-0.40	-0.51	-0.03	-17.46	-10.10	11
AJ7	-0.93	-0.88	-0.78	-65.02	24.85	3.18	12
AJ7	-0.93	-0.88	-0.77	-64.91	24.15	3.73	12
AJ7	-0.93	-0.88	-0.77	-65.10	24.23	3.88	12
AJ7	-0.93	-0.88	-0.77	-65.57	24.41	3.46	12
AJ7	-0.94	-0.88	-0.77	-65.31	23.95	3.63	12

AJ7	-0.93	-0.88	-0.77	-64.42	24.49	3.62	12
AJ8	-0.79	-0.35	-0.40	29.87	-22.59	0.28	**5**
AJ8	-0.79	-0.37	-0.40	29.40	-20.91	2.27	13
AJ8	-0.79	-0.40	-0.40	27.05	-19.07	4.31	13
AJ8	-0.79	-0.38	-0.40	27.62	-20.43	2.92	13
AJ8	-0.79	-0.39	-0.41	26.35	-18.77	2.66	13
AJ8	-0.79	-0.38	-0.41	26.12	-18.81	1.75	13
AJ9	-0.77	-0.67	-0.64	-15.02	19.64	2.44	14
AJ9	-0.76	-0.67	-0.65	-15.24	21.50	1.35	14
AJ9	-0.76	-0.67	-0.64	-14.35	21.35	1.80	14
AJ9	-0.76	-0.66	-0.64	-14.06	20.53	1.69	14
AJ9	-0.76	-0.65	-0.65	-15.66	20.99	-0.37	14
AJ9	-0.77	-0.66	-0.65	-15.74	20.10	1.23	14
AJ10	-0.82	-0.58	-0.46	5.71	-8.69	14.18	2
AJ10	-0.82	-0.61	-0.47	4.60	-6.25	16.25	2
AJ10	-0.82	-0.61	-0.47	4.39	-7.28	16.35	2
AJ10	-0.82	-0.58	-0.46	6.23	-8.01	14.61	2
AJ10	-0.82	-0.59	-0.47	5.44	-7.76	15.14	2
AJ10	-0.82	-0.60	-0.46	5.29	-7.78	16.23	2
AJ11	-0.92	-0.59	-0.50	-11.86	-16.23	9.10	3
AJ11	-0.92	-0.59	-0.50	-12.50	-15.29	9.10	3
AJ11	-0.92	-0.59	-0.49	-11.72	-16.06	9.50	3
AJ11	-0.92	-0.59	-0.50	-12.75	-15.47	8.40	3
AJ11	-0.92	-0.60	-0.49	-11.04	-16.25	11.05	3
AJ11	-0.92	-0.61	-0.49	-11.92	-15.19	11.56	3
AJ12	-0.81	-0.37	-0.42	23.66	-20.61	-0.50	4
AJ12	-0.81	-0.38	-0.42	22.86	-20.54	0.14	4
AJ12	-0.81	-0.38	-0.42	22.72	-19.92	0.45	4
AJ12	-0.81	-0.38	-0.41	24.12	-21.52	1.69	4
AJ12	-0.80	-0.39	-0.42	23.89	-18.81	1.98	4
AJ12	-0.82	-0.39	-0.41	23.23	-22.21	3.03	4
AJ13	-0.77	-0.35	-0.39	33.52	-20.49	1.69	5
AJ13	-0.78	-0.36	-0.40	30.93	-20.38	1.07	5
AJ13	-0.78	-0.35	-0.40	31.33	-19.83	-0.17	5
AJ13	-0.77	-0.36	-0.39	33.17	-19.57	2.10	5
AJ13	-0.77	-0.36	-0.41	30.43	-17.88	0.81	5
AJ13	-0.78	-0.37	-0.39	31.48	-20.29	2.83	5
AJ14	-0.21	-0.20	-0.40	112.16	36.17	-3.97	6
AJ14	-0.20	-0.21	-0.40	114.31	37.75	-2.86	6
AJ14	-0.23	-0.19	-0.40	111.66	33.61	-4.37	6
AJ14	-0.21	-0.21	-0.40	112.66	36.36	-3.25	6
AJ14	-0.22	-0.21	-0.40	111.23	35.52	-3.59	6
AJ14	-0.25	-0.22	-0.39	107.94	31.06	-1.57	6

Jackknifed classification matrix: 83/84 (99% corrected classification).

Table S2. Detection and Identification of 56 unknown commercial apple juice samples using LDA training matrix above (*Table S1*) from **P1** (2 μM, at pH3, pH7, and pH13, buffered). All unknown samples could be assigned to the corresponding acids group defined by the training matrix according to ther shortest Mahalanobis distance. According to the verification, no unknown samples was misclassified, representing an accuracy of 100%.

Sample	Fluorescence Response Pattern			Results LDA				Analyte	
#	**P1** (pH3)	**P1** (pH7)	**P1** (pH13)	SCORE1	SCORE2	SCORE3	Group	Identification	Verification
1	-0.75	-0.71	-0.66	-17.23	25.88	4.92	9	AJ4	AJ4
2	-0.93	-0.88	-0.77	-65.13	24.29	3.62	12	AJ7	AJ7
3	-0.76	-0.66	-0.65	-14.53	21.13	1.06	14	AJ9	AJ9
4	-0.77	-0.66	-0.64	-15.39	20.21	1.15	14	AJ9	AJ9
5	-0.22	-0.20	-0.40	111.71	34.73	-4.06	6	AJ14	AJ14
6	-0.91	-0.52	-0.55	-14.25	-11.88	-3.77	8	AJ3	AJ3
7	-0.82	-0.60	-0.46	6.13	-7.95	16.91	2	AJ10	AJ10
8	-0.95	-0.67	-0.68	-45.03	3.69	-4.90	1	AJ1	AJ1
9	-0.80	-0.61	-0.63	-15.80	12.31	-2.52	10	AJ5	AJ5
10	-0.80	-0.38	-0.40	27.13	-21.46	3.39	13	AJ8	AJ8
11	-0.92	-0.60	-0.49	-11.56	-15.79	10.41	3	AJ11	AJ11
12	-0.78	-0.36	-0.39	31.78	-20.08	2.10	5	AJ13	AJ13
13	-0.77	-0.37	-0.40	31.35	-19.42	2.63	5	AJ13	AJ13
14	-0.91	-0.51	-0.55	-14.37	-12.52	-4.42	8	AJ3	AJ3
15	-0.89	-0.46	-0.59	-15.47	-8.55	-13.40	7	AJ2	AJ2
16	-0.80	-0.61	-0.62	-14.62	12.39	-1.66	10	AJ5	AJ5
17	-0.80	-0.61	-0.62	-14.40	11.34	-1.65	10	AJ5	AJ5
18	-0.90	-0.47	-0.59	-17.08	-8.00	-13.07	7	AJ2	AJ2
19	-0.92	-0.59	-0.50	-12.40	-15.53	9.33	3	AJ11	AJ11
20	-0.95	-0.66	-0.67	-43.73	2.86	-6.22	1	AJ1	AJ1
21	-0.75	-0.71	-0.66	-17.96	25.44	4.58	9	AJ4	AJ4
22	-0.89	-0.48	-0.59	-16.46	-7.33	-12.65	7	AJ2	AJ2
23	-0.88	-0.43	-0.51	-1.36	-15.72	-7.69	11	AJ6	AJ6
24	-0.82	-0.60	-0.47	4.69	-6.79	15.62	2	AJ10	AJ10
25	-0.95	-0.65	-0.67	-42.98	1.99	-6.37	1	AJ1	AJ1
26	-0.93	-0.88	-0.77	-65.15	24.26	3.42	12	AJ7	AJ7
27	-0.21	-0.21	-0.40	112.41	35.73	-2.09	6	AJ14	AJ14
28	-0.80	-0.37	-0.42	24.46	-20.11	0.00	4	AJ12	AJ12
29	-0.20	-0.20	-0.40	113.79	36.78	-3.53	6	AJ14	AJ14
30	-0.95	-0.68	-0.68	-44.51	4.23	-4.76	1	AJ1	AJ1
31	-0.76	-0.67	-0.64	-13.75	20.94	2.93	14	AJ9	AJ9
32	-0.91	-0.52	-0.55	-14.81	-12.79	-3.78	8	AJ3	AJ3
33	-0.90	-0.47	-0.61	-19.40	-6.24	-15.72	7	AJ2	AJ2
34	-0.80	-0.34	-0.41	27.57	-22.18	-1.56	13	AJ8	AJ8
35	-0.76	-0.66	-0.65	-16.12	21.08	0.77	14	AJ9	AJ9
36	-0.92	-0.59	-0.50	-11.58	-15.82	9.36	3	AJ11	AJ11
37	-0.75	-0.71	-0.65	-16.92	24.91	5.44	9	AJ4	AJ4
38	-0.82	-0.59	-0.46	6.04	-8.37	15.55	2	AJ10	AJ10
39	-0.81	-0.39	-0.42	22.39	-20.73	0.89	4	AJ12	AJ12
40	-0.91	-0.52	-0.54	-13.20	-13.63	-2.71	8	AJ3	AJ3
41	-0.92	-0.59	-0.49	-11.45	-16.25	9.66	3	AJ11	AJ11
42	-0.88	-0.40	-0.50	0.84	-18.10	-9.28	11	AJ6	AJ6
43	-0.79	-0.37	-0.40	28.79	-20.40	1.40	13	AJ8	AJ8
44	-0.76	-0.71	-0.66	-18.10	24.82	3.76	9	AJ4	AJ4

45	-0.81	-0.39	-0.42	22.41	-19.81	0.69	4	AJ12	AJ12
46	-0.88	-0.41	-0.50	0.87	-17.42	-8.07	11	AJ6	AJ6
47	-0.80	-0.61	-0.63	-15.72	12.95	-2.54	10	AJ5	AJ5
48	-0.81	-0.39	-0.42	22.19	-20.79	1.11	4	AJ12	AJ12
49	-0.93	-0.88	-0.77	-64.96	24.39	3.34	12	AJ7	AJ7
50	-0.82	-0.59	-0.47	5.83	-7.29	14.59	2	AJ10	AJ10
51	-0.78	-0.37	-0.40	30.74	-19.66	2.29	5	AJ13	AJ13
52	-0.88	-0.41	-0.51	0.32	-17.64	-9.25	11	AJ6	AJ6
53	-0.78	-0.37	-0.39	31.59	-20.18	2.95	5	AJ13	AJ13
54	-0.79	-0.36	-0.40	28.73	-21.34	1.01	13	AJ8	AJ8
55	-0.26	-0.21	-0.39	107.53	30.61	-2.57	6	AJ14	AJ14
56	-0.93	-0.88	-0.77	-64.89	24.06	3.73	12	AJ7	AJ7

Verification of unknown samples: 56/56 (100% accuracy).

a)

Jackknifed Classification Matrix

	AJ1	AJ10	AJ11	AJ12	AJ13	AJ14	AJ2	AJ3	AJ4	AJ5	AJ6	AJ7	AJ8	AJ9	%correct
AJ1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	100
AJ10	0	6	0	0	0	0	0	0	0	0	0	0	0	0	100
AJ11	0	0	6	0	0	0	0	0	0	0	0	0	0	0	100
AJ12	0	0	0	6	0	0	0	0	0	0	0	0	0	0	100
AJ13	0	0	0	0	6	0	0	0	0	0	0	0	0	0	100
AJ14	0	0	0	0	0	6	0	0	0	0	0	0	0	0	100
AJ2	0	0	0	0	0	0	6	0	0	0	0	0	0	0	100
AJ3	0	0	0	0	0	0	0	6	0	0	0	0	0	0	100
AJ4	0	0	0	0	0	0	0	0	6	0	0	0	0	0	100
AJ5	0	0	0	0	0	0	0	0	0	6	0	0	0	0	100
AJ6	0	0	0	0	0	0	0	0	0	0	6	0	0	0	100
AJ7	0	0	0	0	0	0	0	0	0	0	0	6	0	0	100
AJ8	0	0	0	0	1	0	0	0	0	0	0	0	5	0	83
AJ9	0	0	0	0	0	0	0	0	0	0	0	0	0	6	100
Total	6	6	6	6	7	6	6	6	6	6	6	6	5	6	99

b)

