

Sample preparation for MOSH/MOAH analysis: applicability of current methods and analytical limits

Aleksandra Gorska, Carlo Bellinghieri, Marco Beccaria, Giorgia Purcaro

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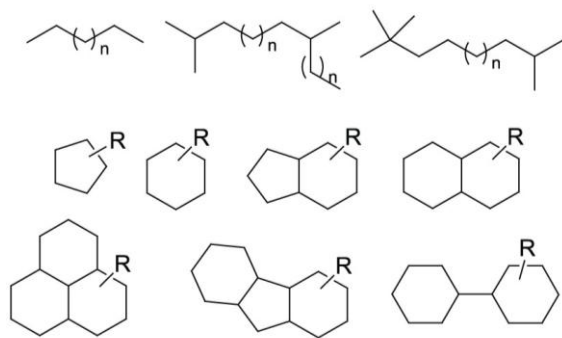
Context



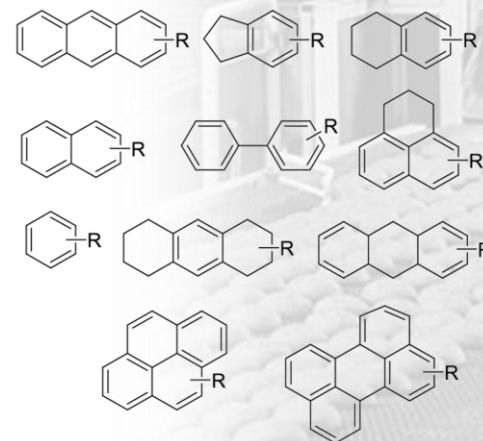
MOSH – mineral oil **saturated** hydrocarbons

MOAH – mineral oil **aromatic** hydrocarbons

- Ubiquitous, petroleum-derived **food contaminants**
- Enter the food chain through various pathways: contact with contaminated **food packaging, machinery lubricants**, or because of **poor storage practices**, ...



MOSH: Linear and branched alkanes
Branched cycloalkanes (C10-C50)



MOAH: Branched mono- or polyaromatic compounds (C10-C50)

Appear as complex mixtures of variable composition



Risk assessment



Risk assessments of mineral oil hydrocarbons in food (2012 & 2023)



MOSH

Generally considered **of no concern** at the
concentrations found today in food
Can **accumulate** in the human body.



MOAH

Considered of concern:
genotoxicity of **MOAH with ≥ 3 AR**
Absence of reliable toxicity data for **1-2 AR MOAH**



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Regulation (EU) 2023/915 limiting total MOAH levels in food
Entering into force in 2027



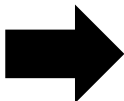
Requirements for method of analysis



Regulation (EC) No 333/2007

defining the **requirements for methods of sampling and analysis**
for the control of levels of MOH in foodstuffs

PARAMETER	CRITERIA
SPECIFICITY	Reliable MOSH/MOAH quantification, excluding co-extracted interferences ; GC×GC characterisation when needed
RECOVERY	70–120% ; lower values acceptable for alumina clean-up for MOSH or epoxidation for MOAH.
REPRODUCIBILITY	≤ 20% ; higher values may be acceptable for products with endogenous interferences.
LOQ	Based on declared or determined fat/oil content: < 4% fat/oil: ≤ 0.50 mg/kg; 4–50% fat/oil: ≤ 1.0 mg/kg, or ≤ ML if ML ≤ 0.50 mg/kg; 50% fat/oil: ≤ 2.0 mg/kg; spices, dried herbs/tea/infusions, food supplements, essential oils, fish/marine oils, algae oils: ≤ 5.0 mg/kg.



Analyses performed using methods validated to meet these criteria are expeted to yield comparable results



Same method, same criteria, different results

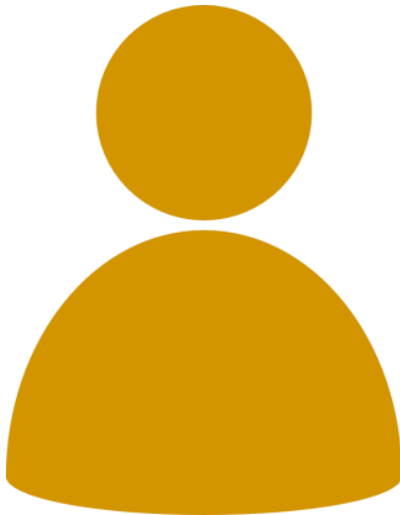
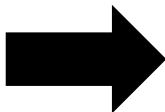
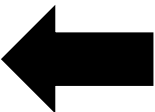


« There are < 2 mg/kg MOAH »

