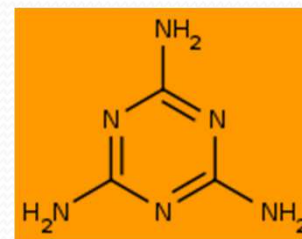
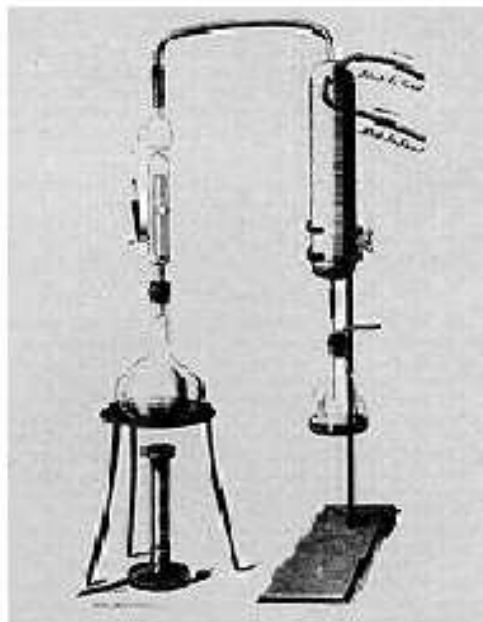
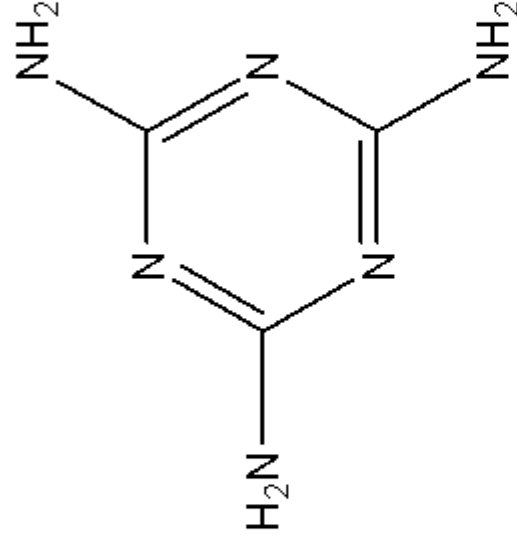


KJELDAHL METHOD FOR TOTAL NITROGEN CONTENT



nitrogen > 66%

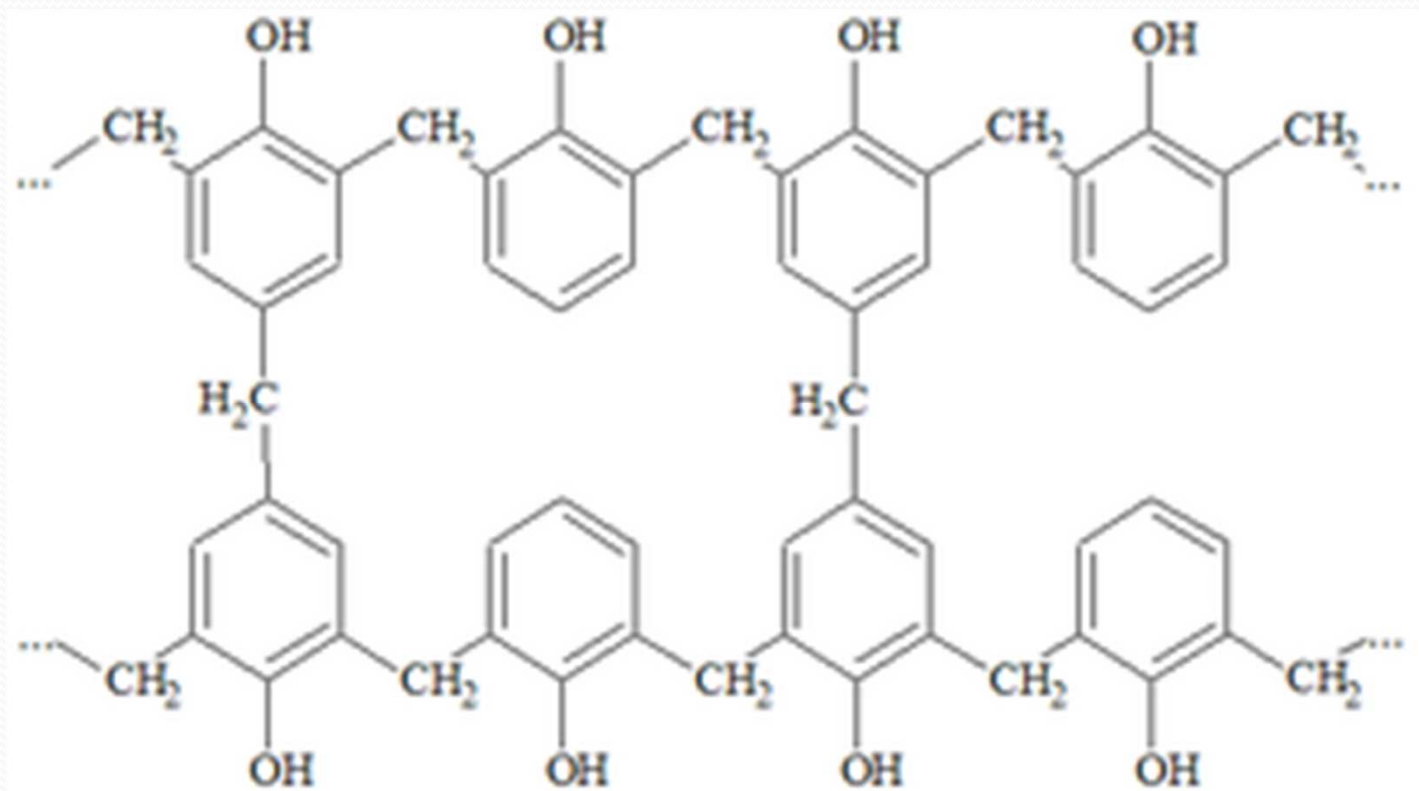
**AGED METHODOLOGIES CAN NOT BE APPLIED IN THE WAR
AGAINST FRAUDS SET UP BY INFORMED OPERATORS**



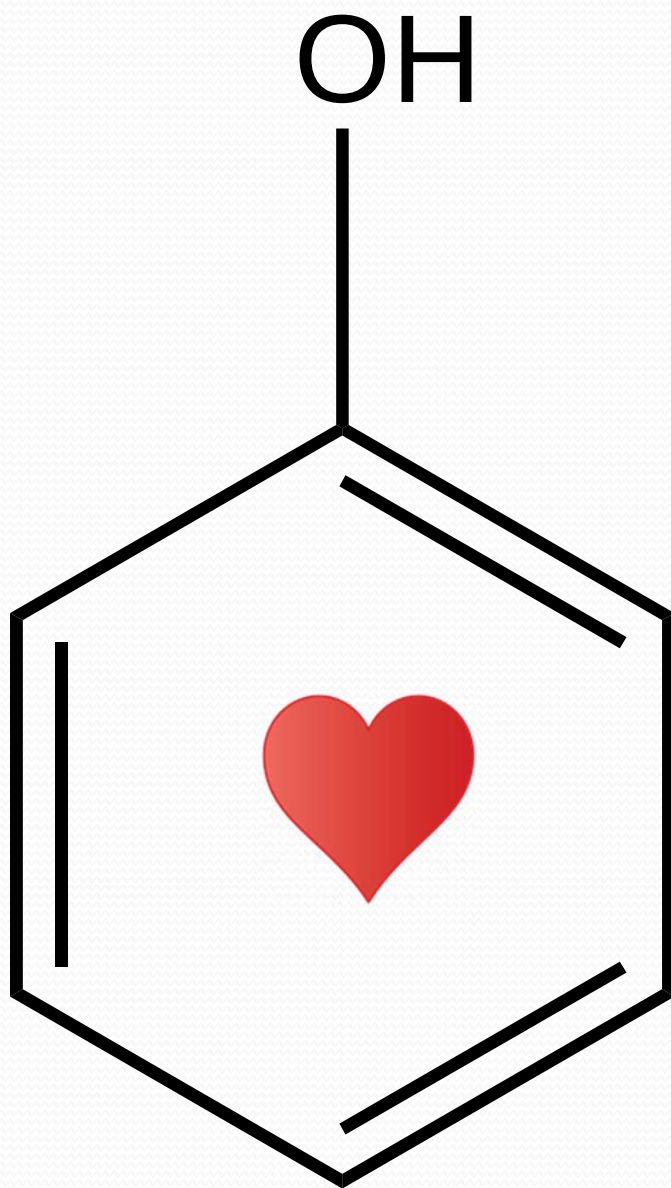
Highly sensitive detection of melamine based on reversed phase liquid chromatography mass spectrometry