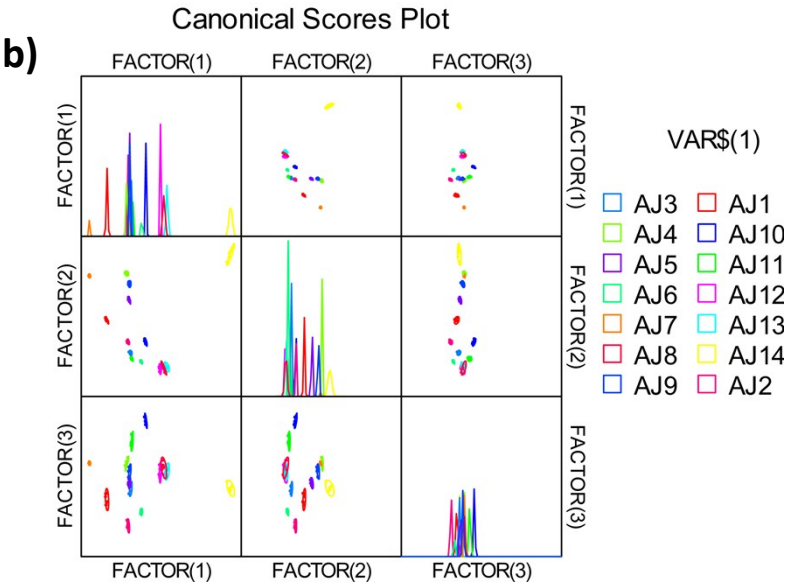


Figure S2.a) Jackknifed classification matrix and ***b)*** Canonical scores plots obtained from assay for negatively charged water-soluble **P1** (2 µM, at pH 3, pH7, and pH13, buffered) against commercial apple juice samples **AJ1-AJ14** (50 µl).

Table S3. Training matrix of fluorescence response pattern from negatively charged water-soluble **P1** (2 μM, at pH3, pH7, and pH13, buffered) against commercial black currant juice samples **BJ1**-**BJ5** (50 μl). LDA was carried out resulting in the three factors of the canonical scores and group generation.

Analytes	**Fluorescence Response Pattern**			**Results LDA**			
Juice	**P1** (pH3)	**P1** (pH7)	**P1** (pH13)	SCORE1	SCORE2	SCORE3	Group
BJ1	-0.85	-0.97	-0.75	16.74	7.09	-1.03	1
BJ1	-0.84	-0.97	-0.74	15.00	10.29	-1.77	1
BJ1	-0.85	-0.97	-0.76	15.20	7.55	0.97	1
BJ1	-0.85	-0.97	-0.74	13.74	7.57	-1.34	1
BJ1	-0.85	-0.97	-0.74	14.43	8.01	-1.88	1
BJ1	-0.85	-0.97	-0.75	14.00	8.72	-0.87	1
BJ2	-0.92	-0.98	-0.78	-14.01	5.42	1.89	2
BJ2	-0.92	-0.98	-0.79	-14.17	3.73	3.41	2
BJ2	-0.92	-0.98	-0.77	-13.82	4.53	1.24	2
BJ2	-0.92	-0.98	-0.78	-16.41	3.91	2.25	2
BJ2	-0.92	-0.98	-0.79	-13.88	3.09	3.67	2
BJ2	-0.92	-0.98	-0.78	-14.87	3.21	2.65	2
BJ3	-0.86	-0.96	-0.79	20.94	-8.03	3.57	3
BJ3	-0.86	-0.96	-0.77	21.91	-8.59	0.25	3
BJ3	-0.87	-0.96	-0.78	19.37	-10.30	1.20	3
BJ3	-0.87	-0.96	-0.77	20.84	-8.17	0.76	3
BJ3	-0.87	-0.96	-0.77	18.81	-8.92	-0.69	3
BJ3	-0.87	-0.96	-0.77	20.39	-8.69	0.14	3
BJ4	-0.96	-0.98	-0.78	-24.80	-3.61	-0.98	4
BJ4	-0.96	-0.98	-0.77	-24.86	-4.32	-2.13	4
BJ4	-0.96	-0.98	-0.77	-24.23	-5.34	-2.03	4
BJ4	-0.96	-0.98	-0.78	-24.27	-5.00	-1.67	4
BJ4	-0.96	-0.98	-0.78	-26.11	-3.73	-0.44	4
BJ4	-0.96	-0.98	-0.78	-24.69	-4.73	-1.75	4
BJ5	-0.89	-0.97	-0.76	4.76	0.33	-1.82	5
BJ5	-0.88	-0.97	-0.76	5.03	2.33	-0.88	5
BJ5	-0.89	-0.97	-0.76	2.12	0.96	-0.13	5
BJ5	-0.88	-0.97	-0.76	4.00	2.89	-0.21	5
BJ5	-0.89	-0.97	-0.76	4.54	-0.62	-0.76	5
BJ5	-0.89	-0.97	-0.76	4.33	0.43	-1.62	5

Jackknifed classification matrix: **30/30 (100% corrected classification)**

Table S4. Detection and Identification of 20 unknown commercial black currant juice samples using LDA training matrix (*Table S3*) from **P1** (2 µM, at pH3, pH7, and pH13, buffered). All unknown samples could be assigned to the corresponding acids group defined by the training matrix according to ther shortest Mahalanobis distance. According to the verification, no unknown samples was misclassified, representing an accuracy of 100%.

Sample	Fluorescence Response Pattern			Results LDA				Analyte	
#	**P1** (pH3)	**P1** (pH7)	**P1** (pH13)	SCORE1	SCORE2	SCORE3	Group	Identification	Verification
1	-0.87	-0.96	-0.78	17.90	-9.31	1.23	3	BJ3	BJ3
2	-0.87	-0.96	-0.79	19.87	-9.01	3.54	3	BJ3	BJ3
3	-0.88	-0.97	-0.76	3.36	2.49	0.01	5	BJ5	BJ5
4	-0.85	-0.97	-0.75	14.44	6.69	0.04	1	BJ1	BJ1
5	-0.89	-0.97	-0.76	2.87	2.96	-0.33	5	BJ5	BJ5
6	-0.92	-0.98	-0.79	-15.23	3.24	3.71	2	BJ2	BJ2
7	-0.85	-0.97	-0.75	15.88	5.84	-0.95	1	BJ1	BJ1
8	-0.96	-0.98	-0.78	-25.86	-3.35	-1.43	4	BJ4	BJ4
9	-0.87	-0.96	-0.78	18.65	-8.56	1.96	3	BJ3	BJ3
10	-0.96	-0.98	-0.78	-25.77	-2.82	-1.23	4	BJ4	BJ4
11	-0.89	-0.97	-0.76	1.82	1.87	-0.71	5	BJ5	BJ5
12	-0.92	-0.98	-0.79	-14.29	2.29	4.27	2	BJ2	BJ2
13	-0.96	-0.98	-0.78	-24.10	-4.10	-1.00	4	BJ4	BJ4
14	-0.92	-0.98	-0.79	-15.64	3.36	3.96	2	BJ2	BJ2
15	-0.85	-0.97	-0.74	13.17	8.02	-1.30	1	BJ1	BJ1
16	-0.89	-0.97	-0.76	2.85	2.48	-0.62	5	BJ5	BJ5
17	-0.88	-0.96	-0.77	16.76	-9.09	0.44	3	BJ3	BJ3
18	-0.96	-0.98	-0.78	-26.21	-3.69	-1.21	4	BJ4	BJ4
19	-0.93	-0.99	-0.80	-17.30	2.69	4.89	2	BJ2	BJ2
20	-0.85	-0.97	-0.77	15.91	4.38	2.73	1	BJ1	BJ1

Verification of unknown samples: 20/20 (100% accuracy).

a)

Jackknifed Classification Matrix

	BJ1	BJ2	BJ3	BJ4	BJ5	%correct
BJ1	6	0	0	0	0	100
BJ2	0	6	0	0	0	100
BJ3	0	0	6	0	0	100
BJ4	0	0	0	6	0	100
BJ5	0	0	0	0	6	100
Total	6	6	6	6	6	100

b)

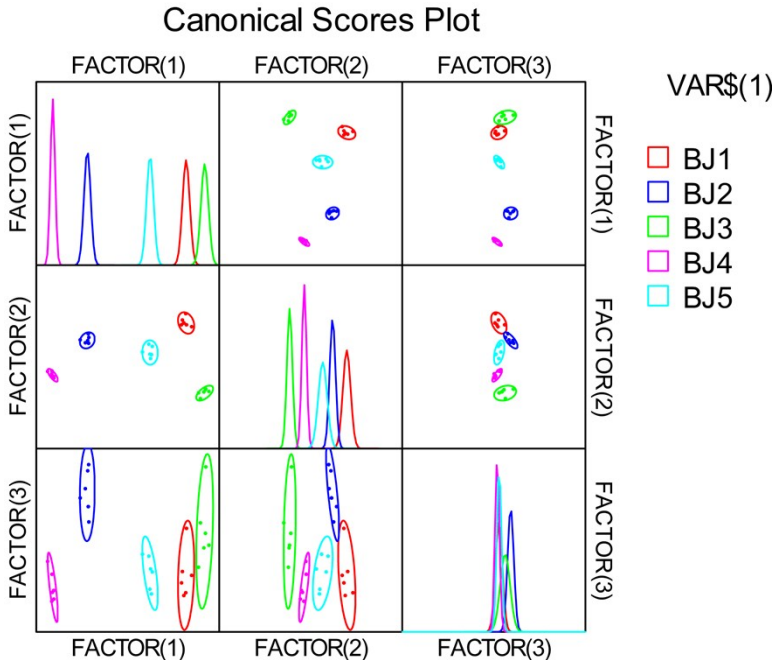


Figure S3. a) Jackknifed classification matrix and ***b)*** Canonical scores plots obtained from assay for negatively charged water-soluble **P1** (2 µM, at pH 3, pH7, and pH13, buffered) against commercial black currant juice samples **BJ1**-**BJ5** (50 µl).

Table S5. Training matrix of fluorescence response pattern from negatively charged water-soluble **P1** (2 µM, at pH3, pH7, and pH13, buffered) against commercial grape juice samples **GJ1**-**GJ6** (50 µl). LDA was carried out resulting in the three factors of the canonical scores and group generation.