COMPLIANT



Laboratory A



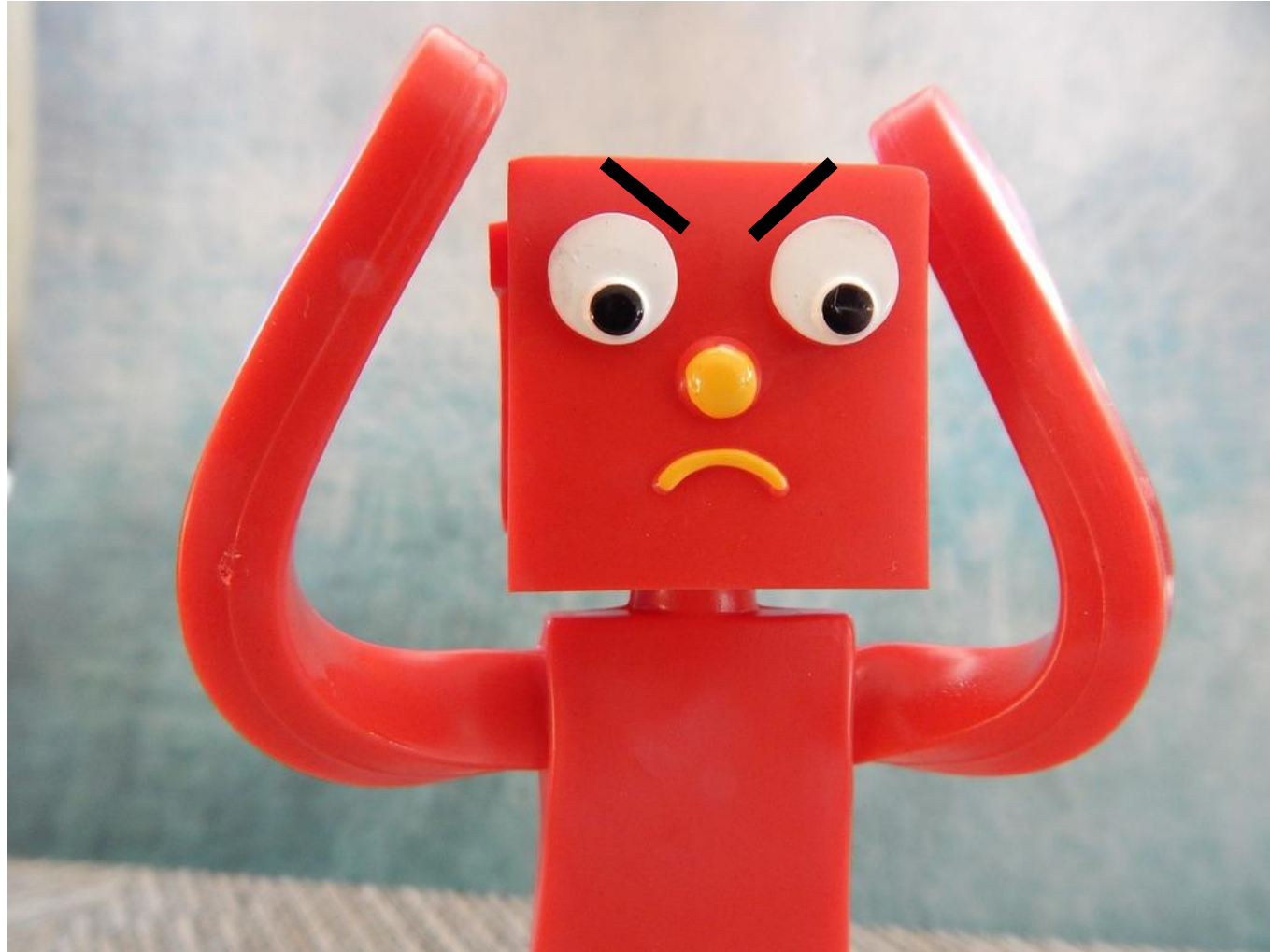
Laboratory B

« There are 16.3 mg/kg MOAH »

NON-COMPLIANT



Angry customer!





Same method, same criteria, different results



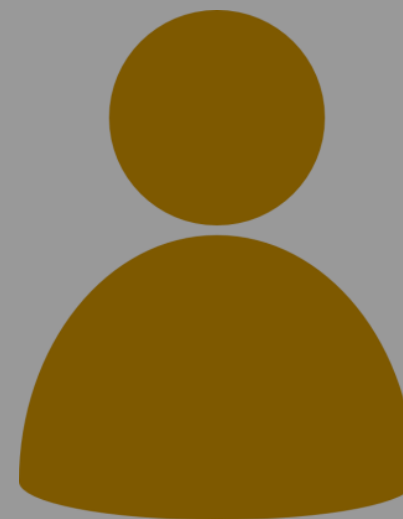
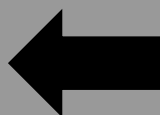
« The

Why this discrepancy?

» OAH »



Laboratory A



Laboratory B



Method of analysis



**Food sample
(e.g., oil)**



Method of analysis



Saponification +
L/L **extraction** (C6)

Food sample
(e.g., oil)

Can be a source of discrepancy

Depending on the saponification procedure
used, variations in the results are possible

Discussed in my poster **FOOD-10**

Application of an optimized microwave-assisted saponification/extraction method for MOSH/MOAH analysis in food and food contact matrices

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INTRODUCTION

- Mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) are frequently detected contaminants in foods, particularly in lipid-rich matrices [1]. Determination of MOSH and MOAH in lipid-containing matrices requires a **saponification/extraction** step in order to reach regulatory-complaint limits of quantification (LOQs), i.e., **<2 mg/kg** [2]. However, saponification/extraction can induce **discrepancies** in MOSH/MOAH internal standard (IS) recoveries, particularly for MOAH ISs, with potential impact on quantitative accuracy.
- Ideally, MOSH IS ratios should correspond to $n\text{-C}_{11}/\text{C}_{19}\text{Cy} = (2 \times n\text{-C}_{13})/\text{C}_{19}\text{Cy} = (\text{Cho}/2)/\text{C}_{19}\text{Cy} = 1.00$, while **MOAH IS ratios** should correspond to $5\text{B}/2\text{MN} = 1\text{MN}/2\text{MN} = \text{TBB}/2\text{MN} = (\text{Per}/2)/2\text{MN} = 1.00$.
- In practice, MOAH IS ratios, especially TBB/2MN, are often shifted above the theoretical value.
- A microwave-assisted saponification/extraction (MASE) method has previously been optimized to improve the consistency of ISs recovery through optimized solvent composition, **reaching TBB/2MN ratios closer to 1.00** [3]. Variants were later proposed for **high-melting fats** [4], **meat samples** [5], and **miniaturized extraction of adipose tissue** [6].
- The final protocol uses 1 g sample, 10 mL KOH 2 M in EtOH/H₂O 1:1 (v/v), and 10 mL n-hexane (n-C₆), at 120 °C for 20 min. **Maintaining the EtOH/H₂O ratio is important to limit IS discrepancies** [3].
- OBJECTIVE OF THE WORK** – To assess the transposability of the MASE method across diverse matrices, including food additives, seafood, insects, and jute bags, and to propose practical variants for matrix-specific challenges.

MATERIALS & METHODS

FOOD OR Food Contact Material	ORIGINAL METHOD (ORIG)	MASE 120 °C 20 min				Wash and re-extraction			EVALUATION
		Sample	2M KOH in EtOH/H ₂ O 1:1	n-C ₆		Post-MASE addition of H ₂ O (directly to MW vessel)	Re-extraction	Wash of combined n-C ₆ extracts with H ₂ O	
SAPONIFICATION/EXTRACTION	VARIANT 1 (EMUL) FOR MATRICES FORMING HYDROPHOBIC SOAPS	ORIG	1 g	10 mL	10 mL	Yes, +20 mL	5 mL n-C ₆	No	• Practicality of the workflow • IS behaviour LOQs • Sample representativeness
		EMUL	1 g	10 mL	10 mL	No	5 mL n-C ₆	Yes, + 3×10 mL	
HPLC/GC+GC-FID ANALYSIS	VARIANT 2 (MINI) FOR LIMITED SAMPLE	MINI	0.25 g	2.5 mL	2.5 mL	Yes, +5 mL H ₂ O	1 mL n-C ₆	No	

RESULTS & DISCUSSION

I. PRACTICAL CHALLENGES ENCOUNTERED WITH THE ORIGINAL METHOD AND SOLUTIONS

ORIGINAL METHOD

ISSUE NO. 1 WITH THE ORIGINAL METHOD

$n\text{-C}_6$

Hydroalcoholic phase after post-MASE addition of H₂O (20 mL)

Leaf situation

E472a

Formation of a saponification products (soaps) insoluble in the hydroalcoholic phase.

Note: E472a is an emulsifier consisting of mono- and diacyl tartaric acid esters of mono- and diglycerides of fatty acids.

Other matrices give a liquid viscous middle phase.

HYPOTHESIS

The dispersed solid (or 3rd phase) are saponification products (soaps) insoluble in the hydroalcoholic phase.