WU QingQing^{1,2}, FAN KeXin¹, SHA Wei¹, RUAN HongQiang¹, ZENG Rong^{1†} & SHIEH ChiaHui^{1,2†} Key Laboratory of Systems Biology, Institute of Shanghai KeyTag Bioscience Inc., Shanghai 200233, China

In this work, we developed a highly sensitive method to detect melamine based on reversed phase liquid chromatography mass spectrometry. A mass spectrometry compatible ion pair, heptafluorobutyric acid(HFBA), was used to separate melamine by reversed phase liquid chromatography prior to electrospray mass spectrometry. The incorporation of isotope internal standard and multiple reaction monitoring improved the accuracy and linearity of quantification. Based on this strategy, the method limit of quantification was 0.1 ng/g. The limits of quantification were 8 ng/g for liquid milk and 15 ng/g for dry milk powder. This method provided a reproducible and stable approach to sensitive detection and quantification of melamine.



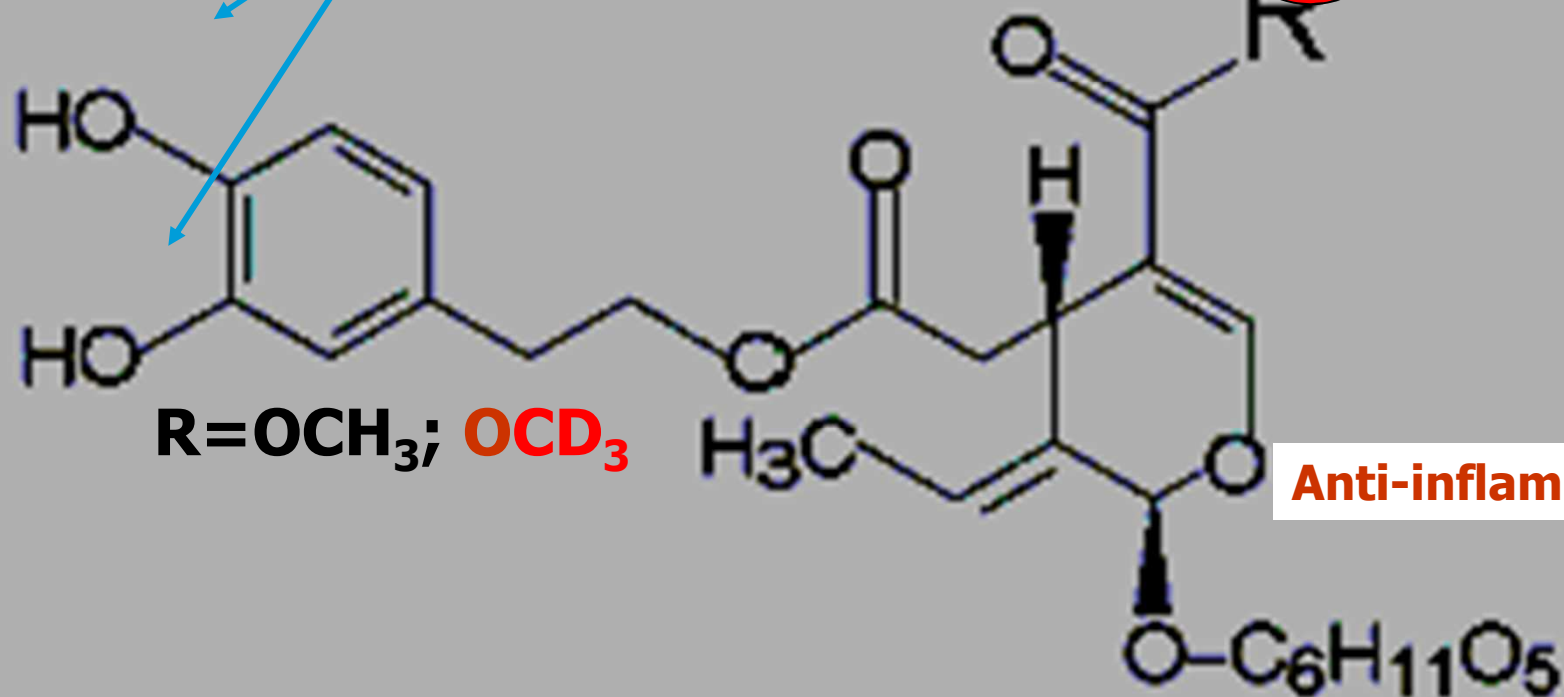
Resine fenoliche: POLIFENOLI: non si mangiano



**BIOFENOLO: HA UN
CUORE PULSANTE**

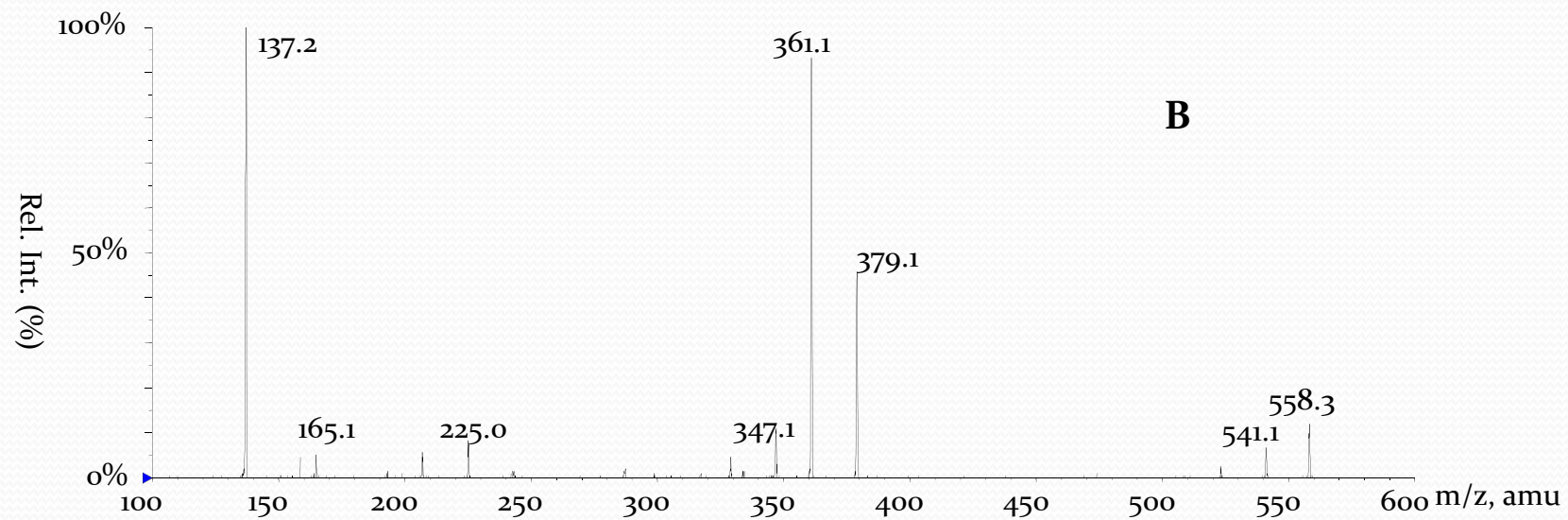
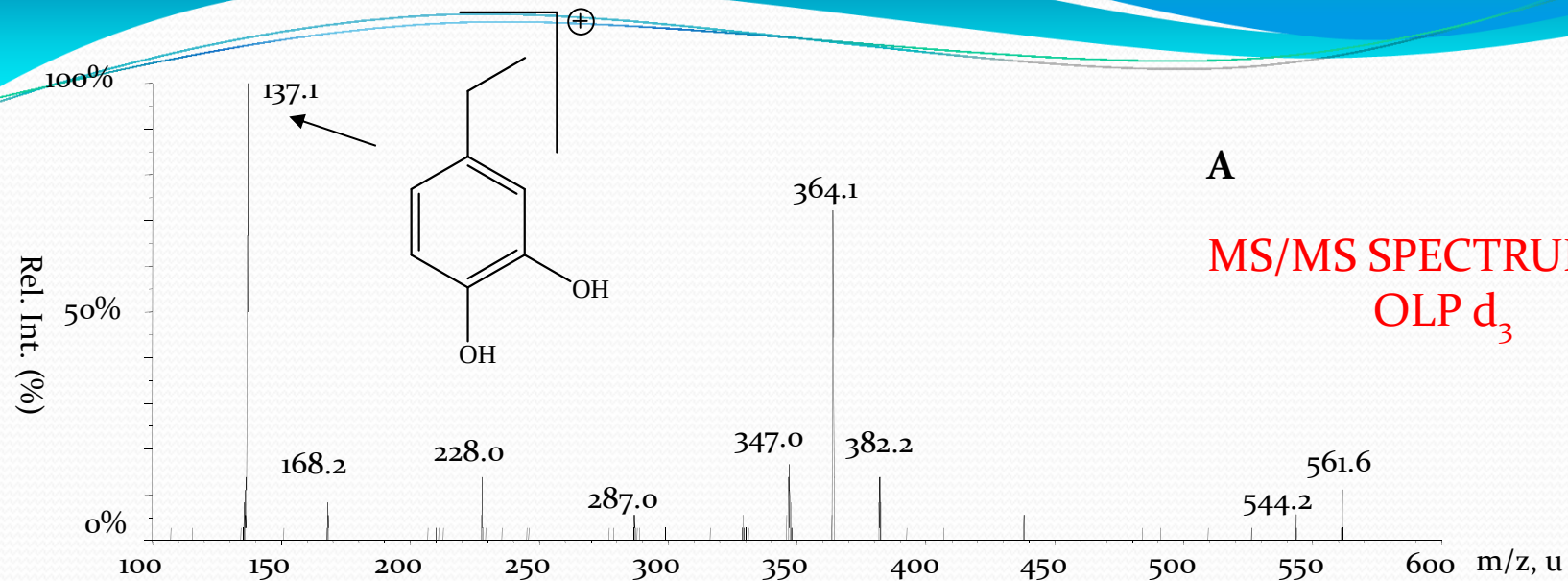
antioxidant