Analytes	**Fluorescence Response Pattern**			**Results LDA**			
Grape juice	**P1** (pH3)	**P1** (pH7)	**P1** (pH13)	**SCORE1**	**SCORE2**	**SCORE3**	**Group**
GJ1	-0.94	-0.90	-0.62	-15.82	2.08	-4.91	1
GJ1	-0.94	-0.90	-0.62	-15.35	1.92	-3.85	1
GJ1	-0.94	-0.90	-0.62	-15.79	1.73	-4.90	1
GJ1	-0.94	-0.90	-0.62	-16.42	2.13	-4.23	1
GJ1	-0.94	-0.90	-0.62	-16.15	2.36	-5.18	1
GJ1	-0.94	-0.91	-0.62	-16.60	3.30	-5.32	1
GJ2	-0.95	-0.96	-0.69	-35.44	-7.23	1.64	2
GJ2	-0.94	-0.96	-0.69	-35.84	-6.48	2.46	2
GJ2	-0.95	-0.96	-0.69	-36.16	-5.70	1.42	2
GJ2	-0.95	-0.96	-0.69	-35.47	-7.37	0.81	2
GJ2	-0.95	-0.96	-0.69	-35.55	-6.64	1.74	2
GJ2	-0.95	-0.96	-0.69	-34.83	-7.65	1.39	2
GJ3	-0.91	-0.87	-0.62	-5.85	8.72	3.45	3
GJ3	-0.91	-0.88	-0.62	-8.31	10.14	3.28	3
GJ3	-0.91	-0.88	-0.63	-8.57	6.56	3.72	3
GJ3	-0.91	-0.89	-0.63	-9.52	9.24	4.93	3
GJ3	-0.91	-0.89	-0.63	-9.43	7.41	4.48	3
GJ3	-0.91	-0.88	-0.61	-8.45	10.31	1.48	3
GJ4	-0.91	-0.80	-0.60	16.70	0.09	-0.10	4
GJ4	-0.91	-0.80	-0.60	15.89	-0.73	0.08	4
GJ4	-0.91	-0.81	-0.61	15.02	0.19	1.48	4
GJ4	-0.91	-0.81	-0.60	14.98	1.00	-0.18	4
GJ4	-0.91	-0.81	-0.61	14.81	-0.27	0.53	4
GJ4	-0.91	-0.81	-0.60	14.25	1.27	0.82	4
GJ5	-0.91	-0.80	-0.59	18.27	3.26	0.36	5
GJ5	-0.92	-0.80	-0.59	16.07	0.53	-3.93	5
GJ5	-0.92	-0.81	-0.60	14.62	-0.19	-1.23	**4**
GJ5	-0.92	-0.80	-0.58	16.88	1.29	-3.89	5
GJ5	-0.92	-0.81	-0.59	14.99	1.08	-2.35	5
GJ5	-0.92	-0.80	-0.59	16.06	0.29	-2.19	5
GJ6	-0.91	-0.76	-0.61	29.85	-6.70	1.49	6
GJ6	-0.91	-0.76	-0.60	29.28	-4.61	1.19	6
GJ6	-0.91	-0.76	-0.61	27.99	-5.13	2.83	6
GJ6	-0.91	-0.76	-0.60	29.03	-6.35	0.57	6
GJ6	-0.91	-0.76	-0.61	28.24	-5.54	1.86	6
GJ6	-0.91	-0.77	-0.60	26.62	-4.32	0.25	6

Jackknifed classification matrix: 35/36 (97% corrected classification).

Table S6. Detection and Identification of 24 unknown commercial grape juice samples using LDA training matrix (*Table S5*) from **P1** (2 µM, at pH3, pH7, and pH13, buffered). All unknown samples could be assigned to the corresponding acids group defined by the training matrix according to ther shortest Mahalanobis distance. According to the verification, 2 of the 24 samples were misclassified, representing an accuracy of 92%.

Sample	Fluorescence Response Pattern			Results LDA				Analyte	
#	**P1** (pH3)	**P1** (pH7)	**P1** (pH13)	SCORE1	SCORE2	SCORE3	Group	Identification	Verification
1	-0.94	-0.91	-0.63	-16.80	2.19	-3.71	1	GJ1	GJ1
2	-0.91	-0.88	-0.62	-8.37	9.04	4.10	3	GJ3	GJ3
3	-0.91	-0.81	-0.60	13.58	1.23	-0.11	4	GJ4	GJ4
4	-0.92	-0.81	-0.59	14.62	1.87	-2.02	5	GJ5	GJ5
5	-0.91	-0.76	-0.60	28.87	-4.94	1.11	6	GJ6	GJ6
6	-0.91	-0.80	-0.59	15.77	3.03	-1.48	5	GJ5	**GJ4**
7	-0.94	-0.91	-0.62	-16.81	2.81	-4.35	1	GJ1	GJ1
8	-0.94	-0.96	-0.68	-35.58	-4.88	1.49	2	GJ2	GJ2
9	-0.92	-0.79	-0.59	18.57	-1.16	-4.10	5	GJ5	GJ5
10	-0.91	-0.88	-0.62	-6.77	7.72	2.70	3	GJ3	GJ3
11	-0.91	-0.76	-0.60	29.11	-4.64	-0.01	6	GJ6	GJ6
12	-0.95	-0.96	-0.69	-35.97	-7.44	1.73	2	GJ2	GJ2
13	-0.94	-0.90	-0.63	-16.04	1.80	-4.00	1	GJ1	GJ1
14	-0.91	-0.88	-0.63	-8.07	7.10	4.71	3	GJ3	GJ3
15	-0.92	-0.81	-0.59	14.14	2.48	-2.39	5	GJ5	**GJ4**
16	-0.92	-0.81	-0.60	14.82	-1.10	-2.90	5	GJ5	GJ5
17	-0.95	-0.96	-0.69	-35.86	-5.67	1.46	2	GJ2	GJ2
18	-0.91	-0.76	-0.60	28.89	-4.80	1.19	6	GJ6	GJ6
19	-0.95	-0.96	-0.69	-35.33	-5.57	1.63	2	GJ2	GJ2
20	-0.91	-0.81	-0.60	14.86	0.00	0.08	4	GJ4	GJ4
21	-0.91	-0.88	-0.62	-8.49	8.65	3.36	3	GJ3	GJ3
22	-0.91	-0.76	-0.60	30.24	-5.53	0.49	6	GJ6	GJ6
23	-0.94	-0.91	-0.62	-16.33	3.69	-5.39	1	GJ1	GJ1
24	-0.92	-0.80	-0.59	17.98	-0.12	-1.68	5	GJ5	GJ5

Verification of unknown samples: 22/24 (92% accuracy).

a)

Jackknifed Classification Matrix

	GJ1	GJ2	GJ3	GJ4	GJ5	GJ6	%correct
GJ1	6	0	0	0	0	0	100
GJ2	0	6	0	0	0	0	100
GJ3	0	0	6	0	0	0	100
GJ4	0	0	0	6	0	0	100
GJ5	0	0	0	2	4	0	67
GJ6	0	0	0	0	0	6	100
Total	6	6	6	8	4	6	94

b)

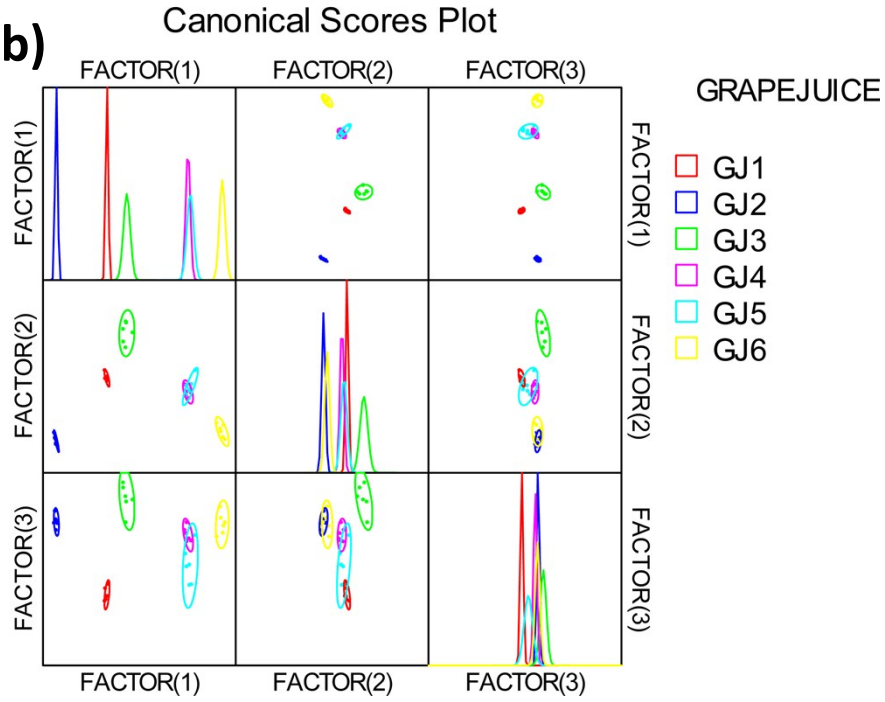


Figure S4. a) Jackknifed classification matrix and ***b)*** Canonical scores plots obtained from assay for negatively charged water-soluble **P1** (2 µM, at pH 3, pH7, and pH13, buffered) against commercial grape juice samples **GJ1-GJ6** (50 µl).

Table S7. Training matrix of fluorescence response pattern from positively charged water-soluble **P2** (2 μM, at pH3, pH7, and pH13, buffered) against commercial apple juice samples **AJ1**-**AJ14** (1 μl). LDA was carried out as described above resulting in the three factors of the canonical scores and group generation.

Analytes	**Fluorescence Response Pattern**			**Results LDA**			
Apple juice	**P2** (pH3)	**P2** (pH7)	**P2** (pH13)	**SCORE1**	**SCORE2**	**SCORE3**	**Group**
AJ1	-0.32	-0.58	-0.66	29.48	-10.81	7.53	1
AJ1	-0.31	-0.57	-0.66	29.10	-8.70	6.94	1
AJ1	-0.30	-0.56	-0.65	28.82	-8.02	6.96	1
AJ1	-0.31	-0.58	-0.65	28.45	-9.65	8.01	1
AJ1	-0.32	-0.58	-0.65	27.21	-10.45	7.47	1
AJ1	-0.33	-0.58	-0.66	30.06	-11.44	5.91	1
AJ2	-0.30	-0.50	-0.47	-9.37	-7.05	9.70	7
AJ2	-0.28	-0.49	-0.48	-6.33	-4.72	9.71	7
AJ2	-0.31	-0.50	-0.48	-7.21	-7.70	8.16	7
AJ2	-0.30	-0.49	-0.47	-8.15	-6.87	8.55	7
AJ2	-0.29	-0.51	-0.47	-9.12	-7.00	11.14	7
AJ2	-0.30	-0.50	-0.47	-9.14	-7.05	9.60	7
AJ3	-0.28	-0.46	-0.45	-12.30	-3.01	8.19	8
AJ3	-0.30	-0.47	-0.46	-11.02	-4.39	6.49	8
AJ3	-0.29	-0.46	-0.46	-11.15	-3.21	6.89	8
AJ3	-0.28	-0.46	-0.45	-11.97	-2.46	7.34	8
AJ3	-0.30	-0.48	-0.46	-11.26	-5.46	7.42	8
AJ3	-0.30	-0.48	-0.45	-13.22	-6.51	8.29	8
AJ4	-0.17	-0.46	-0.81	66.72	19.64	-0.35	9
AJ4	-0.16	-0.46	-0.81	66.05	20.42	0.14	9
AJ4	-0.16	-0.45	-0.81	67.02	21.01	-1.22	9
AJ4	-0.15	-0.46	-0.81	67.28	20.86	1.46	9
AJ4	-0.16	-0.46	-0.81	67.53	19.94	0.39	9
AJ4	-0.15	-0.47	-0.82	68.43	20.66	1.89	9
AJ5	-0.22	-0.44	-0.70	41.35	13.44	-1.63	10
AJ5	-0.22	-0.43	-0.70	41.30	14.17	-2.91	10
AJ5	-0.22	-0.44	-0.70	41.04	12.77	-1.97	10
AJ5	-0.22	-0.44	-0.70	42.78	12.98	-2.18	10
AJ5	-0.22	-0.44	-0.70	42.12	13.35	-1.96	10
AJ5	-0.23	-0.44	-0.70	40.97	12.04	-2.93	10
AJ6	-0.35	-0.42	-0.38	-29.43	-8.33	-0.72	11
AJ6	-0.33	-0.42	-0.38	-29.29	-6.40	1.92	11
AJ6	-0.35	-0.42	-0.38	-29.64	-7.67	0.59	11
AJ6	-0.35	-0.42	-0.37	-30.37	-8.03	1.04	11
AJ6	-0.33	-0.42	-0.38	-28.28	-6.45	1.38	11
AJ6	-0.34	-0.43	-0.38	-29.04	-8.42	1.98	11
AJ7	-0.48	-0.71	-0.88	68.42	-32.95	-4.59	12
AJ7	-0.48	-0.70	-0.88	68.04	-31.73	-6.99	12
AJ7	-0.50	-0.70	-0.88	66.74	-33.69	-8.38	12
AJ7	-0.50	-0.70	-0.88	67.82	-34.46	-8.10	12
AJ7	-0.48	-0.71	-0.88	67.45	-32.85	-4.95	12
AJ7	-0.48	-0.71	-0.88	68.32	-33.17	-5.52	12
AJ8	-0.31	-0.35	-0.30	-44.52	-0.59	0.30	13
AJ8	-0.31	-0.36	-0.29	-45.15	-0.59	0.91	13
AJ8	-0.31	-0.34	-0.30	-43.98	1.01	-1.68	13