Note: E472a is an emulsifier consisting of mono- and diacyl tartaric acid esters of mono- and diglycerides of fatty acids.

SOLUTION

Do not increase EtOH/H₂O ratio above 1.0 in the vessel, as leads to discrepancies in IS recoveries.

In practice: avoid the extra addition of H₂O to the MW vessel after MASE.

EMUL METHOD

Next phase separation

Note: the organic phase needs to be washed after collection in a separate flask

ISSUE NO. 2 WITH THE ORIGINAL METHOD

Limited sample availability prevented proportional miniaturization, as solvent volumes could not be reduced due to microwave system constraints. This could have lowered the sample-to-solvent ratio, increasing concentration factors and the relative impact of procedural blanks, which compromised low LOQs.

SOLUTION

Proportional 4× scale-down of sample mass and solvent volumes using synthWAVE microwave system (Milestone Srl, Sorisole, Italy).

MINI METHOD

250 mg per extraction tube (instead of 1 g)

II. EVALUATION OF METHOD VARIANTS

PERFORMANCES OF EMUL vs ORIG?

Comparison of MOAH ISs ratios

Comparison of all ISs peak areas

EMUL METHOD

ORIG and EMUL gave comparable IS peak areas and IS peak-area ratios, suggesting similar recoveries and preserved IS behaviour. Both methods can therefore be considered equivalent for matrices with good phase separation. When a significant third phase is formed, EMUL is preferred because it improves phase separation.

FOR WHICH MATRICES IS EMUL METHOD RELEVANT?

EMUL method was particularly useful for the analysis of **emulsifiers** which form fatty acid salts that contain high proportions of long chain fatty acids (poorly soluble in the hydroalcoholic phase), e.g., E471, E472, E481, lecithins, ...

GC+GC-FID chromatograms obtained with EMUL method (left: lecithin, right: E472b)

MOSH: 16.2 mg/kg, MOAH: 5.5 mg/kg, MOSH: 7.6 mg/kg, MOAH: <LOQ

EMUL showed also relevant for the analysis of **jute bags** → the separate washing allowed to eliminate most floating particulates from the organic phase.

Compared with ORIG, EMUL markedly improves phase separation, but is slightly longer due to repeated washing steps needed to remove soaps partially partitioning into n-C₆.

PERFORMANCES OF MINI vs ORIG?

LOQ_{mini} ~ LOQ_{orig} since the final sample concentration factor is maintained. This was demonstrated by Albendea *et al.*, 2025 [6].

ISs recoveries are not affected compared to ORIG since the solvent proportions are the same.

MINI method is **faster**, as lower solvent volumes need to be handled, transferred. MINI method also **reduces solvent consumption by a factor of 4**.

MINI METHOD

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ISs recoveries are not affected compared to ORIG since the solvent proportions are the same.

MINI method is **faster**, as lower solvent volumes need to be handled, transferred. MINI method also **reduces solvent consumption by a factor of 4**.

FOR WHICH MATRICES IS MINI METHOD RELEVANT?

MINI is relevant when sample mass is limited or when samples are sufficiently homogeneous.

It was successfully applied to Tenebrio molitor larvae, sea urchin gonads, and adipose tissue.

It is not appropriate for heterogeneous batches, such as jute bags, where higher sample masses are needed for representativeness.

GC+GC-FID chromatograms

See urchin gonads

MOSH: 5.5 mg/kg, MOAH: <LOQ

Dried T. molitor larvae

CONCLUSION

- Overall, MASE has so far shown good versatility for MOSH/MOAH analysis across the matrices investigated.
- The **ORIG, EMUL and MINI variants allow the workflow to be adapted to different matrix behaviours and sample availability**.
- Further work will extend the applicability study to additional matrices, offer

REFERENCES

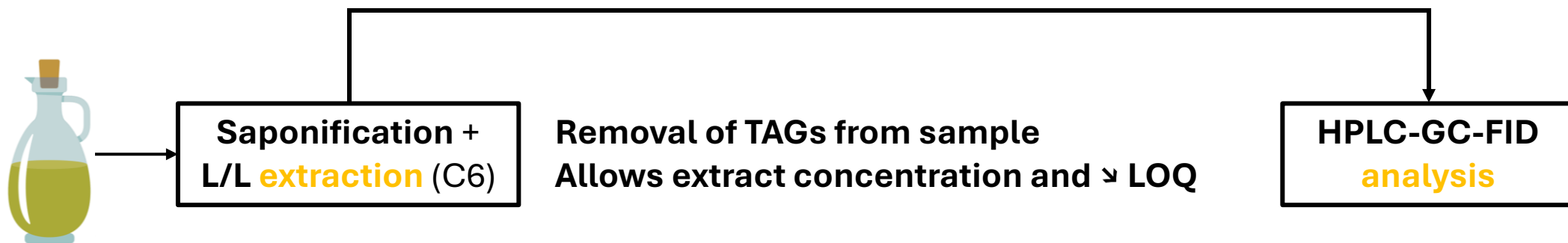
- [1] EFSA CONTAM Panel, EFSA J. **2023**, 21, 1–143.
[2] Bratnova, Robouch and Hoekstra, JRC Technical Report. **2023**.
[3] Bauwens and Purcaro, Anal. Chim. Acta **2024**, 1312, 342788.
[4] Gorska *et al.*, Analyst **2025**, 150, 5190–5200.
[5] Albendea and Purcaro, Food Chem. **2025**, 480, 143880.
[6] Albendea, Gorska and Purcaro, J. Chromatogr. Open **2025**, 8, 100267.

ACKNOWLEDGMENTS

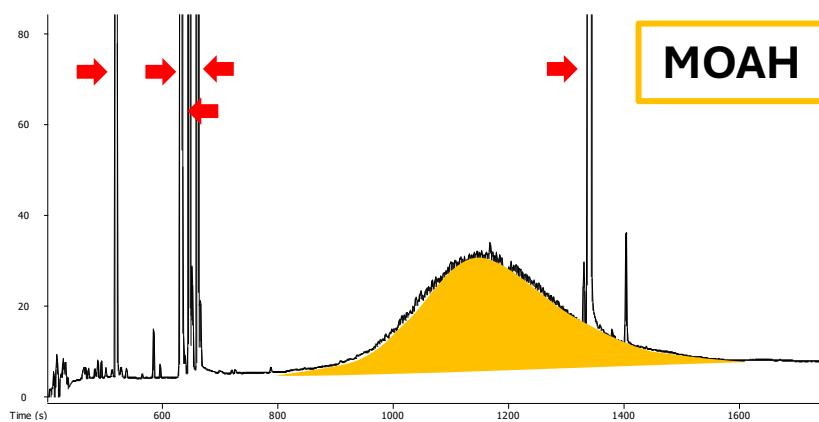
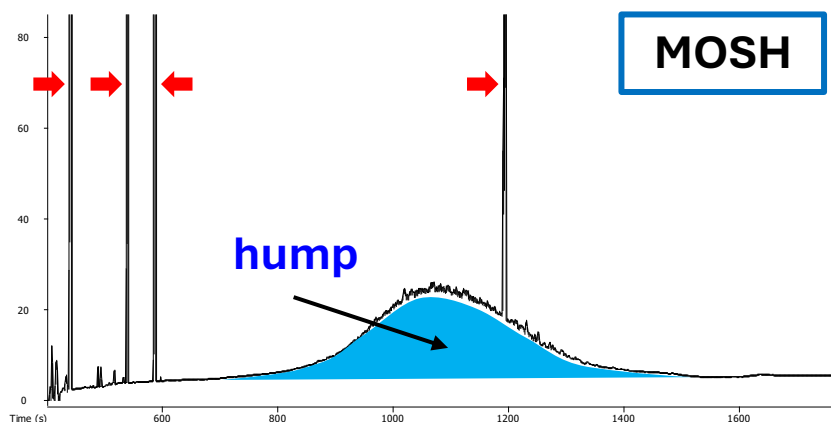
Method for low LOQ