R



O-C₆H₁₁O₅ is O-β-D-glucopyranose

Structure of Oleuropein



OLP CONTENT OF OLIVE OILS

Cultivar	Italian region	Treatment	ppm value	RSD %
<i>Carolea</i>	Calabria	Filtered	0.357 ± 0.014	4.04
		non-filtered	0.263 ± 0.004	1.38
<i>Carolea</i>	Abruzzo	Filtered	0.245 ± 0.014	5.64
		non-filtered	0.130 ± 0.002	1.47
<i>Carolea</i>	Apulia	Filtered	0.296 ± 0.002	0.68
		non-filtered	0.225 ± 0.004	1.62
<i>Coratina</i>	Calabria	filtered	0.175 ± 0.002	1.10
		non-filtered	0.132 ± 0.005	4.06
<i>Coratina</i>	Abruzzo	filtered	0.116 ± 0.001	0.81
		non-filtered	0.093 ± 0.003	3.48
<i>Coratina</i>	Apulia	filtered	0.222 ± 0.002	1.06
		non-filtered	0.118 ± 0.001	0.80
<i>Frantoio</i>	Calabria	filtered	0.344 ± 0.008	2.26
		non-filtered	0.214 ± 0.002	0.94
<i>Frantoio</i>	Abruzzo	filtered	0.203 ± 0.001	0.71
		non-filtered	0.133 ± 0.001	0.82

Nature vol. 437 1st September 2005

Ibuprofen-like activity in extra-virgin olive oil

Enzymes in an inflammation pathway are inhibited by oleocanthal, a component of olive oil.

Gary K. Beauchamp, Russell S. **J. Keast**, Diane Morel, Jianming Lin, Jana Pika, Qiang Han, Chi-Ho Lee, Amos B. Smith, Paul A. S. Breslin

*Monell Chemical Senses Center, Department of Pharmacology and Toxicology, University of the Sciences in Philadelphia, and Department of Chemistry, University of Pennsylvania, Philadelphia, Pennsylvania 19104, USA

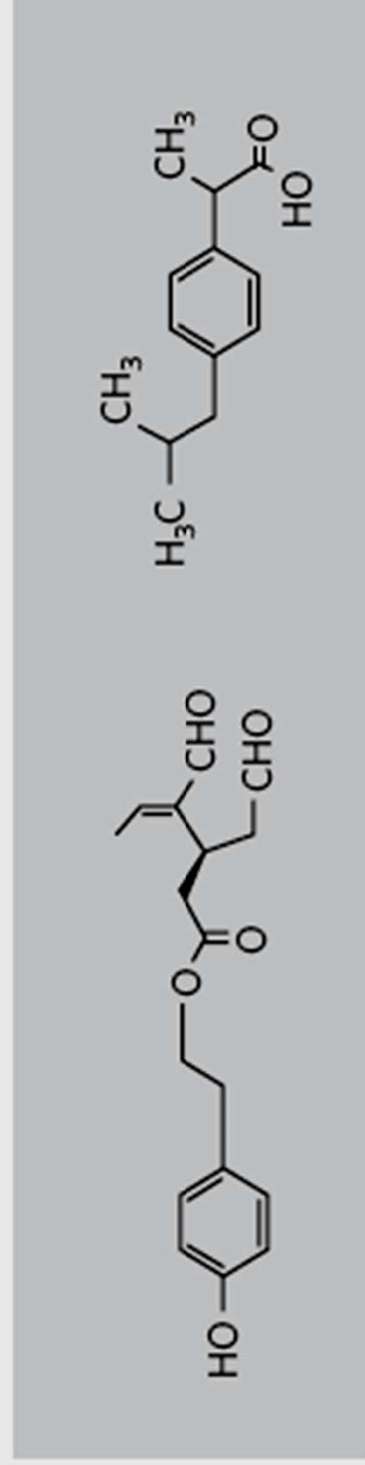
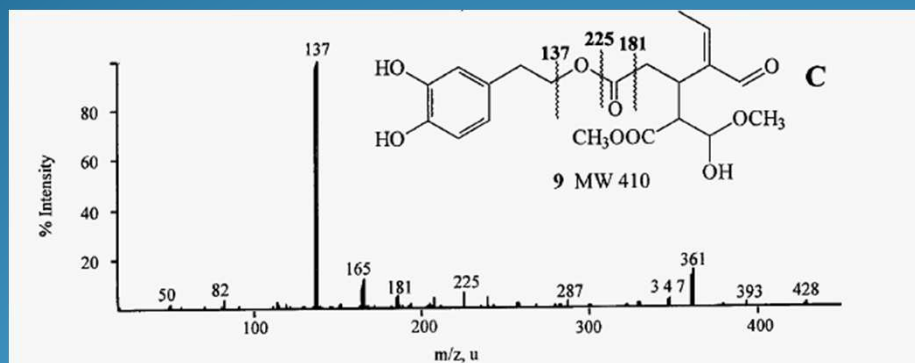
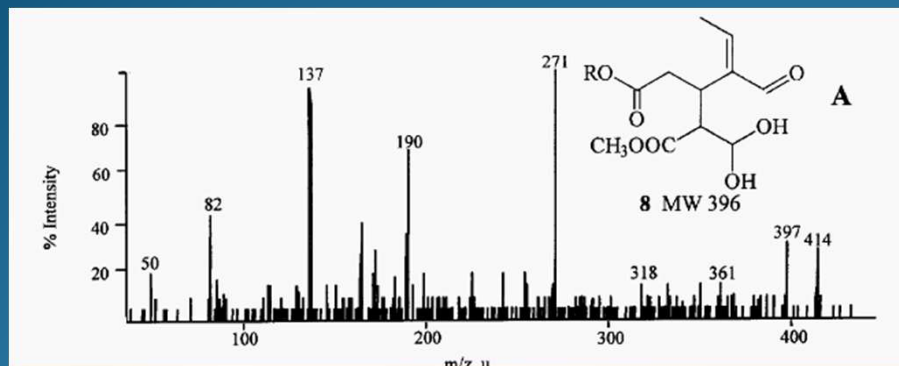
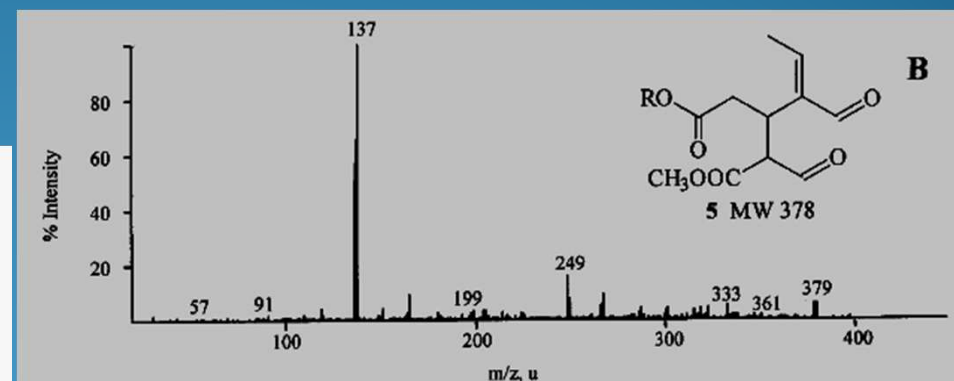


Figure 1 | Structures of (–)oleocanthal (left) and the anti-inflammatory drug ibuprofen (right). How they underpin the similar throat-irritating and pharmacological properties of the two compounds is unclear as yet.