AJ8	-0.31	-0.35	-0.30	-43.33	0.45	-0.23	13
AJ8	-0.32	-0.36	-0.31	-42.64	-1.22	-0.42	13
AJ8	-0.31	-0.35	-0.31	-42.39	0.06	-1.09	13
AJ9	-0.28	-0.40	-0.57	12.50	6.89	-5.56	14
AJ9	-0.26	-0.40	-0.56	10.99	8.07	-3.82	14
AJ9	-0.27	-0.39	-0.55	10.24	8.09	-4.54	14
AJ9	-0.27	-0.39	-0.55	9.94	7.52	-5.29	14
AJ9	-0.26	-0.39	-0.55	10.28	8.87	-3.48	14
AJ9	-0.28	-0.41	-0.56	10.05	5.50	-4.33	14
AJ10	-0.15	-0.38	-0.63	31.36	23.33	1.13	2
AJ10	-0.14	-0.38	-0.64	32.36	25.03	2.22	2
AJ10	-0.15	-0.36	-0.63	31.06	25.02	-1.19	2
AJ10	-0.14	-0.37	-0.64	32.51	25.40	0.39	2
AJ10	-0.15	-0.37	-0.64	32.89	24.72	0.56	2
AJ10	-0.16	-0.38	-0.65	33.48	23.17	0.34	2
AJ11	-0.40	-0.48	-0.47	-13.55	-16.55	-2.11	3
AJ11	-0.41	-0.47	-0.46	-15.81	-16.71	-3.91	3
AJ11	-0.42	-0.48	-0.47	-14.08	-17.42	-4.46	3
AJ11	-0.42	-0.47	-0.45	-16.86	-17.61	-4.01	3
AJ11	-0.41	-0.47	-0.46	-15.17	-16.98	-4.45	3
AJ11	-0.41	-0.49	-0.47	-14.04	-17.83	-2.92	3
AJ12	-0.34	-0.39	-0.35	-34.81	-4.81	-0.58	4
AJ12	-0.35	-0.40	-0.35	-35.73	-6.85	-1.28	4
AJ12	-0.34	-0.40	-0.34	-36.32	-6.50	-0.18	4
AJ12	-0.35	-0.41	-0.35	-34.20	-7.49	-0.31	4
AJ12	-0.35	-0.40	-0.36	-33.71	-6.74	-1.10	4
AJ12	-0.35	-0.41	-0.36	-32.40	-8.46	-0.33	4
AJ13	-0.31	-0.28	-0.26	-52.16	4.76	-5.63	5
AJ13	-0.31	-0.28	-0.26	-52.51	5.22	-6.10	5
AJ13	-0.30	-0.29	-0.26	-52.03	4.35	-4.03	5
AJ13	-0.31	-0.28	-0.27	-50.74	4.90	-5.98	5
AJ13	-0.32	-0.29	-0.26	-51.60	2.99	-6.47	5
AJ13	-0.31	-0.29	-0.27	-50.53	3.57	-5.42	5
AJ14	-0.23	-0.25	-0.23	-55.22	14.73	-0.59	6
AJ14	-0.24	-0.23	-0.23	-54.51	16.12	-4.01	6
AJ14	-0.23	-0.23	-0.24	-53.08	16.87	-3.90	6
AJ14	-0.23	-0.22	-0.23	-55.92	16.89	-3.51	6
AJ14	-0.24	-0.24	-0.23	-54.29	15.23	-2.24	6
AJ14	-0.23	-0.25	-0.24	-52.58	14.98	-1.43	6

Jackknifed classification matrix: 84/84 (100% corrected classification).

Table S8. Detection and Identification of 56 unknown commercial apple juice samples using LDA training matrix (*Table S7*) from **P2** (2 µM, at pH3, pH7, and pH13, buffered). All unknown samples could be assigned to the corresponding acids group defined by the training matrix according to ther shortest Mahalanobis distance. According to the verification, 2 of the 56 samples were misclassified, representing an accuracy of 97%.

Sample	Fluorescence Response Pattern			Results LDA				Analyte	
#	**P2** (pH3)	**P2** (pH7)	**P2** (pH13)	SCORE1	SCORE2	SCORE3	Group	Identification	Verification
1	-0.23	-0.44	-0.69	40.40	11.55	-2.20	10	AJ5	AJ5
2	-0.31	-0.35	-0.30	-42.95	0.37	-0.47	13	AJ8	AJ8
3	-0.32	-0.34	-0.31	-42.55	0.05	-2.23	13	AJ8	AJ8
4	-0.26	-0.39	-0.55	8.55	8.34	-3.67	14	AJ9	AJ9
5	-0.14	-0.38	-0.65	35.69	25.55	1.34	2	AJ10	AJ10
6	-0.49	-0.71	-0.89	68.87	-33.89	-5.63	12	AJ7	AJ7
7	-0.30	-0.29	-0.26	-51.34	4.73	-4.63	5	AJ13	AJ13
8	-0.33	-0.57	-0.66	28.46	-11.04	5.48	1	AJ1	AJ1
9	-0.32	-0.48	-0.45	-14.10	-8.66	5.67	8	AJ3	AJ3
10	-0.15	-0.46	-0.81	66.85	21.01	1.28	9	AJ4	AJ4
11	-0.33	-0.51	-0.47	-10.64	-10.75	7.76	7	AJ2	AJ2
12	-0.36	-0.43	-0.38	-28.36	-9.67	0.68	11	AJ6	AJ6
13	-0.17	-0.46	-0.81	65.82	19.52	-0.02	9	AJ4	AJ4
14	-0.42	-0.47	-0.46	-16.25	-17.41	-4.24	3	AJ11	AJ11
15	-0.32	-0.57	-0.65	27.34	-10.23	6.98	1	AJ1	AJ1
16	-0.41	-0.47	-0.45	-16.59	-16.57	-4.21	3	AJ11	AJ11
17	-0.35	-0.41	-0.36	-34.23	-7.85	-0.82	4	AJ12	AJ12
18	-0.23	-0.23	-0.22	-57.45	15.88	-2.06	6	AJ14	AJ14
19	-0.30	-0.46	-0.45	-11.73	-4.47	6.03	8	AJ3	AJ3
20	-0.31	-0.48	-0.46	-10.80	-7.12	6.67	8	AJ3	**AJ2**
21	-0.49	-0.70	-0.88	68.25	-32.87	-6.50	12	AJ7	AJ7
22	-0.15	-0.38	-0.65	34.51	24.21	-0.08	2	AJ10	AJ10
23	-0.34	-0.43	-0.38	-29.40	-7.71	2.82	11	AJ6	AJ6
24	-0.31	-0.48	-0.45	-12.55	-6.74	7.51	8	AJ3	AJ3
25	-0.26	-0.41	-0.56	11.31	7.39	-1.41	14	AJ9	AJ9
26	-0.33	-0.29	-0.27	-50.75	2.23	-7.13	5	AJ13	AJ13
27	-0.32	-0.57	-0.66	29.91	-10.42	4.89	1	AJ1	AJ1
28	-0.32	-0.47	-0.46	-12.32	-7.31	4.43	8	AJ3	AJ3
29	-0.34	-0.43	-0.38	-27.55	-7.36	2.12	11	AJ6	AJ6
30	-0.15	-0.45	-0.82	68.93	22.51	-0.42	9	AJ4	AJ4
31	-0.23	-0.44	-0.69	39.45	11.69	-3.07	10	AJ5	AJ5
32	-0.14	-0.37	-0.65	34.67	26.31	0.59	2	AJ10	AJ10
33	-0.41	-0.47	-0.45	-17.01	-16.76	-3.53	3	AJ11	AJ11
34	-0.31	-0.48	-0.47	-8.57	-6.47	6.42	7	AJ2	AJ2
35	-0.31	-0.49	-0.46	-11.43	-7.98	7.07	8	AJ3	**AJ2**
36	-0.32	-0.58	-0.66	28.77	-10.58	7.18	1	AJ1	AJ1
37	-0.17	-0.45	-0.81	66.15	20.13	-1.07	9	AJ4	AJ4
38	-0.49	-0.71	-0.88	68.43	-33.09	-6.29	12	AJ7	AJ7
39	-0.26	-0.40	-0.55	9.36	8.34	-2.25	14	AJ9	AJ9
40	-0.36	-0.41	-0.36	-33.73	-8.28	-0.92	4	AJ12	AJ12
41	-0.33	-0.29	-0.28	-49.38	3.09	-7.75	5	AJ13	AJ13
42	-0.23	-0.43	-0.69	39.88	12.03	-3.97	10	AJ5	AJ5
43	-0.33	-0.35	-0.32	-41.53	-1.79	-3.51	13	AJ8	AJ8
44	-0.31	-0.35	-0.30	-43.40	-0.60	-0.18	13	AJ8	AJ8

45	-0.23	-0.24	-0.23	-54.34	16.19	-2.63	6	AJ14	AJ14
46	-0.26	-0.38	-0.54	8.33	9.53	-3.58	14	AJ9	AJ9
47	-0.23	-0.23	-0.24	-52.50	17.53	-3.56	6	AJ14	AJ14
48	-0.36	-0.41	-0.36	-32.84	-9.10	-1.81	4	AJ12	AJ12
49	-0.34	-0.41	-0.36	-32.75	-6.81	1.23	4	AJ12	AJ12
50	-0.33	-0.42	-0.39	-26.43	-6.19	1.03	11	AJ6	AJ6
51	-0.49	-0.70	-0.88	67.96	-33.02	-6.69	12	AJ7	AJ7
52	-0.15	-0.36	-0.66	35.67	25.82	-2.80	2	AJ10	AJ10
53	-0.22	-0.44	-0.69	40.67	13.04	-1.67	10	AJ5	AJ5
54	-0.41	-0.47	-0.45	-16.32	-16.90	-4.00	3	AJ11	AJ11
55	-0.32	-0.29	-0.27	-51.09	3.58	-6.04	5	AJ13	AJ13
56	-0.24	-0.24	-0.23	-55.80	14.62	-2.24	6	AJ14	AJ14

Verification of unknown samples: 54/56 (97% accuracy).