Method of analysis



- Food sample (e.g., oil)**
- **HPLC**: used as a « sample prep » step to **separate MOSH from MOAH** (& retain polar interferences)
 - MOSH & MOAH are **injected separately in GC-FID** → elute as a **hump**
 - **Quantification and quality control** of the correct transfer between HPLC and GC is performed using various **internal standards** (4 for MOSH, 5 for MOAH)



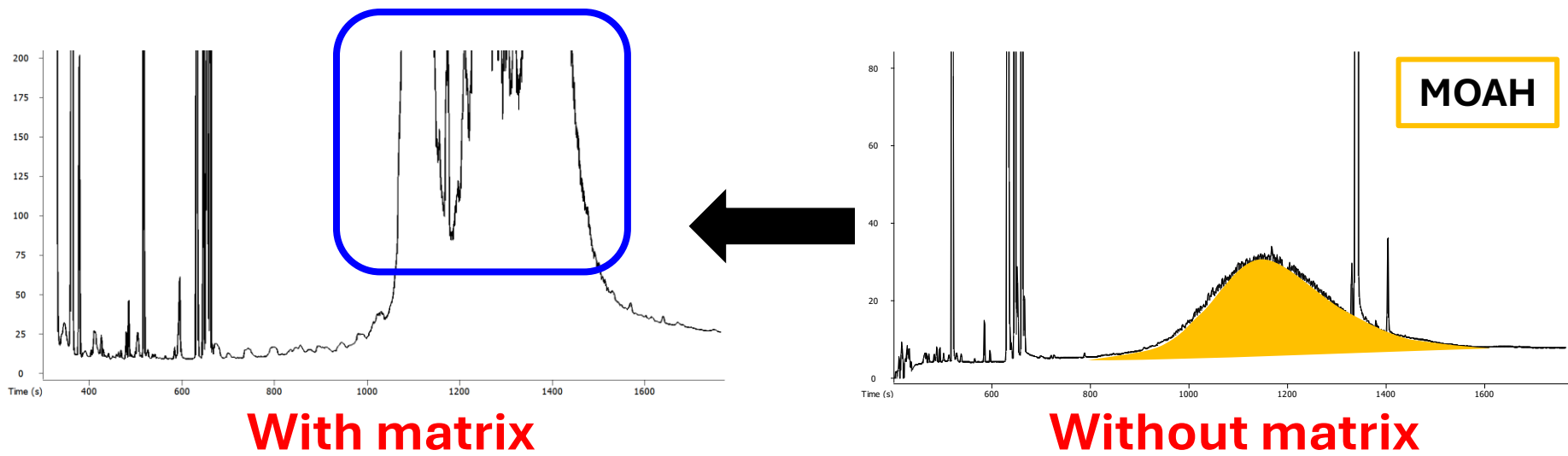


Method of analysis



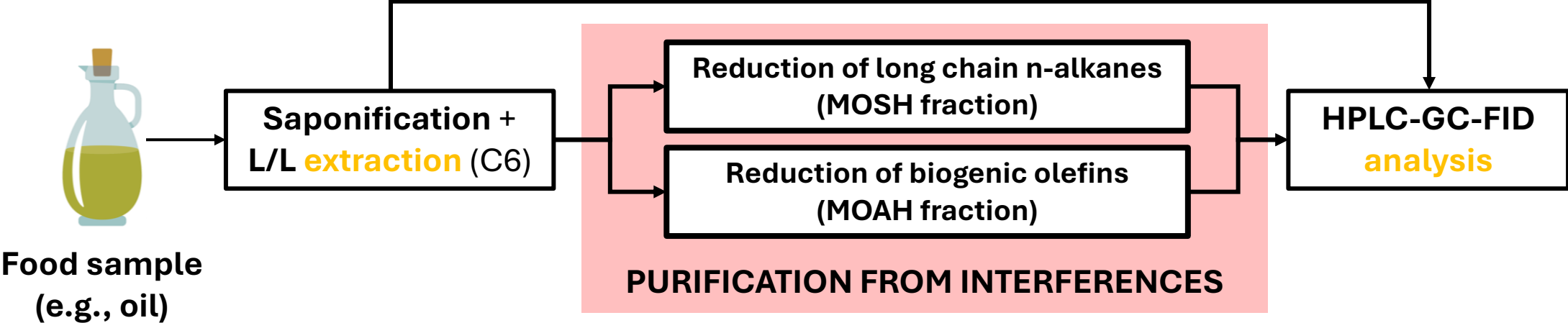
Co-extracted interferences

Do not allow to integrate the hump

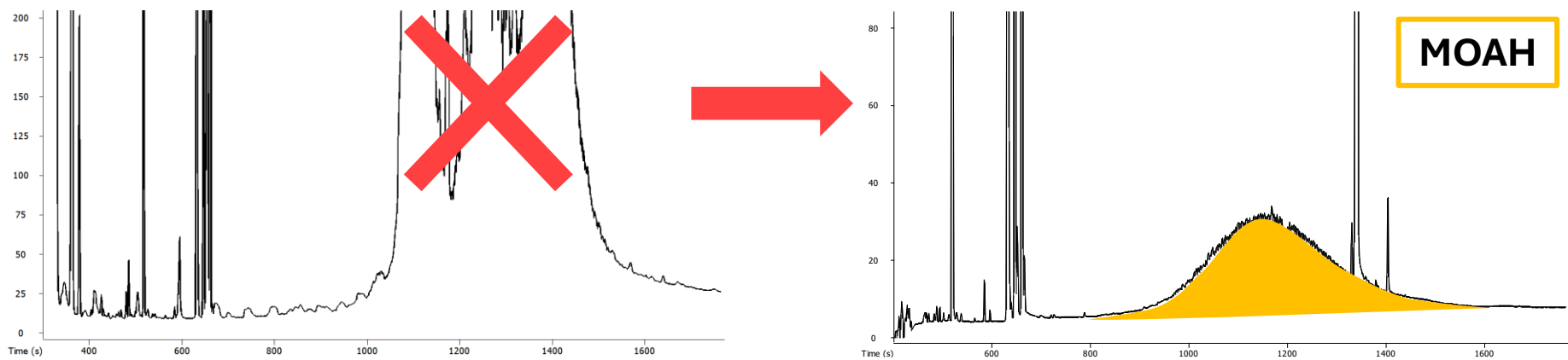




Method of analysis



PURIFICATION STEPS