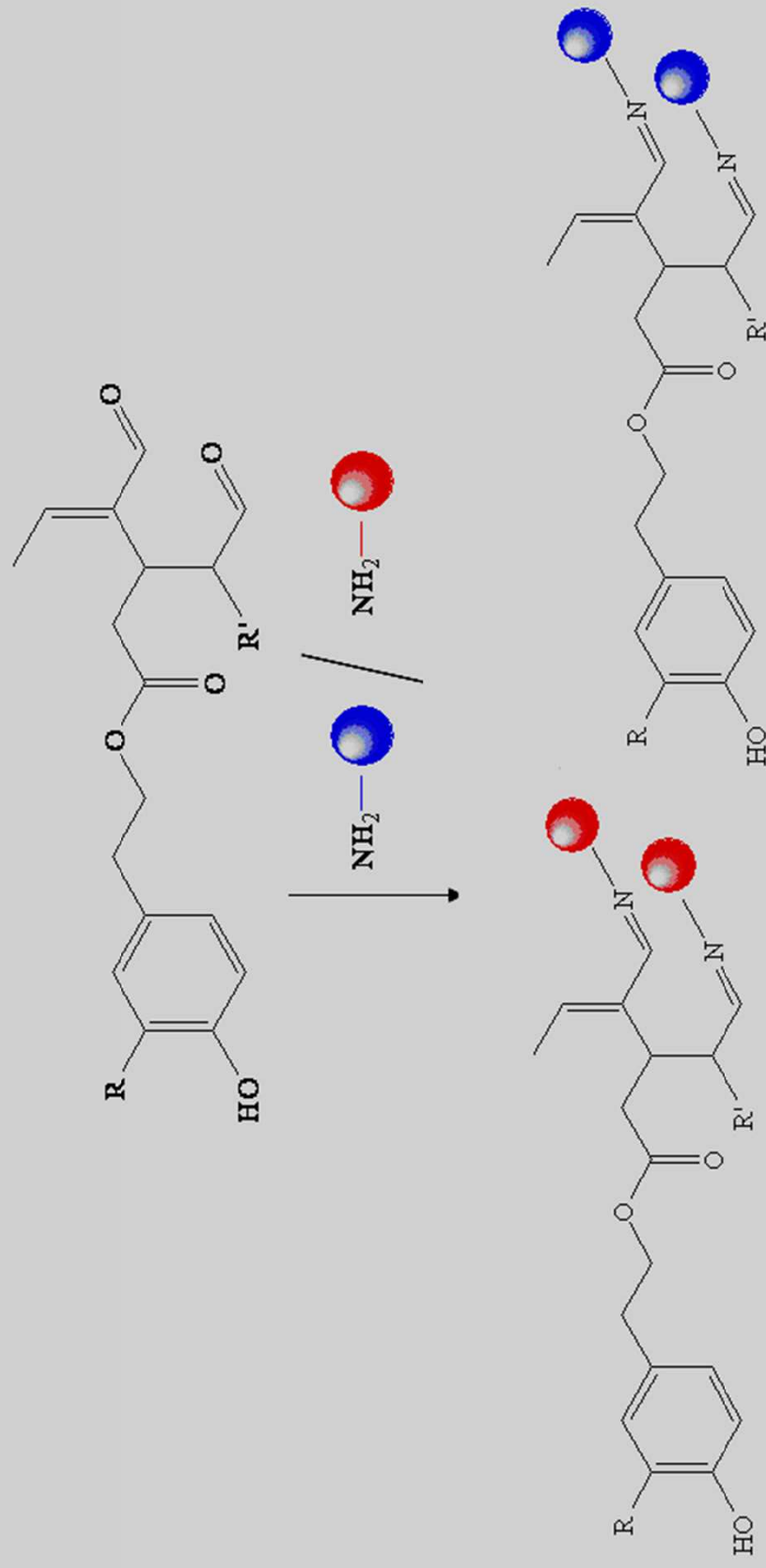
High resolved MS/MS spectra



ESI-MS/MS on ionic species from
methanolic extracts of olive oil



J. Mass Spectrom. 2000, 35, 461.

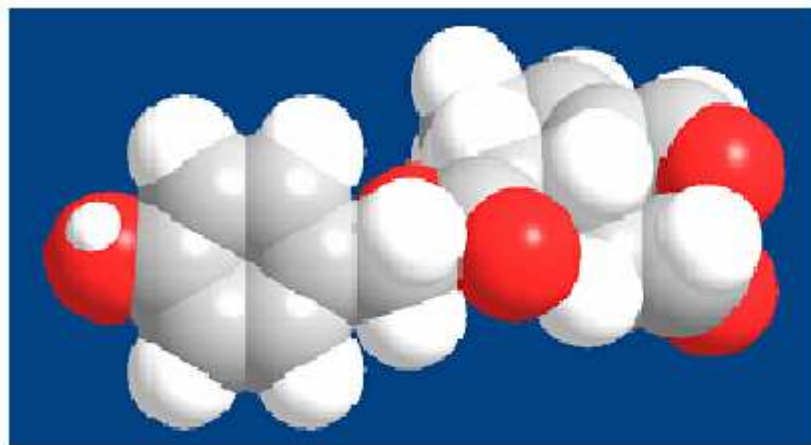


1; R = R' = H; TYR-OLPD

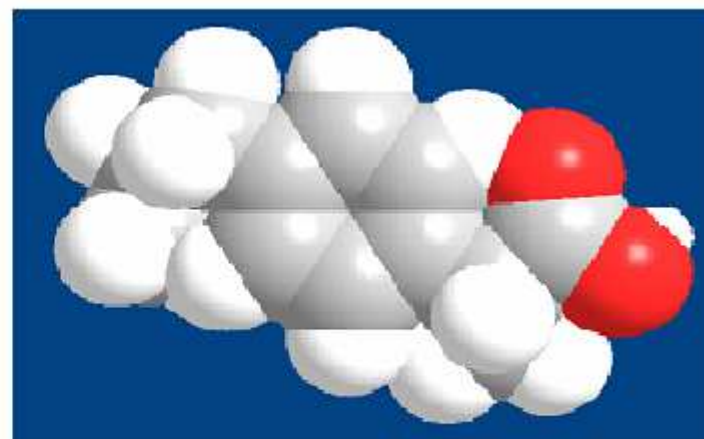
2, R = OH; R' = H; 2-(3, 4-hydroxyphenyl) ethyl (3*S*,4*E*)-4-formyl-3-(2-oxoethyl)hex-4 enoate. HTYR-OLPD

3, R = H; R' = COOCH₃; Ligstroside Aglycon

4; R = OH; R' = COOCH₃; Oleuropein Aglycon



OLEOCANTHAL



IBUPROFEN

**analytical
chemistry**

2011

High-Throughput Assay of Oleopentanedialdehydes in Extra Virgin Olive Oil by the UHPLC–ESI-MS/MS and Isotope Dilution Methods

Leonardo Di Donna, Hicham Benabdelkamel, Fabio Mazzotti, Anna Napoli, Monica Nardi, and Giovanni Sindona*

International Journal of Mass Spectrometry **2013** in press

Evaluation of dialdehydic anti-inflammatory active principles in extra-virgin olive oil by reactive paper spray mass spectrometry

Fabio Mazzotti*, Leonardo Di Donna, Domenico Taverna, Monica Nardi, Donatella Aiello, Anna Napoli, Giovanni Sindona