a)

Jackknifed Classification Matrix

	AJ1	AJ10	AJ11	AJ12	AJ13	AJ14	AJ2	AJ3	AJ4	AJ5	AJ6	AJ7	AJ8	AJ9	%correct
AJ1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	100
AJ10	0	6	0	0	0	0	0	0	0	0	0	0	0	0	100
AJ11	0	0	6	0	0	0	0	0	0	0	0	0	0	0	100
AJ12	0	0	0	6	0	0	0	0	0	0	0	0	0	0	100
AJ13	0	0	0	0	6	0	0	0	0	0	0	0	0	0	100
AJ14	0	0	0	0	0	6	0	0	0	0	0	0	0	0	100
AJ2	0	0	0	0	0	0	6	0	0	0	0	0	0	0	100
AJ3	0	0	0	0	0	0	0	6	0	0	0	0	0	0	100
AJ4	0	0	0	0	0	0	0	0	6	0	0	0	0	0	100
AJ5	0	0	0	0	0	0	0	0	0	6	0	0	0	0	100
AJ6	0	0	0	0	0	0	0	0	0	0	6	0	0	0	100
AJ7	0	0	0	0	0	0	0	0	0	0	0	6	0	0	100
AJ8	0	0	0	0	0	0	0	0	0	0	0	0	6	0	100
AJ9	0	0	0	0	0	0	0	0	0	0	0	0	0	6	100
Total	6	6	6	6	6	6	6	6	6	6	6	6	6	6	100

b)

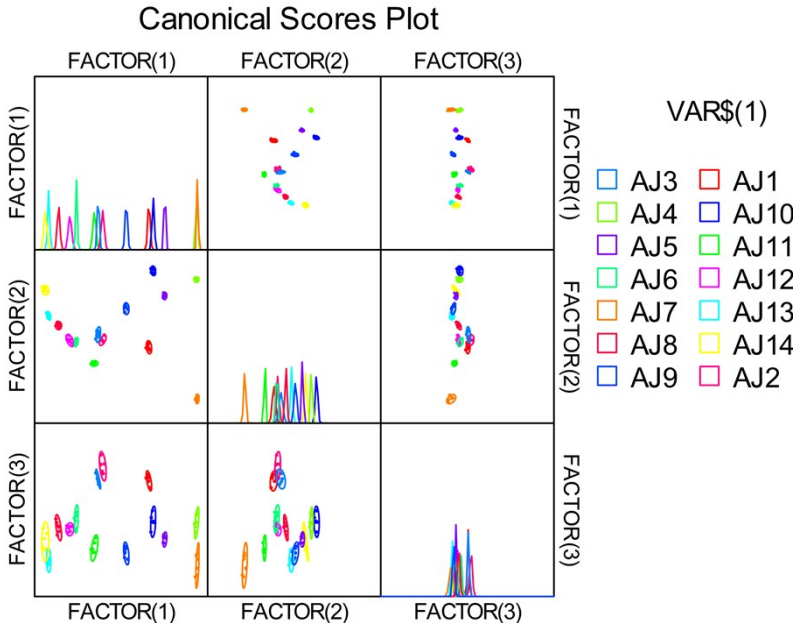


Figure S5. a) Jackknifed classification matrix and ***b)*** Canonical scores plots obtained from assay for water-soluble **P2** (2 µM, at pH 3, pH7, and pH13, buffered) against commercial apple juice samples **AJ1**-**AJ14** (1 µl).

Table S9. Training matrix of fluorescence response pattern from water-soluble **P2** (2 μM, at pH3, pH7, and pH13, buffered) against commercial black currant juice samples **BJ1**-**BJ5** (1 μl). LDA was carried out resulting in the three factors of the canonical scores and group generation.

Analytes	**Fluorescence Response Pattern**			**Results LDA**			
Juice	**P2** (pH3)	**P2** (pH7)	**P2** (pH13)	SCORE1	SCORE2	SCORE3	Group
BJ1	-0.77	-0.99	-0.84	-2.28	6.42	-5.49	1
BJ1	-0.76	-0.98	-0.84	-1.72	6.32	-3.17	1
BJ1	-0.77	-0.99	-0.84	-2.34	6.34	-3.05	1
BJ1	-0.77	-0.98	-0.84	-2.38	5.85	-4.96	1
BJ1	-0.78	-0.99	-0.84	-3.50	4.60	-5.39	1
BJ1	-0.78	-0.98	-0.84	-2.98	5.02	-5.76	1
BJ2	-0.79	-0.98	-0.88	-8.47	-4.03	4.66	2
BJ2	-0.78	-0.98	-0.87	-6.87	-1.51	3.14	2
BJ2	-0.78	-0.98	-0.88	-8.94	-3.04	6.12	2
BJ2	-0.78	-0.98	-0.88	-7.54	-3.11	3.34	2
BJ2	-0.79	-0.98	-0.88	-8.91	-4.19	5.37	2
BJ2	-0.78	-0.98	-0.88	-7.17	-3.41	4.82	2
BJ3	-0.73	-0.98	-0.84	4.25	6.66	3.02	3
BJ3	-0.73	-0.98	-0.84	3.46	7.37	4.17	3
BJ3	-0.73	-0.98	-0.85	3.32	5.87	4.21	3
BJ3	-0.73	-0.97	-0.84	5.71	5.01	3.88	3
BJ3	-0.73	-0.98	-0.85	2.47	6.17	4.00	3
BJ3	-0.73	-0.98	-0.84	3.56	7.42	3.80	3
BJ4	-0.72	-0.95	-0.84	18.61	-3.93	-1.76	4
BJ4	-0.71	-0.95	-0.84	18.33	-3.32	-0.19	4
BJ4	-0.71	-0.94	-0.84	22.10	-4.82	-1.61	4
BJ4	-0.71	-0.94	-0.84	19.79	-4.38	0.38	4
BJ4	-0.72	-0.94	-0.84	18.77	-5.73	-1.87	4
BJ4	-0.72	-0.94	-0.84	17.98	-5.70	-1.98	4
BJ5	-0.82	-0.99	-0.87	-13.34	-3.91	-4.23	5
BJ5	-0.81	-0.99	-0.87	-12.85	-2.54	-1.98	5
BJ5	-0.82	-0.99	-0.87	-12.74	-3.62	-3.49	5
BJ5	-0.81	-0.99	-0.88	-12.26	-4.22	-2.20	5
BJ5	-0.82	-0.99	-0.88	-11.90	-5.45	-2.07	5
BJ5	-0.82	-0.98	-0.88	-12.15	-6.15	-1.71	5

Jackknifed classification matrix: 30/30 (100% corrected classification)

Table S10. Detection and Identification of 20 unknown commercial black currant juice samples using LDA training matrix (*Table S9*) from **P2** (2 µM, at pH3, pH7, and pH13, buffered). All unknown samples could be assigned to the corresponding acids group defined by the training matrix according to ther shortest Mahalanobis distance. According to the verification, no unknown samples was misclassified, representing an accuracy of 100%.

Sample	**Fluorescence Response Pattern**			**Results LDA**				**Analyte**	
#	**P2** (pH3)	**P2** (pH3)	**P2** (pH3)	SCORE1	SCORE2	SCORE3	Group	Identification	Verification
1	-0.78	-0.98	-0.88	-7.19	-3.27	6.25	2	BCJ2	BCJ2
2	-0.71	-0.94	-0.84	20.57	-3.75	-0.17	4	BCJ4	BCJ4
3	-0.81	-0.99	-0.87	-11.70	-3.05	-3.89	5	BCJ5	BCJ5
4	-0.78	-0.98	-0.83	-1.87	6.13	-7.59	1	BCJ1	BCJ1
5	-0.72	-0.98	-0.84	3.03	8.17	5.85	3	BCJ3	BCJ3
6	-0.71	-0.95	-0.84	17.72	-3.28	1.04	4	BCJ4	BCJ4
7	-0.78	-0.98	-0.88	-6.08	-4.67	4.89	2	BCJ2	BCJ2
8	-0.78	-0.98	-0.87	-6.24	-3.34	1.85	2	BCJ2	BCJ2
9	-0.71	-0.95	-0.84	19.08	-3.66	-0.37	4	BCJ4	BCJ4
10	-0.82	-0.99	-0.88	-14.00	-6.15	-1.45	5	BCJ5	BCJ5
11	-0.77	-0.98	-0.83	-1.22	6.42	-6.78	1	BCJ1	BCJ1
12	-0.81	-0.98	-0.87	-10.98	-4.94	-3.19	5	BCJ5	BCJ5
13	-0.78	-0.99	-0.83	-2.26	6.22	-7.92	1	BCJ1	BCJ1
14	-0.72	-0.98	-0.84	4.33	7.29	4.37	3	BCJ3	BCJ3
15	-0.71	-0.95	-0.84	19.03	-3.02	-0.20	4	BCJ4	BCJ4
16	-0.78	-0.98	-0.88	-8.23	-2.95	4.31	2	BCJ2	BCJ2
17	-0.72	-0.98	-0.84	5.34	8.17	4.56	3	BCJ3	BCJ3
18	-0.82	-0.99	-0.87	-12.13	-4.68	-4.72	5	BCJ5	BCJ5
19	-0.78	-0.98	-0.83	-2.02	6.25	-7.52	1	BCJ1	BCJ1
20	-0.72	-0.98	-0.84	4.79	7.09	4.06	3	BCJ3	BCJ3

Verification of unknown samples: 20/20 (100% accuracy).

a)

Jackknifed Classification Matrix

	BCJ1	BCJ2	BCJ3	BCJ4	BCJ5	%correct
BCJ1	**6**	0	0	0	0	**100**
BCJ2	0	**6**	0	0	0	**100**
BCJ3	0	0	**6**	0	0	**100**
BCJ4	0	0	0	**6**	0	**100**
BCJ5	0	0	0	0	**6**	**100**
Total	**6**	**6**	**6**	**6**	**6**	**100**

b)

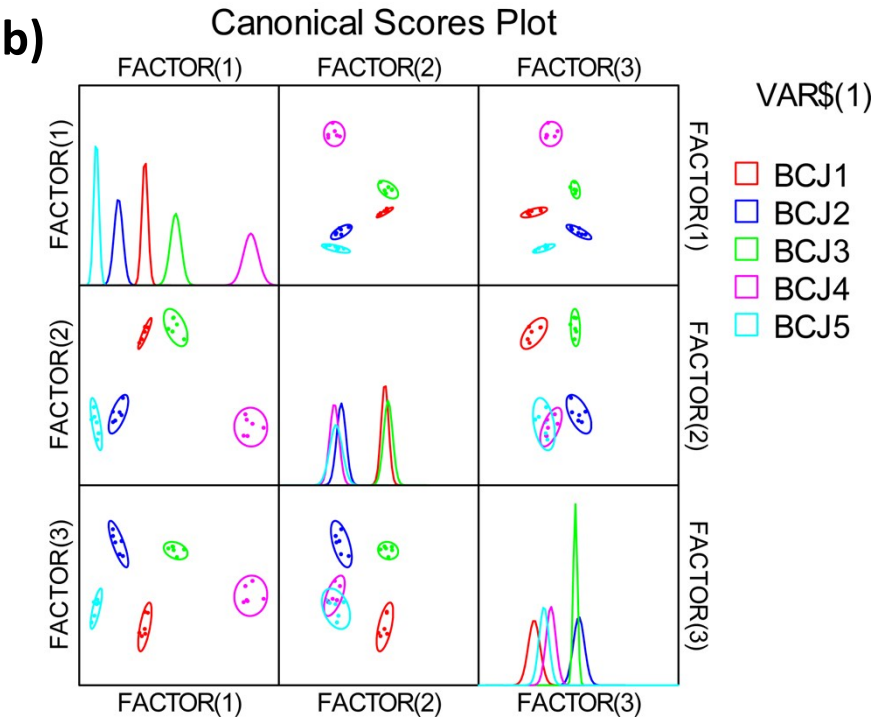


Figure S6. a) Jackknifed classification matrix and ***b)*** Canonical scores plots obtained from assay for water-soluble **P2** (2 µM, at pH 3, pH7, and pH13, buffered) against commercial black currant juice samples **BJ1**-**BJ5** (1 µl).