Purification from biogenic interferences



MOSH

Removal of long chain n-
alkanes



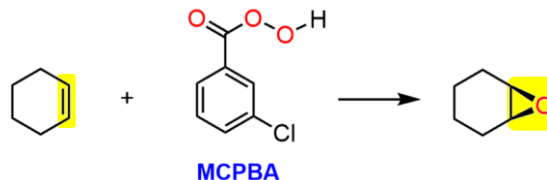
by SPE with **aluminium
oxide**

MOAH

Removal of biogenic alkenes

by **epoxidation**

by **HPLC**



Nestola 2017, Nestola 2022

Silica column



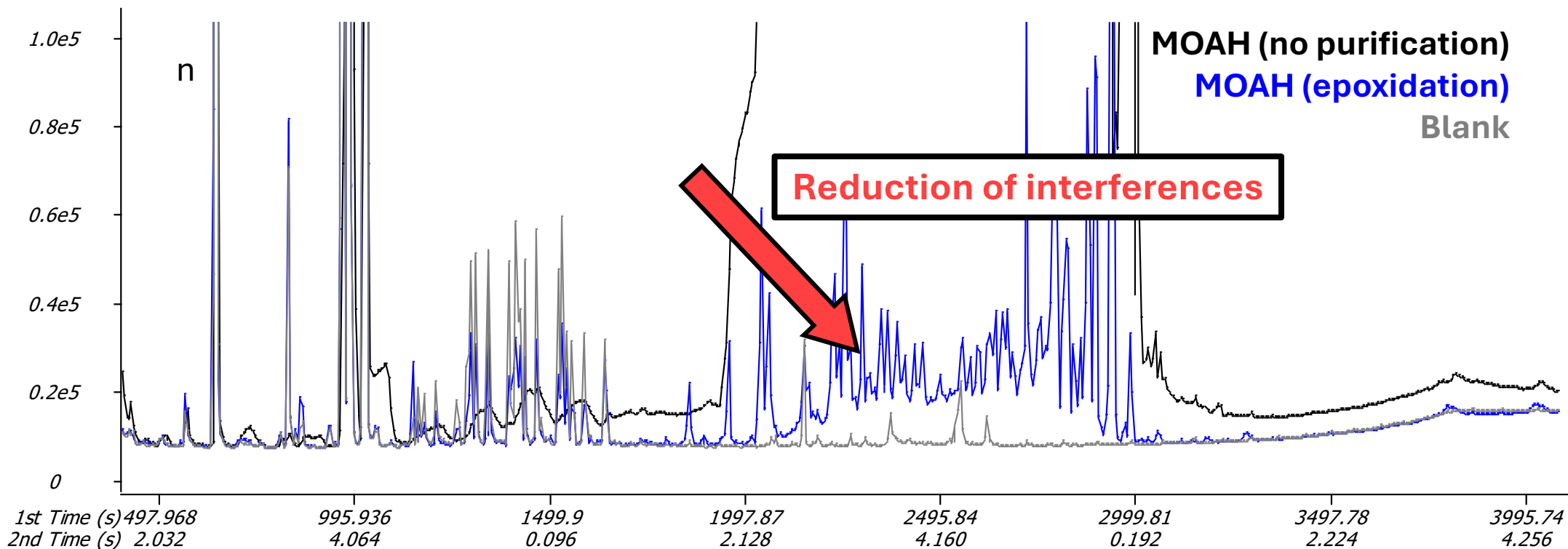
Gorska et al., 2025

All these purification methods are **imperfect**: they are not selective and lead to +/- extensive MOH losses.
As well, they do not always allow complete removal of interferences

Despite purification, interpretation and integration issues may persist

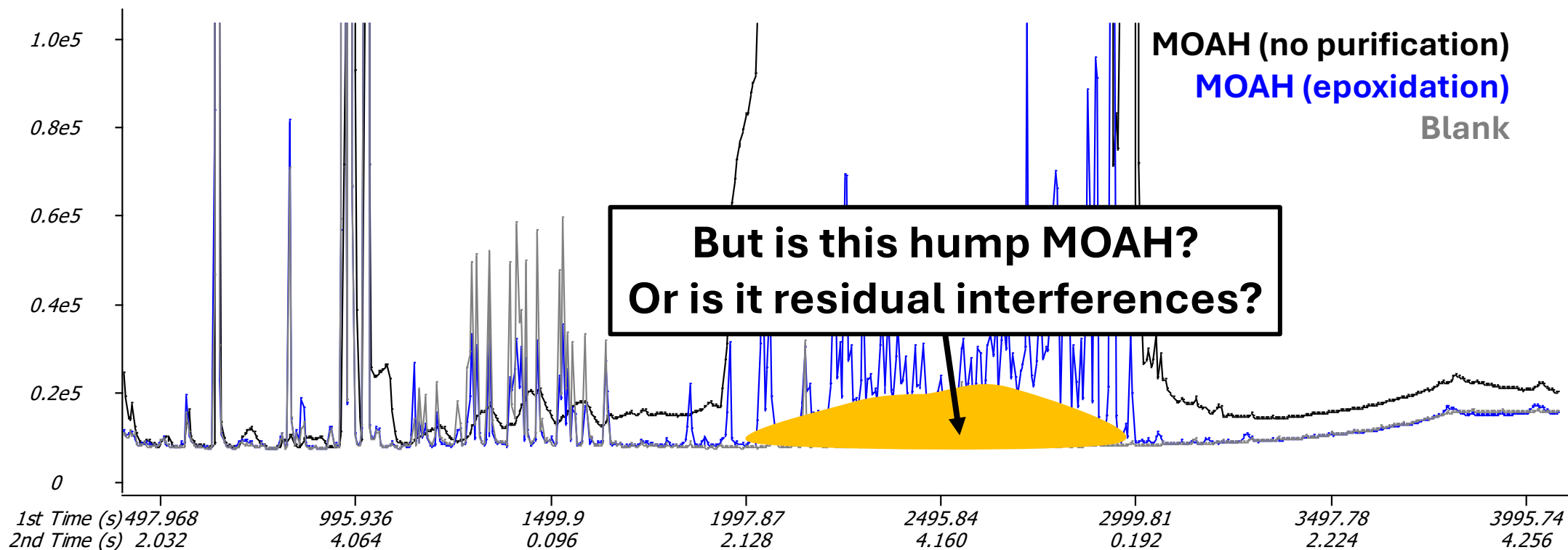


Complete or incomplete removal?