**Juan F. García-Reyes¹, Fabio Mazzotti^{1,2}, Jason D. Harper³, Nicholas A. Charipar³,
Sheran Oradu¹, Zheng Ouyang^{3,4}, Giovanni Sindona² and R. Graham Cooks^{1,4*}**

¹Department of Chemistry, Purdue University, West Lafayette, IN 47907, USA

²Dipartimento di Chimica, Università della Calabria, Via P. Bucci Cubo 12 C, 87036 Rende (CS), Italy

³Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN 47907, USA

⁴Center for Analytical Instrumentation Development (CAID), Purdue University, West Lafayette, IN 47907, USA

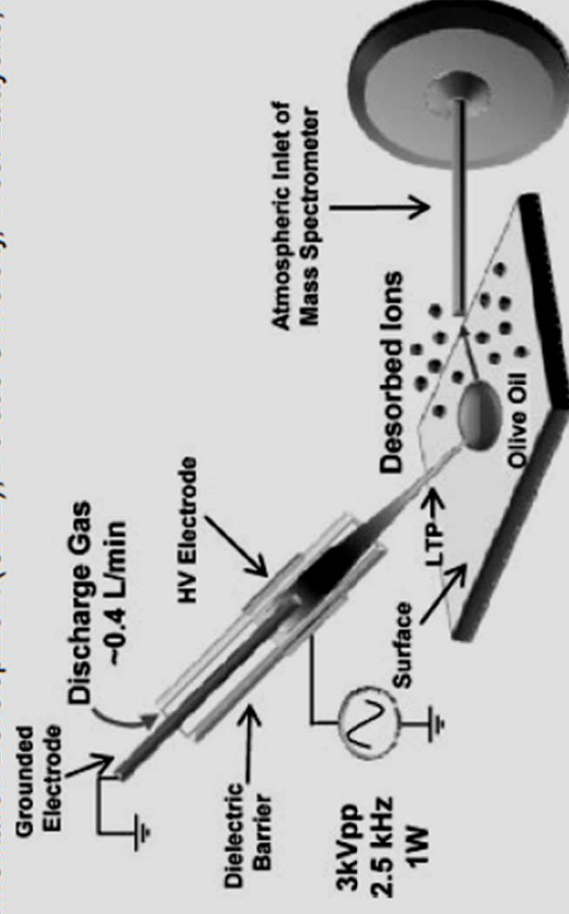
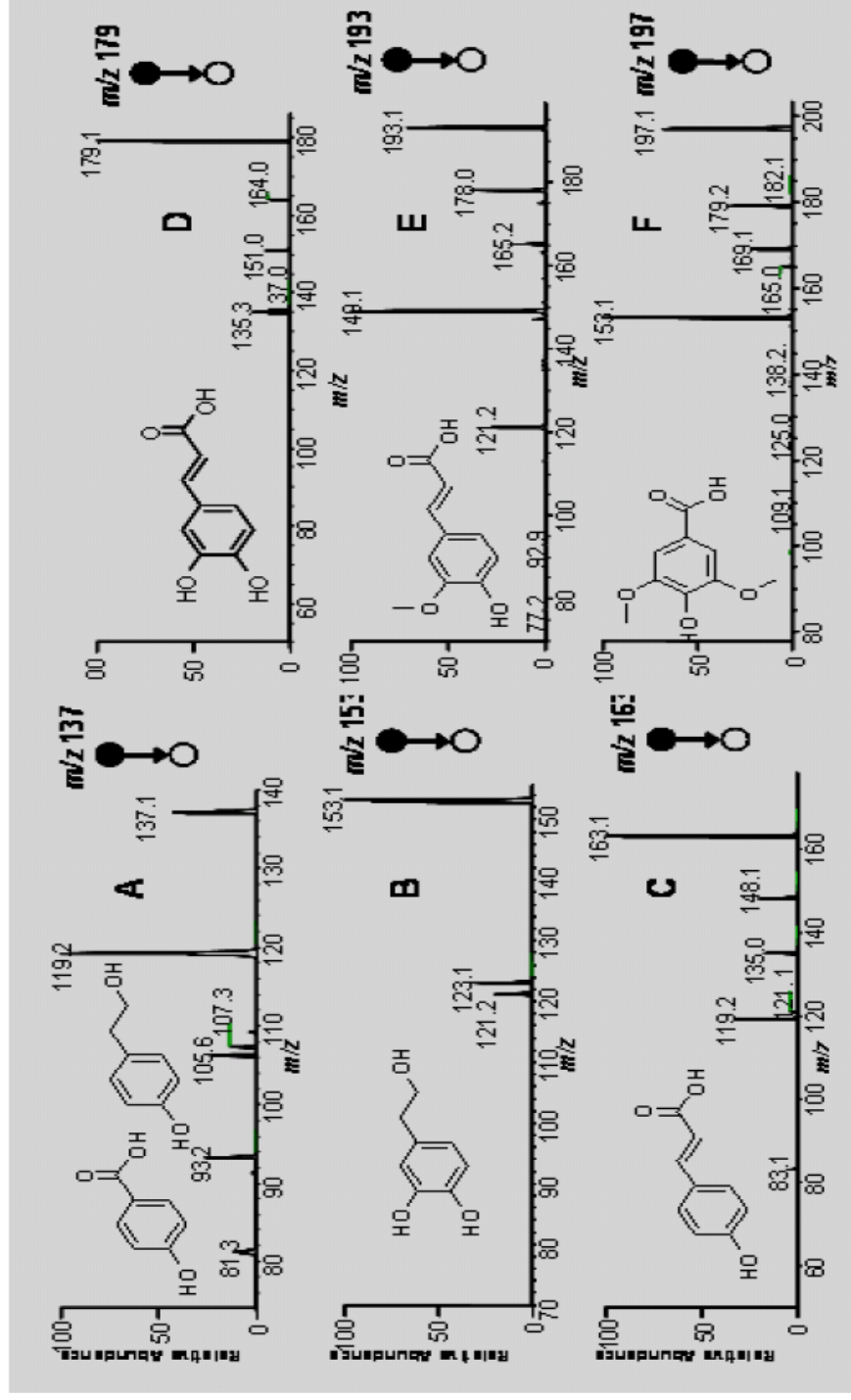


Figure 1. Schematic of the configuration of the LTP probe used for ambient ionization mass spectrometry of crude olive oil.



Direct olive oil analysis by low-temperature plasma (LTP)

ambient ionization mass spectrometry

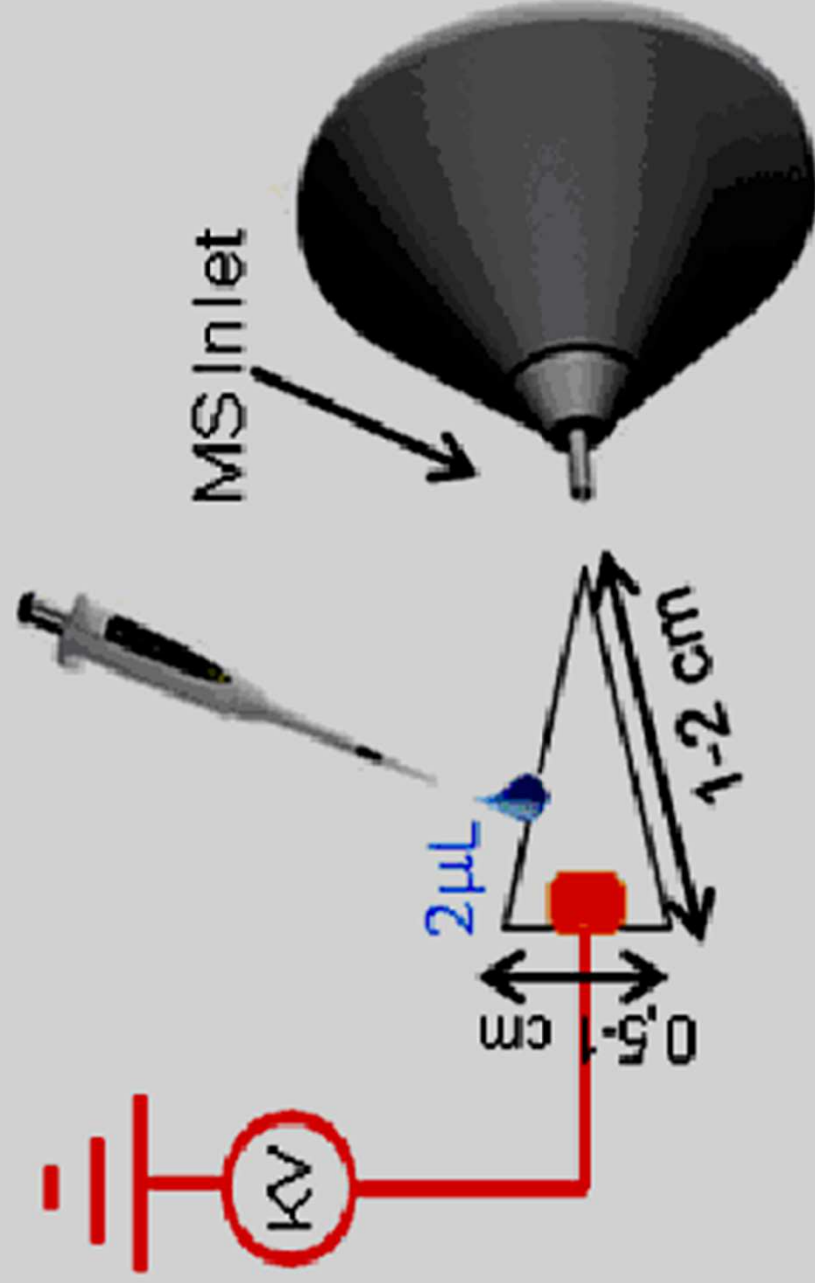
J. F. García-Reyes, F. Mazzotti, J. D. Harper, N. A. Charipar