Table S11. Training matrix of fluorescence response pattern from water-soluble **P2** (2 μM, at pH3, pH7, and pH13, buffered) against commercial grape juice samples **GJ1**-**GJ6** (1 μl). LDA was carried out resulting in the three factors of the canonical scores and group generation.

Analytes	**Fluorescence Response Pattern**			**Results LDA**			
Grape juice	**P2** (pH3)	**P2** (pH7)	**P2** (pH13)	**SCORE1**	**SCORE2**	**SCORE3**	**Group**
GJ1	-0.44	-0.65	-0.76	1.14	-9.25	-0.32	1
GJ1	-0.43	-0.65	-0.76	1.92	-10.22	0.05	1
GJ1	-0.43	-0.65	-0.75	3.26	-9.02	-0.53	1
GJ1	-0.42	-0.66	-0.75	2.11	-7.21	1.12	1
GJ1	-0.43	-0.65	-0.75	2.33	-8.65	-0.38	1
GJ1	-0.44	-0.65	-0.75	2.59	-8.35	-0.96	1
GJ2	-0.56	-0.80	-0.87	-22.74	-1.94	-2.21	2
GJ2	-0.56	-0.80	-0.86	-21.70	-0.89	-2.72	2
GJ2	-0.55	-0.79	-0.86	-21.21	-1.73	-1.40	2
GJ2	-0.54	-0.79	-0.87	-21.72	-1.90	0.12	2
GJ2	-0.55	-0.80	-0.86	-21.87	-0.80	-0.76	2
GJ2	-0.55	-0.80	-0.87	-22.67	-1.28	-1.18	2
GJ3	-0.48	-0.80	-0.80	-11.76	6.04	0.54	3
GJ3	-0.48	-0.79	-0.80	-11.54	4.82	0.58	3
GJ3	-0.46	-0.79	-0.79	-10.57	6.29	2.08	3
GJ3	-0.45	-0.80	-0.79	-10.91	6.98	2.83	3
GJ3	-0.46	-0.80	-0.80	-11.69	6.98	2.39	3
GJ3	-0.47	-0.81	-0.80	-12.45	8.09	1.82	3
GJ4	-0.40	-0.65	-0.71	8.49	-5.26	-0.31	4
GJ4	-0.39	-0.65	-0.72	7.97	-4.89	1.53	4
GJ4	-0.36	-0.64	-0.72	8.93	-5.20	3.47	4
GJ4	-0.37	-0.65	-0.72	7.95	-4.18	3.32	4
GJ4	-0.39	-0.67	-0.72	6.24	-2.44	1.80	4
GJ4	-0.40	-0.67	-0.72	5.85	-2.44	1.27	4
GJ5	-0.39	-0.67	-0.68	11.88	0.56	-1.61	5
GJ5	-0.38	-0.67	-0.68	11.94	1.32	-0.91	5
GJ5	-0.37	-0.66	-0.68	12.97	0.65	-0.06	5
GJ5	-0.39	-0.67	-0.67	12.11	1.09	-2.28	5
GJ5	-0.38	-0.67	-0.69	10.70	0.71	-0.48	5
GJ5	-0.40	-0.68	-0.69	8.95	-0.02	-1.46	5
GJ6	-0.37	-0.70	-0.65	13.11	7.61	-1.85	6
GJ6	-0.37	-0.70	-0.67	11.28	5.84	0.17	6
GJ6	-0.36	-0.70	-0.65	13.67	8.29	-1.13	6
GJ6	-0.37	-0.71	-0.66	11.99	7.52	-0.22	6
GJ6	-0.37	-0.70	-0.68	10.86	5.10	-0.18	6
GJ6	-0.38	-0.71	-0.66	12.57	7.75	-2.15	6

Jackknifed classification matrix: 36/36 (100% corrected classification).

Table S12. Detection and Identification of 24 unknown commercial grape juice samples using LDA training matrix (*Table S11*) from **P2** (2 μM, at pH3, pH7, and pH13, buffered). All unknown samples could be assigned to the corresponding acids group defined by the training matrix according to ther shortest Mahalanobis distance. According to the verification, none of the samples were misclassified, representing an accuracy of 100%.

Sample	Fluorescence Response Pattern			Results LDA				Analyte	
#	**P2** (pH3)	**P2** (pH7)	**P2** (pH13)	SCORE1	SCORE2	SCORE3	Group	Identification	Verification
1	-0.42	-0.65	-0.75	2.83	-9.27	0.81	1	GJ1	GJ1
2	-0.45	-0.79	-0.80	-10.67	6.35	3.91	3	GJ3	GJ3
3	-0.40	-0.66	-0.71	7.46	-4.16	-0.62	4	GJ4	GJ4
4	-0.38	-0.70	-0.66	12.82	6.23	-2.73	6	GJ6	GJ6
5	-0.42	-0.65	-0.76	2.30	-8.76	0.85	1	GJ1	GJ1
6	-0.36	-0.65	-0.73	7.43	-4.34	4.54	4	GJ4	GJ4
7	-0.56	-0.80	-0.86	-22.22	-1.86	-2.05	2	GJ2	GJ2
8	-0.38	-0.67	-0.70	9.99	-0.75	0.32	5	GJ5	GJ5
9	-0.55	-0.80	-0.87	-22.11	-1.70	-0.60	2	GJ2	GJ2
10	-0.37	-0.67	-0.70	9.85	-0.97	1.53	5	GJ5	GJ5
11	-0.56	-0.79	-0.86	-21.53	-1.79	-2.13	2	GJ2	GJ2
12	-0.41	-0.67	-0.69	10.18	-0.42	-3.11	5	GJ5	GJ5
13	-0.38	-0.70	-0.65	13.35	7.89	-2.37	6	GJ6	GJ6
14	-0.42	-0.66	-0.76	0.97	-7.47	2.15	1	GJ1	GJ1
15	-0.39	-0.66	-0.72	6.97	-4.83	1.18	4	GJ4	GJ4
16	-0.57	-0.79	-0.87	-22.57	-2.89	-2.39	2	GJ2	GJ2
17	-0.37	-0.70	-0.68	10.85	5.31	0.41	6	GJ6	GJ6
18	-0.47	-0.80	-0.80	-11.98	5.65	1.64	3	GJ3	GJ3
19	-0.40	-0.66	-0.71	7.86	-4.10	-0.33	4	GJ4	GJ4
20	-0.37	-0.70	-0.67	11.52	6.59	0.00	6	GJ6	GJ6
21	-0.36	-0.67	-0.68	11.95	0.52	1.19	5	GJ5	GJ5
22	-0.45	-0.81	-0.80	-12.12	8.07	3.45	3	GJ3	GJ3
23	-0.44	-0.65	-0.76	1.34	-10.12	0.11	1	GJ1	GJ1
24	-0.46	-0.79	-0.80	-11.29	5.36	2.30	3	GJ3	GJ3

Verification of unknown samples: 24/24 (100% accuracy).

a)

Jackknifed Classification Matrix

	GJ1	GJ2	GJ3	GJ4	GJ5	GJ6	%correct
GJ1	**6**	0	0	0	0	0	**100**
GJ2	0	**6**	0	0	0	0	**100**
GJ3	0	0	**6**	0	0	0	**100**
GJ4	0	0	0	**6**	0	0	**100**
GJ5	0	0	0	0	**6**	0	**100**
GJ6	0	0	0	0	0	**6**	**100**
Total	**6**	**6**	**6**	**6**	**6**	**6**	**100**

b)

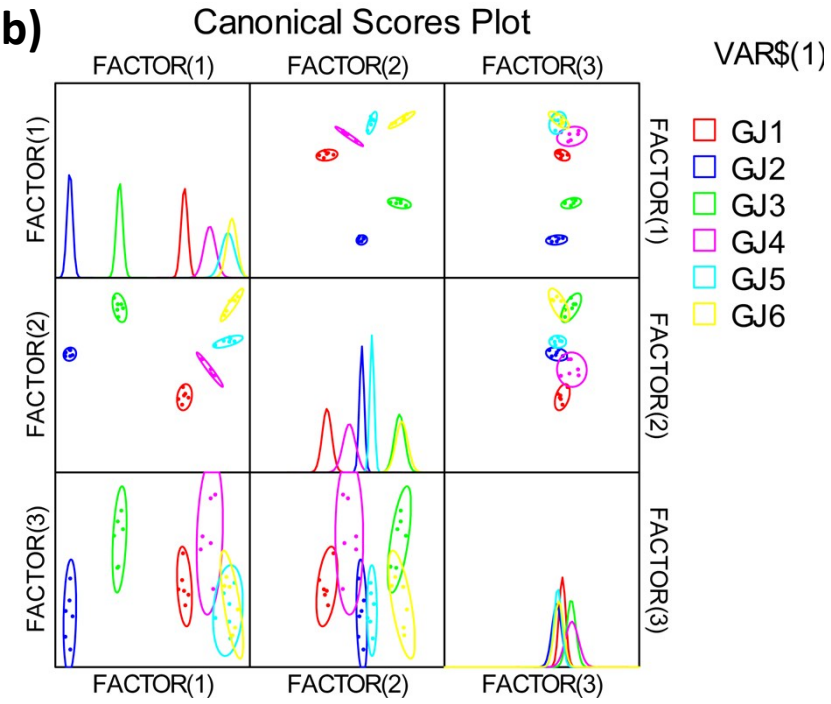


Figure S7. a) Jackknifed classification matrix and ***b)*** Canonical scores plots obtained from assay for water-soluble **P2** (2 µM, at pH 3, pH7, and pH13, buffered) against commercial grape juice samples **GJ1**-**GJ6** (1 µl).

Table S13. Training matrix of fluorescence response pattern from water-soluble **P2** (2 μM, at pH3, pH7, and pH13, buffered) against juice mixures (1 μl). LDA was carried out resulting in the three factors of the canonical scores and group generation.