Complete or incomplete removal?



Subject to interpretation



GC×GC for confirmation



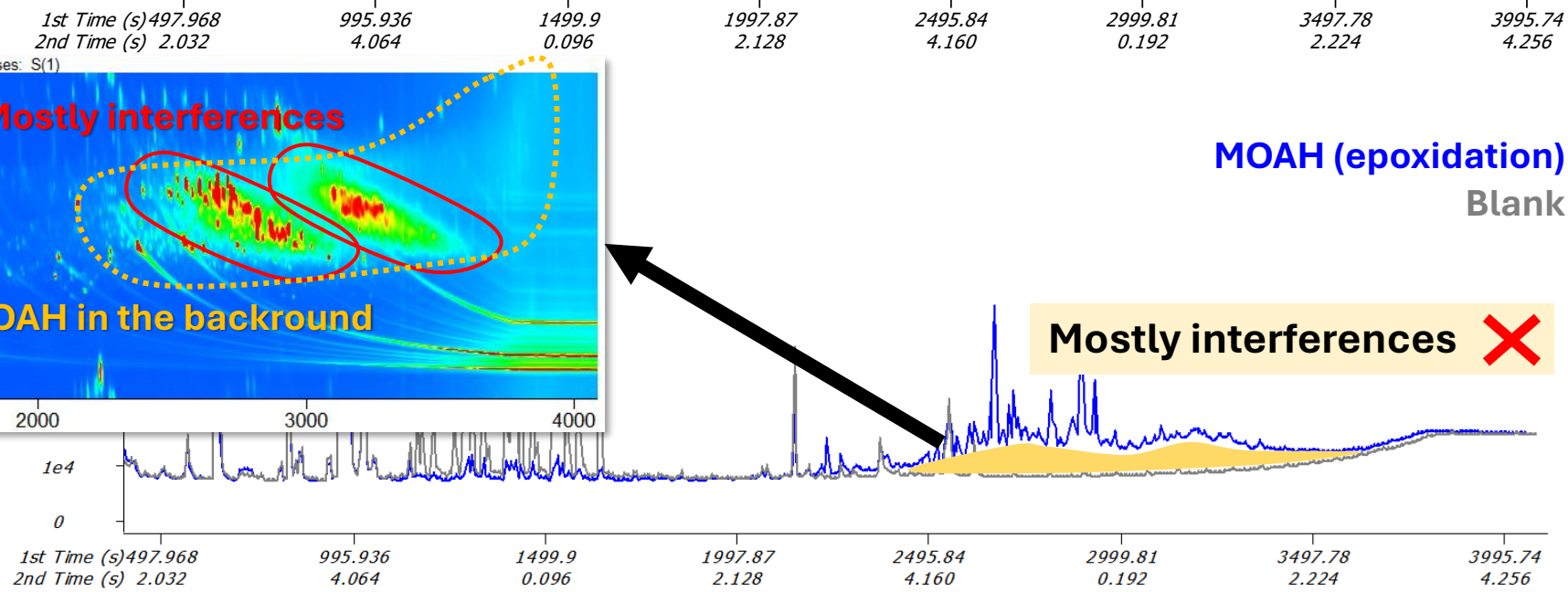
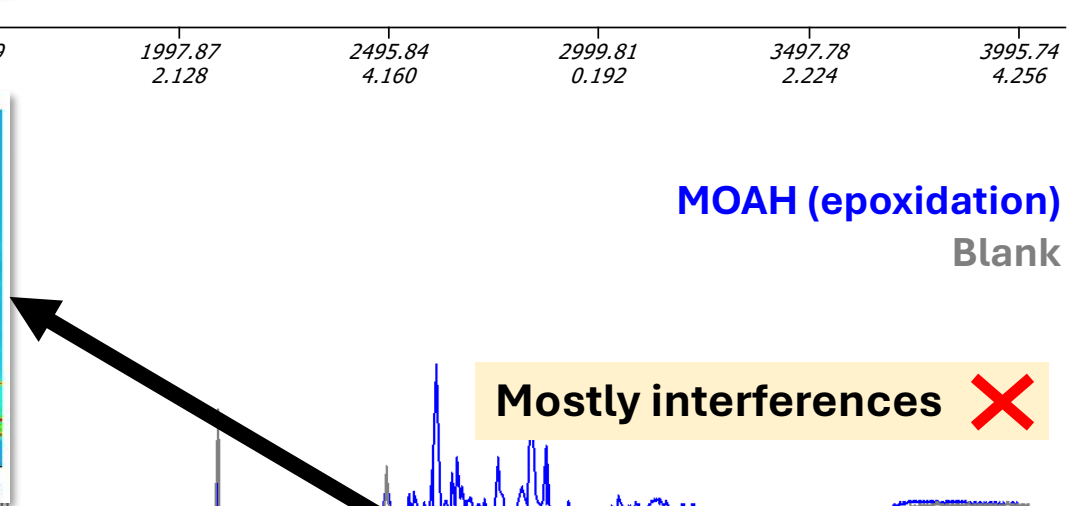
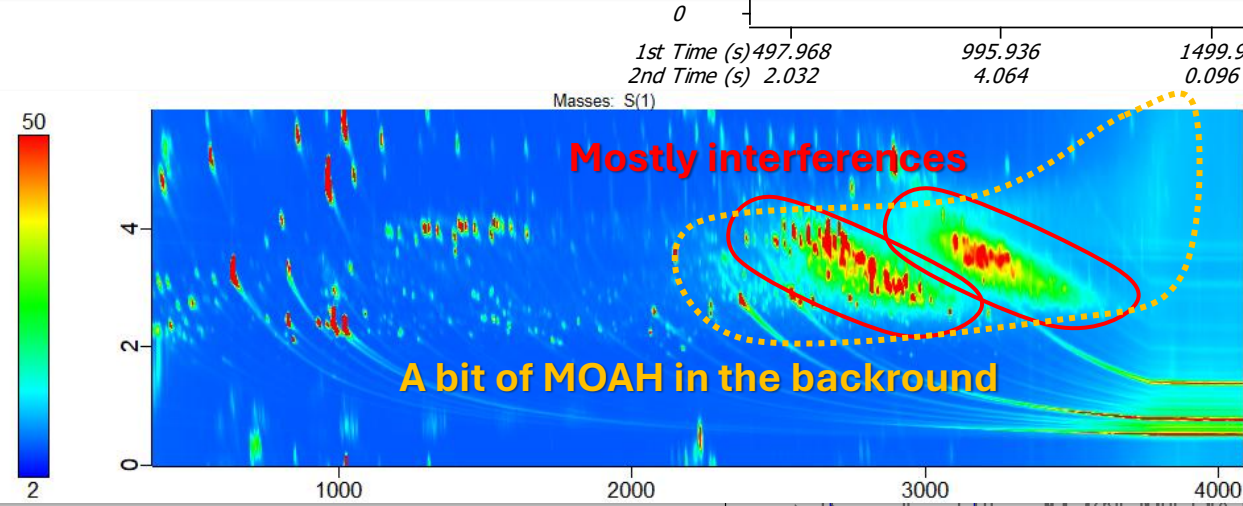