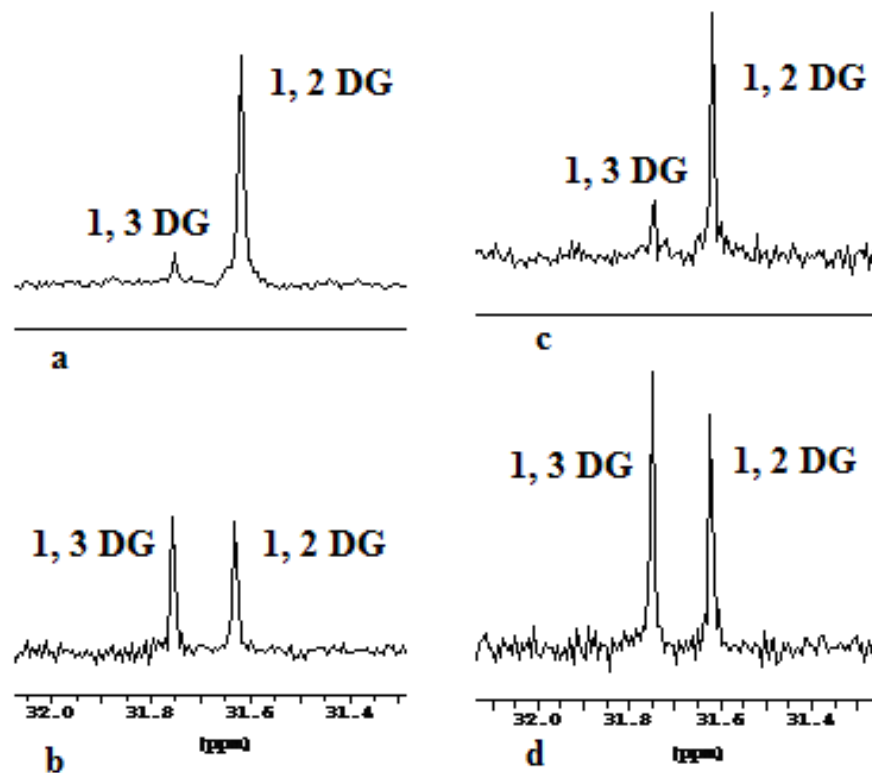
S. Oradu, Z. Ouyang, G. Sindona and R. G. Cooks

PAPER SPRAY MS/MS

N. Malaj, Z. Ouyang, G. Sindona R. G. Cooks.

Anal. Methods. 2012. 4. 1913





Expansione di spettri ^{31}P NMR della regione degli 1,2- e 1,3-DG in a) Carolea 2011-2012 (olio di 4 mesi) b) Carolea 2011-2012 (lo stesso campione dopo 1 anno) c) Cassanese 2011-2012 (olio di 4 mesi) d) Cassanese 2011-2012 (lo stesso campione dopo 1 anno). Si osserva in b) e d) un aumento notevole degli 1,3-DG rispetto agli 1,2-DG in oli di oliva di due differenti varietà calabresi (Carolea e Cassanese) invecchiati di 1 anno rispetto a oli freschi di 4 mesi, rilevabili dai diagrammi in (a) e (c) in cui il picco degli 1,3-DG è minore del 15%



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Converti Selezione

FOOD CHAINS

The Opinion Pages

SHARE

and shipped to Italy, the world's largest importer of olive oil.

http://www.microsofttranslator.com/BV.aspx?ref=IE&Activity&a=http%3A%2F%2Fwww.nytimes.com%2Finteractive%2F2014%2F01%2F24%2Fopinion%2Ffood-chains-extra-virgin-suicide.html%3F_r%3D0
100% 12:53 29/01/2014

Olio d'oliva, ecco il metodo scientifico che toglie ogni dubbio su qualità e origine

I ricercatori dell'Università della Calabria hanno perfezionato una tecnica basata sulla risonanza magnetica e ora in grado di rivelare freschezza e provenienza del prodotto attraverso l'indagine molecolare. "Una risposta alle vignette del *New York Times*, ma anche un segnale a chi manda nei supermercati oli extravergini a meno di 3 euro al chilo"

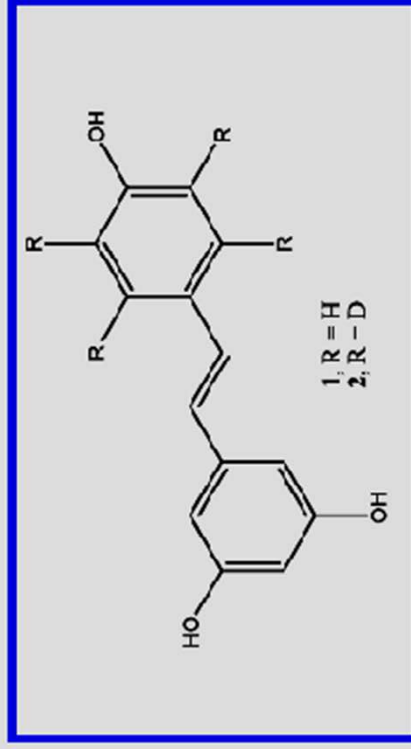
Lo leggo dopo

COSENZA - Arriva dall'Università della Calabria la prima risposta scientifica al duro colpo inferto al "Made in Italy" dalle 15 tavole illustrate con cui a fine gennaio il *New York Times* ha spiegato agli americani (http://www.repubblica.it/salute/alimentazione/2014/01/31/news/olio_truffa-77344619/?ref=search) come tanto di quell'olio extravergine di oliva orgoglio tricolore sia in realtà risultato di voragini e scorrette sofisticazioni. Olio spacciato per italiano e invece importato da Spagna, Grecia, Tunisia, Marocco, per essere manipolato, miscelato, reimpastigliato e immesso sul mercato in modo fraudolento.

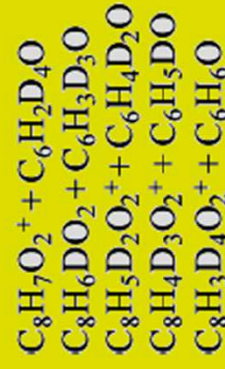
Ebbene, i ricercatori Giuseppina De Luca e Loredana Maiuolo, assieme al direttore del dipartimento di Chimica dell'ateneo di Arcavacata, Giovanni Sindona, hanno perfezionato una tecnica già in uso, basata sulla metodologia della risonanza magnetica, che consente ora di stabilire, con precisione assoluta, la freschezza dell'olio d'oliva, oltre a tracciarne l'origine senza ombra di dubbio. Il brevetto, già autorizzato dall'Università, sarà depositato la prossima settimana e si annuncia come una novità assoluta nel panorama delle attività e delle iniziative finalizzate ad assicurare la migliore qualità di prodotti, come appunto l'olio d'oliva, che hanno un larghissimo uso quotidiano.