Analytes	Fluorescence Response Pattern			Results LDA			
Mix juice	**P2** (pH3)	**P2** (pH7)	**P2**(pH13)	**SCORE1**	**SCORE2**	**SCORE3**	**Group**
BJ4-GJ1 (9:1)	-0.66	-0.92	-0.79	-19.73	8.75	-3.55	13
BJ4-GJ1 (9:1)	-0.65	-0.92	-0.79	-19.85	9.00	-3.32	13
BJ4-GJ1 (9:1)	-0.65	-0.92	-0.79	-19.56	9.10	-3.51	13
BJ4-GJ1 (8:2)	-0.63	-0.90	-0.76	-14.13	9.61	-6.50	12
BJ4-GJ1 (8:2)	-0.63	-0.90	-0.76	-13.75	9.25	-6.59	12
BJ4-GJ1 (8:2)	-0.63	-0.89	-0.76	-13.28	9.00	-5.46	12
BJ4-GJ1 (7:3)	-0.61	-0.86	-0.77	-6.83	4.87	-4.58	11
BJ4-GJ1 (7:3)	-0.61	-0.86	-0.77	-7.54	4.20	-3.65	11
BJ4-GJ1 (7:3)	-0.61	-0.86	-0.77	-7.22	5.33	-3.39	11
BJ4-GJ1 (6:4)	-0.61	-0.84	-0.76	-3.68	1.78	-4.87	10
BJ4-GJ1 (6:4)	-0.60	-0.83	-0.78	-3.31	1.16	-2.85	10
BJ4-GJ1 (6:4)	-0.61	-0.83	-0.73	-1.24	2.43	-9.40	10
BJ4-GJ1 (5:5)	-0.56	-0.79	-0.74	6.56	1.53	-6.54	9
BJ4-GJ1 (5:5)	-0.56	-0.79	-0.76	6.46	0.69	-3.09	9
BJ4-GJ1 (5:5)	-0.57	-0.79	-0.78	5.53	-2.47	-0.15	9
BJ4-GJ1 (4:6)	-0.53	-0.76	-0.75	12.66	-1.33	-2.45	8
BJ4-GJ1 (4:6)	-0.53	-0.76	-0.76	12.33	-1.75	-1.44	8
BJ4-GJ1 (4:6)	-0.53	-0.77	-0.75	11.93	-0.39	-2.05	8
BJ4-GJ1 (3:7)	-0.51	-0.76	-0.76	14.28	-0.01	0.14	7
BJ4-GJ1 (3:7)	-0.52	-0.76	-0.76	13.83	-0.58	-0.38	7
BJ4-GJ1 (3:7)	-0.52	-0.76	-0.76	13.79	-0.67	0.26	7
BJ4-GJ1 (2:8)	-0.49	-0.71	-0.76	22.55	-6.32	1.12	6
BJ4-GJ1 (2:8)	-0.49	-0.71	-0.76	22.40	-6.01	0.89	6
BJ4-GJ1 (2:8)	-0.50	-0.71	-0.76	21.94	-7.32	0.41	6
BJ4-GJ1 (1:9)	-0.47	-0.67	-0.75	30.46	-8.42	0.25	5
BJ4-GJ1 (1:9)	-0.47	-0.67	-0.75	30.05	-8.92	0.67	5
BJ4-GJ1 (1:9)	-0.47	-0.67	-0.75	29.77	-8.96	0.92	5
BJ5-GJ1 (9:1)	-0.81	-0.89	-0.86	-28.03	-15.89	-3.24	32
BJ5-GJ1 (9:1)	-0.81	-0.88	-0.85	-26.74	-17.00	-4.50	32
BJ5-GJ1 (9:1)	-0.81	-0.88	-0.86	-27.74	-17.62	-3.31	32
BJ5-GJ1 (8:2)	-0.77	-0.89	-0.85	-25.27	-11.64	-2.71	31
BJ5-GJ1 (8:2)	-0.77	-0.88	-0.85	-25.01	-12.50	-2.10	31
BJ5-GJ1 (8:2)	-0.78	-0.89	-0.85	-25.85	-12.38	-2.74	31
BJ5-GJ1 (7:3)	-0.75	-0.83	-0.84	-15.04	-19.09	-2.52	30
BJ5-GJ1 (7:3)	-0.74	-0.83	-0.83	-14.36	-17.50	-3.09	30
BJ5-GJ1 (7:3)	-0.76	-0.82	-0.84	-15.26	-20.51	-3.04	30
BJ5-GJ1 (6:4)	-0.72	-0.83	-0.84	-12.65	-15.77	-0.57	29
BJ5-GJ1 (6:4)	-0.73	-0.83	-0.84	-13.77	-16.52	-2.12	29
BJ5-GJ1 (6:4)	-0.72	-0.83	-0.84	-12.93	-15.21	-1.47	29
BJ5-GJ1 (5:5)	-0.67	-0.75	-0.82	1.42	-21.15	-1.18	28
BJ5-GJ1 (5:5)	-0.69	-0.76	-0.82	-0.51	-22.06	-2.46	28
BJ5-GJ1 (5:5)	-0.70	-0.76	-0.82	-1.47	-23.45	-2.90	28
BJ5-GJ1 (4:6)	-0.66	-0.76	-0.81	2.08	-17.23	-2.47	27
BJ5-GJ1 (4:6)	-0.64	-0.76	-0.81	2.92	-15.48	-1.34	27
BJ5-GJ1 (4:6)	-0.66	-0.76	-0.80	1.76	-17.08	-3.64	27

BJ5-GJ1 (3:7)	-0.57	-0.73	-0.79	13.77	-13.66	0.13	26
BJ5-GJ1 (3:7)	-0.59	-0.72	-0.79	12.97	-15.04	-0.43	26
BJ5-GJ1 (3:7)	-0.60	-0.72	-0.78	12.35	-16.69	-2.60	26
BJ5-GJ1 (2:8)	-0.51	-0.72	-0.77	18.98	-7.02	1.39	25
BJ5-GJ1 (2:8)	-0.53	-0.73	-0.77	16.33	-6.94	0.71	25
BJ5-GJ1 (2:8)	-0.54	-0.74	-0.78	14.59	-6.75	0.87	25
BJ5-GJ1 (1:9)	-0.50	-0.70	-0.77	22.68	-7.73	2.61	6
BJ5-GJ1 (1:9)	-0.52	-0.72	-0.77	18.49	-8.06	0.72	25
BJ5-GJ1 (1:9)	-0.52	-0.70	-0.77	21.41	-10.67	0.45	24
BJ4-GJ6 (9:1)	-0.62	-0.91	-0.81	-17.86	10.38	2.18	22
BJ4-GJ6 (9:1)	-0.62	-0.91	-0.81	-17.55	10.07	2.44	22
BJ4-GJ6 (9:1)	-0.62	-0.91	-0.82	-16.99	9.65	2.98	22
BJ4-GJ6 (8:2)	-0.62	-0.90	-0.81	-14.67	8.44	1.62	21
BJ4-GJ6 (8:2)	-0.62	-0.90	-0.80	-14.41	8.87	-0.16	21
BJ4-GJ6 (8:2)	-0.62	-0.89	-0.80	-13.89	8.43	0.67	21
BJ4-GJ6 (7:3)	-0.59	-0.86	-0.79	-7.19	7.41	0.60	20
BJ4-GJ6 (7:3)	-0.59	-0.88	-0.79	-9.03	9.13	-0.11	20
BJ4-GJ6 (7:3)	-0.59	-0.88	-0.79	-9.83	10.29	0.52	20
BJ4-GJ6 (6:4)	-0.57	-0.84	-0.78	-2.28	4.66	0.34	19
BJ4-GJ6 (6:4)	-0.57	-0.83	-0.78	-0.87	3.80	0.34	19
BJ4-GJ6 (6:4)	-0.58	-0.82	-0.78	-0.22	2.15	-0.32	19
BJ4-GJ6 (5:5)	-0.54	-0.82	-0.77	4.06	6.29	-0.33	18
BJ4-GJ6 (5:5)	-0.53	-0.82	-0.77	4.35	6.20	-0.10	18
BJ4-GJ6 (5:5)	-0.54	-0.82	-0.77	3.62	5.43	0.23	18
BJ4-GJ6 (4:6)	-0.50	-0.79	-0.76	10.84	5.46	0.63	17
BJ4-GJ6 (4:6)	-0.51	-0.79	-0.76	10.73	5.61	-0.11	17
BJ4-GJ6 (4:6)	-0.49	-0.79	-0.76	10.85	6.79	1.72	17
BJ4-GJ6 (3:7)	-0.45	-0.78	-0.74	15.81	11.57	1.97	16
BJ4-GJ6 (3:7)	-0.46	-0.78	-0.75	14.72	10.02	1.54	16
BJ4-GJ6 (3:7)	-0.45	-0.78	-0.75	15.23	10.43	2.14	16
BJ4-GJ6 (2:8)	-0.42	-0.74	-0.73	24.44	8.43	1.15	15
BJ4-GJ6 (2:8)	-0.42	-0.74	-0.72	24.88	8.88	-1.15	15
BJ4-GJ6 (2:8)	-0.42	-0.74	-0.72	24.28	8.70	0.15	15
BJ4-GJ6 (1:9)	-0.39	-0.72	-0.69	30.37	11.29	-2.81	14
BJ4-GJ6 (1:9)	-0.39	-0.73	-0.69	29.87	11.77	-3.19	14
BJ4-GJ6 (1:9)	-0.39	-0.72	-0.71	29.85	10.39	-0.57	14
BJ1	-0.77	-0.99	-0.84	-39.26	4.60	-2.94	1
BJ1	-0.76	-0.98	-0.84	-38.74	5.10	-2.05	1
BJ1	-0.77	-0.99	-0.84	-39.01	5.01	-2.01	1
BJ1	-0.77	-0.98	-0.84	-39.27	4.41	-2.64	1
BJ1	-0.78	-0.99	-0.84	-39.89	3.52	-2.59	1
BJ1	-0.78	-0.98	-0.84	-39.68	3.75	-2.80	1
BJ2	-0.79	-0.98	-0.88	-41.43	0.34	2.65	2
BJ2	-0.78	-0.98	-0.87	-40.75	1.56	1.65	2
BJ2	-0.78	-0.98	-0.88	-41.43	1.01	3.03	2
BJ2	-0.78	-0.98	-0.88	-41.11	0.70	2.00	2
BJ2	-0.79	-0.98	-0.88	-41.56	0.32	2.95	2
BJ2	-0.78	-0.98	-0.88	-40.79	0.90	2.60	2
BJ3	-0.73	-0.98	-0.84	-35.30	7.48	0.19	3
BJ3	-0.73	-0.98	-0.84	-35.50	7.90	0.50	3
BJ3	-0.73	-0.98	-0.85	-35.63	7.15	0.77	3