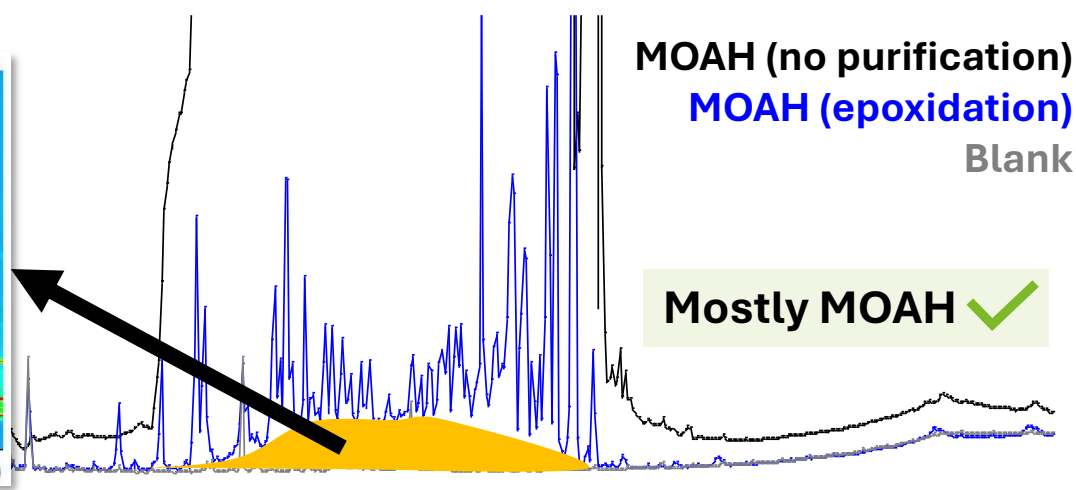
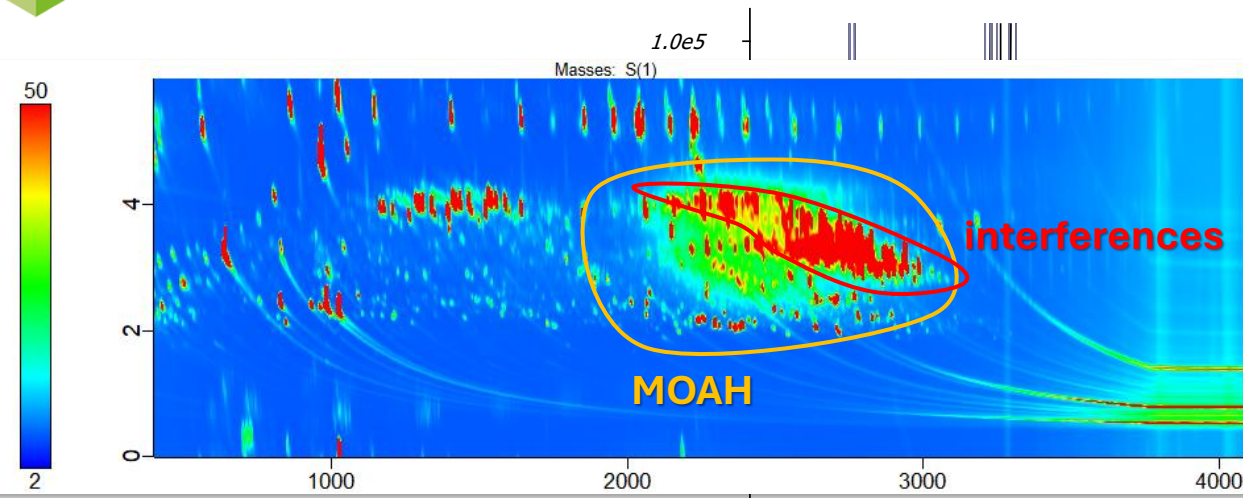
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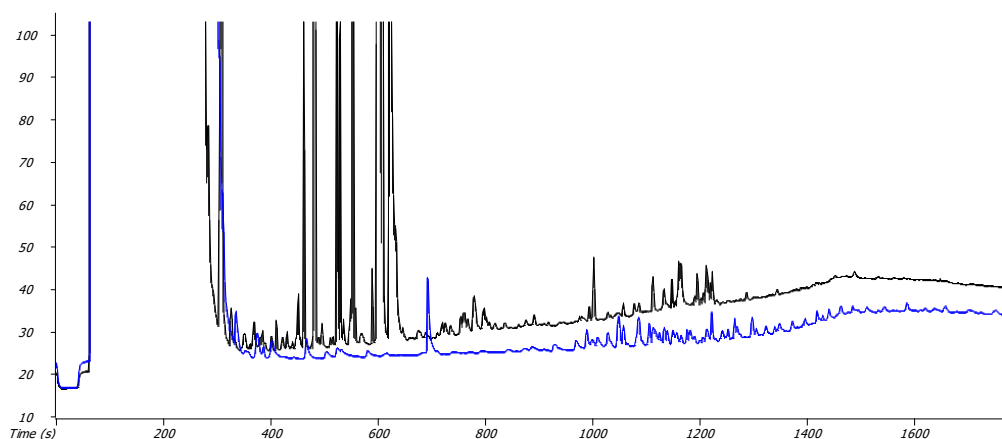
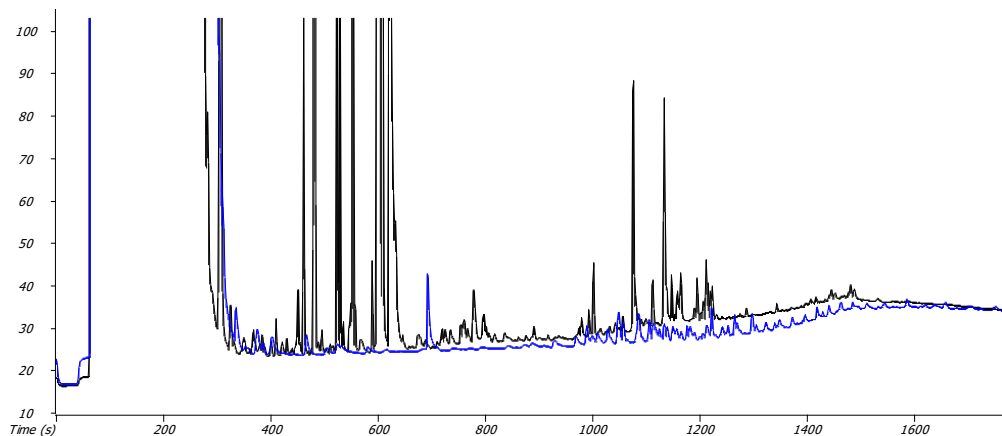