AUDIO: Tom Mueller: "Vi spiego lo scandalo dell'olio"

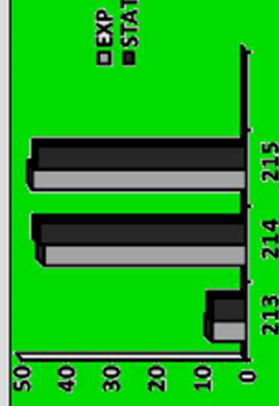
(http://www.repubblica.it/economia/2014/02/04/news/tom_mueller_e_il_suo_extravergine_il_sublime_e_scandalo_mondo_dell_olio_d_oliva-77662767/?ref=search)



Pathway I



Pathway II



Pathway III

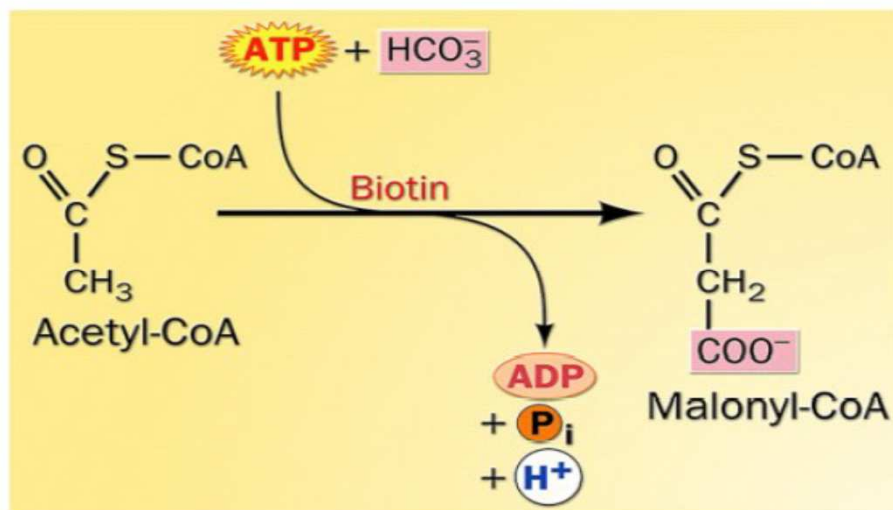


Table 3. Amount of Resveratrol Found in Red Wine by the SIM Approach

wine	<i>trans</i> - resveratrol (ppm)	RSD %	<i>cis</i> - resveratrol (ppm)	RSD %
Dragone Lento	6.79 ± 0.49	7.25	1.43 ± 0.05	3.25
Federico II Lento	4.82 ± 0.41	8.46	1.64 ± 0.07	4.19
Riserva Lento	14.46 ± 0.32	2.19	2.46 ± 0.07	2.66
gaglioppo Statti	13.08 ± 0.90	6.89	2.86 ± 0.07	2.39
arvino Statti	10.78 ± 0.91	8.47	3.15 ± 0.19	6.14
I Gelsi Statti	20.39 ± 1.45	7.10	4.07 ± 0.23	5.72
Ceppereto	3.26 ± 0.16	4.87	1.09 ± 0.02	1.88
Cirò Classico	2.66 ± 0.03	0.98		
Elios	8.48 ± 0.42	4.96	1.20 ± 0.03	2.59
Chianti	2.70 ± 0.20	7.50		
Chateau Beni	9.08 ± 0.54	5.98	1.53 ± 0.08	5.21
Chougrane (Algeria)				
Sidi Brahim (Morocco)	2.02 ± 0.06	3.22	0.56 ± 0.02	3.68

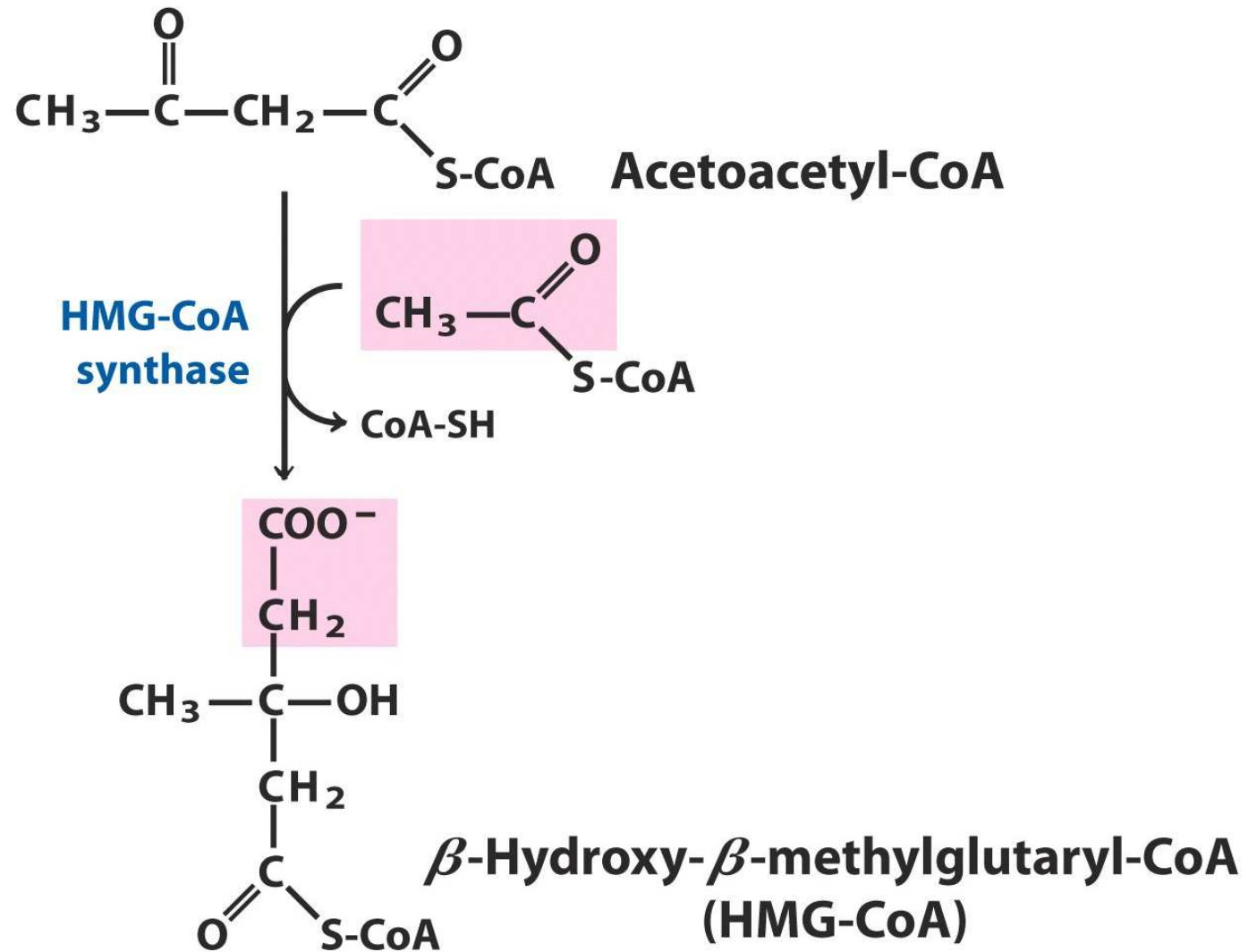
The retention time, UV behavior, negative and positive MS-MS spectra and the presence of neohesperidosides in BJ lead to assume that peak 4, 6 and 7 could be neoeriocitrin, naringin and hesperidin esterified with two **oxalic acid moieties**, respectively.