BJ3	-0.73	-0.97	-0.84	-34.62	7.09	0.79	3
BJ3	-0.73	-0.98	-0.85	-36.02	7.11	0.64	3
BJ3	-0.73	-0.98	-0.84	-35.49	7.87	0.35	3
BJ4	-0.72	-0.95	-0.84	-29.84	3.92	0.21	4
BJ4	-0.71	-0.95	-0.84	-29.76	4.46	0.69	4
BJ4	-0.71	-0.94	-0.84	-28.28	4.12	0.41	4
BJ4	-0.71	-0.94	-0.84	-29.08	4.31	1.08	4
BJ4	-0.72	-0.94	-0.84	-29.87	3.05	0.48	4
BJ4	-0.72	-0.94	-0.84	-30.24	2.90	0.43	4
BJ5	-0.82	-0.99	-0.87	-44.66	-2.14	-0.68	23
BJ5	-0.81	-0.99	-0.87	-44.11	-0.95	-0.08	23
BJ5	-0.82	-0.99	-0.87	-44.29	-1.75	-0.46	23
BJ5	-0.81	-0.99	-0.88	-43.95	-1.71	0.13	23
BJ5	-0.82	-0.99	-0.88	-43.83	-2.22	0.39	23
BJ5	-0.82	-0.98	-0.88	-43.94	-2.54	0.64	23
GJ1	-0.44	-0.65	-0.76	34.30	-8.98	3.77	33
GJ1	-0.43	-0.65	-0.76	36.06	-9.77	3.91	33
GJ1	-0.43	-0.65	-0.75	36.48	-8.57	2.41	33
GJ1	-0.42	-0.66	-0.75	34.83	-5.51	4.08	33
GJ1	-0.43	-0.65	-0.75	35.23	-8.16	2.95	33
GJ1	-0.44	-0.65	-0.75	35.03	-8.16	2.23	33
GJ2	-0.56	-0.80	-0.87	0.75	-4.75	13.06	34
GJ2	-0.56	-0.80	-0.86	0.97	-3.72	11.81	34
GJ2	-0.55	-0.79	-0.86	2.81	-3.77	12.93	34
GJ2	-0.54	-0.79	-0.87	3.17	-3.03	14.58	34
GJ2	-0.55	-0.80	-0.86	1.78	-2.34	13.62	34
GJ2	-0.55	-0.80	-0.87	0.95	-3.29	13.78	34
GJ3	-0.48	-0.80	-0.80	9.53	7.85	7.88	35
GJ3	-0.48	-0.79	-0.80	10.64	6.47	8.08	35
GJ3	-0.46	-0.79	-0.79	11.58	9.32	8.57	35
GJ3	-0.45	-0.80	-0.79	11.13	10.58	9.26	35
GJ3	-0.46	-0.80	-0.80	9.98	10.18	9.28	35
GJ3	-0.47	-0.81	-0.80	8.05	11.01	8.92	35
GJ4	-0.40	-0.65	-0.71	40.11	-3.34	-1.01	36
GJ4	-0.39	-0.65	-0.72	40.25	-1.76	0.81	36
GJ4	-0.36	-0.64	-0.72	42.61	-0.72	2.10	36
GJ4	-0.37	-0.65	-0.72	40.72	0.25	2.26	36
GJ4	-0.39	-0.67	-0.72	36.74	1.06	1.41	36
GJ4	-0.40	-0.67	-0.72	36.01	0.67	1.15	36
GJ5	-0.39	-0.67	-0.68	39.38	3.05	-5.28	37
GJ5	-0.38	-0.67	-0.68	39.31	4.42	-4.86	37
GJ5	-0.37	-0.66	-0.68	41.42	4.32	-4.51	37
GJ5	-0.39	-0.67	-0.67	38.92	3.25	-6.12	37
GJ5	-0.38	-0.67	-0.69	38.53	3.83	-3.69	37
GJ5	-0.40	-0.68	-0.69	36.47	2.09	-3.47	37
GJ6	-0.37	-0.70	-0.65	35.90	11.31	-7.75	38
GJ6	-0.37	-0.70	-0.67	36.09	10.34	-4.58	38
GJ6	-0.36	-0.70	-0.65	36.48	12.66	-7.56	38
GJ6	-0.37	-0.71	-0.66	35.56	12.14	-5.69	38
GJ6	-0.37	-0.70	-0.68	35.92	9.18	-4.51	38

GJ6	-0.38	-0.71	-0.66	35.03	11.20	-7.77	38

Jackknifed classification matrix: 97% corrected classification.

Table S13. Training matrix of fluorescence response pattern from water-soluble **P2** (2 µM, at pH3, pH7, and pH13, buffered) against self-made juice samples (1 µl). Commercial juice samples was calculated as blind. LDA was carried out resulting in the three factors of the canonical scores and group generation.

Analytes	**Fluorescence Response Pattern**			**Results LDA**		
self-made juice	**P2** (pH3)	**P2** (pH7)	**P2**(pH13)	SCORE1	SCORE2	SCORE3
GJ-green	-0.12	-0.14	-0.31	-100.50	-3.35	-1.82
GJ-green	-0.10	-0.15	-0.29	-102.33	-5.21	0.53
GJ-green	-0.09	-0.16	-0.29	-101.17	-4.80	2.12
GJ-green	-0.11	-0.14	-0.30	-102.11	-4.62	-0.73
GJ-green	-0.09	-0.14	-0.29	-103.72	-4.33	0.75
GJ-green	-0.11	-0.16	-0.29	-102.07	-6.56	-0.44
GJ green-red 7-3	-0.35	-0.46	-0.61	-24.68	0.55	-2.07
GJ green-red 7-3	-0.34	-0.48	-0.62	-22.26	1.07	-0.21
GJ green-red 7-3	-0.32	-0.45	-0.60	-26.33	2.13	-0.21
GJ green-red 7-3	-0.34	-0.44	-0.63	-22.49	5.02	-2.27
GJ green-red 7-3	-0.35	-0.48	-0.62	-21.41	0.41	-1.13
GJ green-red 7-3	-0.37	-0.46	-0.62	-23.17	0.58	-3.59
GJ green-red 5-5	-0.42	-0.60	-0.74	9.24	5.67	1.23
GJ green-red 5-5	-0.42	-0.62	-0.74	9.30	3.68	1.50
GJ green-red 5-5	-0.42	-0.59	-0.74	8.29	5.37	0.32
GJ green-red 5-5	-0.41	-0.59	-0.74	7.60	5.67	0.84
GJ green-red 5-5	-0.41	-0.61	-0.74	8.83	4.62	2.23
GJ green-red 5-5	-0.42	-0.62	-0.74	9.96	4.19	2.06
GJ green-red 3-7	-0.43	-0.64	-0.76	15.26	5.17	2.28
GJ green-red 3-7	-0.44	-0.65	-0.76	15.48	3.79	2.11
GJ green-red 3-7	-0.43	-0.64	-0.77	16.29	5.07	2.03
GJ green-red 3-7	-0.42	-0.65	-0.76	15.73	4.69	3.41
GJ green-red 3-7	-0.44	-0.64	-0.76	15.16	3.75	1.67
GJ green-red 3-7	-0.44	-0.65	-0.76	15.73	3.69	1.83
GJ-red	-0.53	-0.70	-0.86	36.30	6.71	-3.13
GJ-red	-0.52	-0.72	-0.86	38.01	6.52	-1.08
GJ-red	-0.52	-0.71	-0.86	36.28	7.16	-1.10
GJ-red	-0.53	-0.72	-0.86	37.63	6.47	-1.83
GJ-red	-0.54	-0.71	-0.86	36.83	6.10	-2.79
GJ-red	-0.53	-0.71	-0.86	36.82	6.59	-2.42
BJ	-0.68	-0.97	-0.89	63.21	-13.82	-1.03
BJ	-0.67	-0.97	-0.90	63.80	-12.43	0.16
BJ	-0.67	-0.97	-0.90	64.15	-12.26	0.56
BJ	-0.67	-0.97	-0.90	63.79	-12.31	0.54
BJ	-0.69	-0.97	-0.90	64.24	-12.92	-1.12
BJ	-0.67	-0.97	-0.90	64.34	-12.04	0.81
Set as blind (Commercial juice samples):						
BJ1	-0.77	-0.99	-0.84	53.32	-27.45	-9.19

BJ1	-0.76	-0.98	-0.84	53.84	-26.53	-8.51
BJ1	-0.77	-0.99	-0.84	54.04	-26.58	-8.61
BJ1	-0.77	-0.98	-0.84	53.62	-27.18	-9.21
BJ1	-0.78	-0.99	-0.84	54.08	-27.26	-9.84
BJ1	-0.78	-0.98	-0.84	53.74	-27.39	-9.73
BJ2	-0.79	-0.98	-0.88	60.17	-22.92	-10.33
BJ2	-0.78	-0.98	-0.87	58.75	-23.67	-9.80
BJ2	-0.78	-0.98	-0.88	60.50	-22.63	-9.83
BJ2	-0.78	-0.98	-0.88	59.34	-23.41	-10.26
BJ2	-0.79	-0.98	-0.88	60.53	-22.69	-10.28
BJ2	-0.78	-0.98	-0.88	59.72	-22.79	-9.88
BJ3	-0.73	-0.98	-0.84	53.84	-23.61	-5.65
BJ3	-0.73	-0.98	-0.84	54.23	-23.43	-5.36
BJ3	-0.73	-0.98	-0.85	54.61	-23.18	-5.73
BJ3	-0.73	-0.97	-0.84	54.03	-22.83	-5.52
BJ3	-0.73	-0.98	-0.85	54.72	-23.42	-5.88
BJ3	-0.73	-0.98	-0.84	54.09	-23.56	-5.42
BJ4	-0.72	-0.95	-0.84	50.77	-21.55	-6.39
BJ4	-0.71	-0.95	-0.84	51.16	-21.14	-5.91
BJ4	-0.71	-0.94	-0.84	50.02	-20.88	-5.84
BJ4	-0.71	-0.94	-0.84	51.14	-20.56	-5.71
BJ4	-0.72	-0.94	-0.84	51.08	-21.26	-6.80
BJ4	-0.72	-0.94	-0.84	51.26	-21.41	-6.99
BJ5	-0.82	-0.99	-0.87	59.01	-26.72	-13.54
BJ5	-0.81	-0.99	-0.87	59.20	-26.10	-12.55
BJ5	-0.82	-0.99	-0.87	58.98	-26.43	-13.16
BJ5	-0.81	-0.99	-0.88	59.34	-25.81	-12.88
BJ5	-0.82	-0.99	-0.88	59.54	-25.51	-13.06
BJ5	-0.82	-0.98	-0.88	59.87	-25.29	-13.19
GJ1	-0.44	-0.65	-0.76	16.59	3.41	2.36
GJ1	-0.43	-0.65	-0.76	15.71	4.16	2.36
GJ1	-0.43	-0.65	-0.75	13.96	2.89	2.66
GJ1	-0.42	-0.66	-0.75	16.41	3.60	4.54
GJ1	-0.43	-0.65	-0.75	15.21	2.93	2.78
GJ1	-0.44	-0.65	-0.75	14.64	2.23	2.50
GJ2	-0.56	-0.80	-0.87	45.29	0.36	-0.09
GJ2	-0.56	-0.80	-0.86	43.92	-0.74	0.15
GJ2	-0.55	-0.79	-0.86	43.90	0.85	0.91
GJ2	-0.54	-0.79	-0.87	45.24	2.36	1.93
GJ2	-0.55	-0.80	-0.86	45.12	1.02	1.69
GJ2	-0.55	-0.80	-0.87	45.81	0.96	1.02
GJ3	-0.48	-0.80	-0.80	34.53	-2.26	7.43
GJ3	-0.48	-0.79	-0.80	34.13	-1.62	6.98
GJ3	-0.46	-0.79	-0.79	33.90	-1.09	8.96
GJ3	-0.45	-0.80	-0.79	34.78	-0.72	9.79
GJ3	-0.46	-0.80	-0.80	35.51	-1.05	9.30
GJ3	-0.47	-0.81	-0.80	36.27	-2.05	9.21

GJ4	-0.40	-0.65	-0.71	8.28	0.67	5.37
GJ4	-0.39	-0.65	-0.72	9.88	2.21	6.88
GJ4	-0.36	-0.64	-0.72	9.67	4.04	8.43
GJ4	-0.37	-0.65	-0.72	10.90	3.49	8.59
GJ4	-0.39	-0.67	-0.72	12.42	1.39	7.86
GJ4	-0.40	-0.67	-0.72	12.62	0.95	7.38
GJ5	-0.39	-0.67	-0.68	4.33	-3.79	7.46
GJ5	-0.38	-0.67	-0.68	4.71	-3.54	8.35
GJ5	-0.37	-0.66	-0.68	3.80	-2.54	8.91
GJ5	-0.39	-0.67	-0.67	3.78	-4.70	7.20
GJ5	-0.38	-0.67	-0.69	6.33	-2.72	8.21
GJ5	-0.40	-0.68	-0.69	7.84	-3.07	6.82
GJ6	-0.37	-0.70	-0.65	3.66	-7.70	10.54
GJ6	-0.37	-0.70	-0.67	6.64	-4.78	11.05
GJ6	-0.36	-0.70	-0.65	3.44	-7.44	11.50
GJ6	-0.37	-0.71	-0.66	5.80	-6.06	11.59
GJ6	-0.37	-0.70	-0.68	6.86	-4.68	10.37
GJ6	-0.38	-0.71	-0.66	4.17	-7.99	10.27

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