Reaction catalyzed by Acetyl CoA Carboxylase



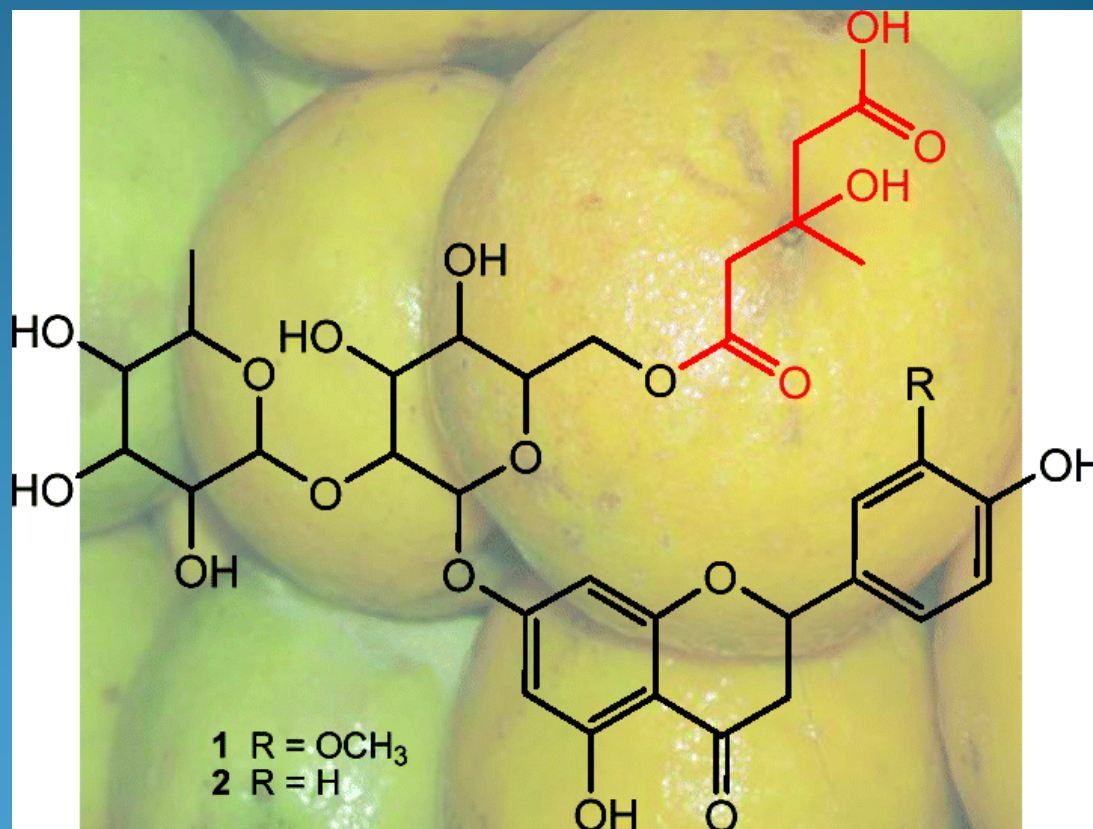
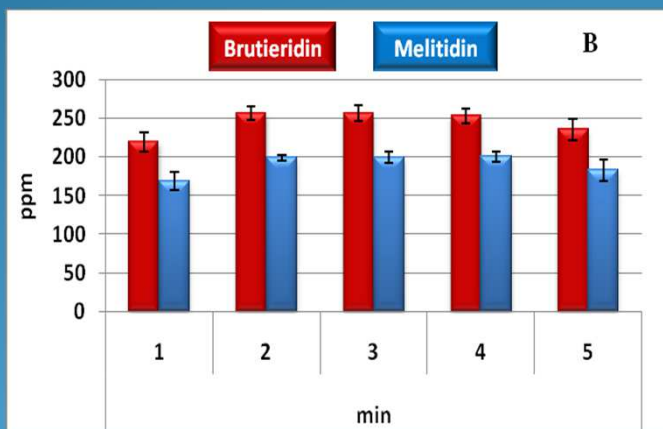
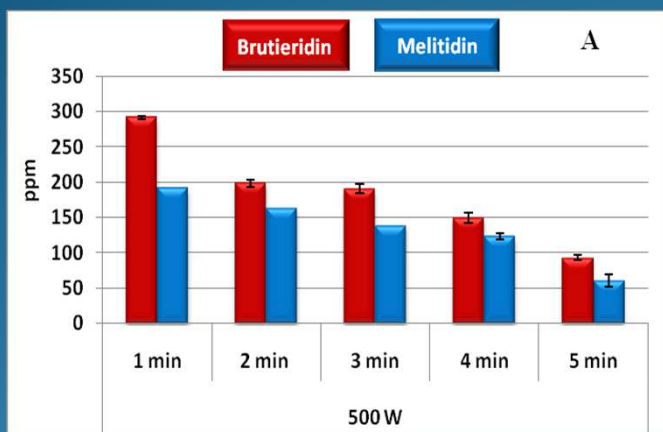
Activation of acetate : Acetyl-CoA to malonyl CoA

HMG-CoA synthase



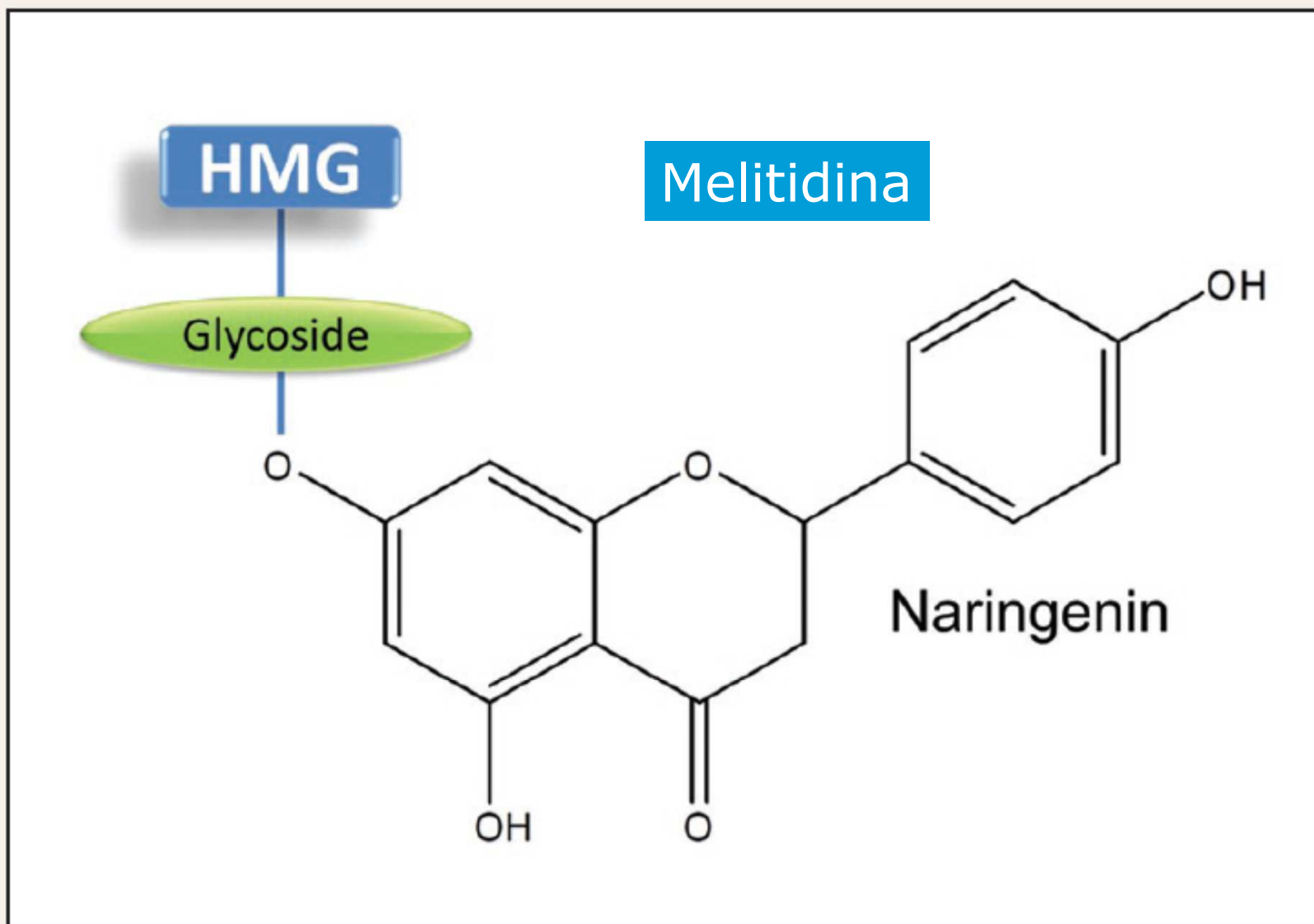
Biotecnologie dei prodotti naturali

L'albedo del Bergamotto è un rifiuto delle industrie della cosmesi che contiene le statine **1** e **2**. La loro attività anticolesterolemica è stata dimostrata *in vivo*, *in vitro* e mediante simulazioni al computer.



Contenuto (ppm) di Brutieridina (**1**) e Melitidina (**2**) dopo cinque diversi trattamenti (1-5) con (A) forno a microonde (B) acqua calda

Bioactive Flavonoids of Bergamot



HEALTHY FRAUD

PrintPS-Lemon+1%Berg SPE

NL: 5,36E1