GC×GC for confirmation





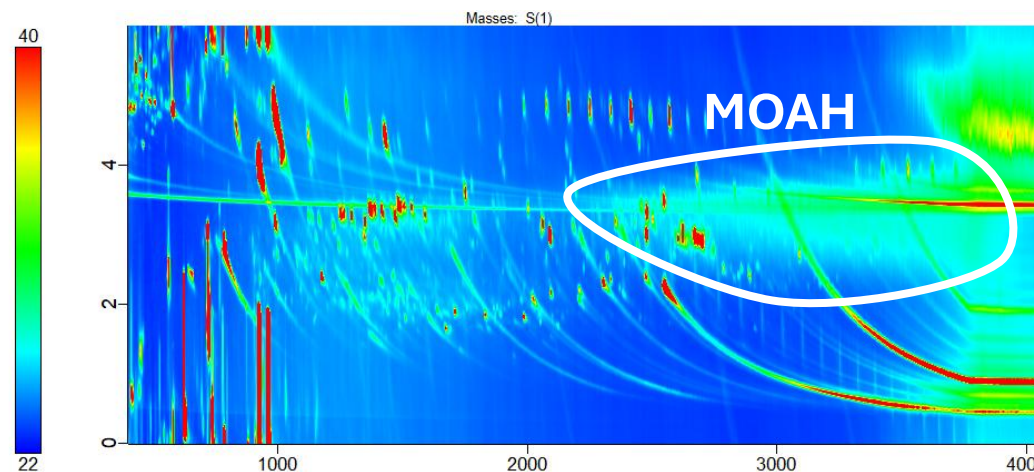
GC×GC for confirmation



MOAH fraction - sunflower oil – 2 replicates

At low MOAH concentrations ($\sim$ LOQ), and even in absence of interferences, interpretation may also be difficult

Do we see MOAH or is it just a baseline drift in both cases?



GC×GC allows to conclude with more confidence



Importance of GC×GC



- Current purification approaches combined with HPLC-GC-FID analysis are not robust for matrices containing persistent interferences and cannot reach performance criteria required by **Regulation (EC) No 333/2007** for any food matrix
- GC×GC is highly relevant to increase reliability of conclusions
- **But reading a GC×GC chromatogram is also subject to interpretations! It requires training.**



Harmonizing interpretation in GC×GC



- To support current and future GC×GC users in MOSH/MOAH context, and **harmonize interpretation**, a **guidance from the EURL-PC** was recently published (2025).
- **Currently: only qualitative.**

6.4.4 Effect of Hydrogenation on MOAH compounds

Hydrogenation process applied during petroleum refining influences the identity and elution pattern of MOAH. Hydrogenation generates partially saturated MOAH with a mixture of aromatic and saturated rings in the structure that elute as unresolved isomers in GC×GC (Figure 25) (35, 46). Partially saturated MOAH should be included as total MOAH.

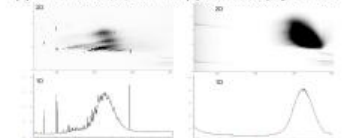
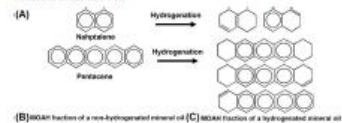


Figure 25. Chemical structure of partially hydrogenated MOAH compounds derived from naphthalene and phenanthrene (B) (35) and representative GC×GC and corresponding reconstructed GC chromatograms of a non-hydrogenated MOAH fraction (B) and a hydrogenated MOAH fraction (C) (35).

6.4.5 Thiophenes

Thiophene, aromatic sulfur-containing compounds such as benzothiophenes, dibenzothiophenes, benzobenzothiophenes and their analogues (Figure 26) are characteristic of crude mineral oils and can be used as markers of MOAH contamination (45). Similar to MOAH, sulfur-containing compounds have an RT response proportional to the carbon number (46). However, when the presence of atoms different than carbon reduces the detector response (46), and having that the presence of sulfur-containing compounds is quite low compared to MOAH (46), the intensity of the signal of sulfur-containing compounds such as thiophenes tend to be low compared to MOAH. In addition, resolution reduces significantly the content of sulfur-containing compounds (27), which, according to the example, the presence of dibenzothiophene in food samples. Thiophenes cannot be distinguished from the rest of the MOAH when using FID detection, and GC×GC MS is then required for their accurate identification. Figure 26 shows the characteristic elution pattern of dibenzothiophenes (Figure 16) in relation to strong MOAH (polycyclic aromatic hydrocarbons).

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6.5 Compounds co-eluting with MOAH fraction

Terpenic olefins, olefinic acid and its derivatives, polyisoprenes, and resin aromatic oligomeric hydrocarbons (ROAHs) (Figure 26) are among the main compounds co-eluting with MOAH.

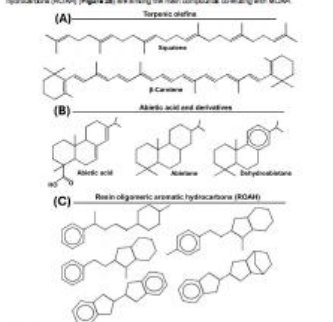


Figure 26. Chemical structure of representative compounds co-eluting with MOAH. Resins (35, 36).

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DTU
European Reference Laboratory for Processing Contaminants

Analysis of MOSH and MOAH in food by GC×GC. Guidance on analysis, interpretation and data reporting

6.5.1 Terpenic olefins

Terpenic olefins are a diverse family of terpenoid compounds with double bonds in their chemical structure, naturally occurring and characteristic of food matrices. Terpenic olefins include compounds such as monoterpenes, diterpenes, sesquiterpenes, caradienes, squalene and caradienes (35, 47). Small molecules such as squalene and more unsaturated terpenes co-elute with the MOAH fraction, while polycyclic aromatic hydrocarbons, caradienes, and caradienes co-elute with the MOAH fraction (Figure 26) (35, 48). Terpenes can be isolated from extracts using squalene, but these terpenes can also elute as some of the MOAH (27). Specific food types are characterized by specific terpenic fingerprints. For example, within vegetable oils, rapeseed samples show intense signals of several terpenic compounds (Figure 26A) while refined palm oil samples show intense signals of caradiene and caradiene signals (Figure 26B) co-eluting with MOAH contamination.

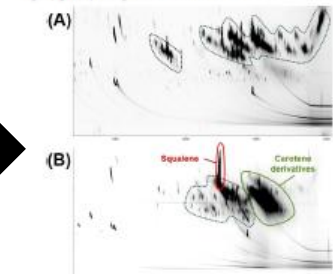


Figure 26. GC×GC chromatograms showing the effect of hydrogenation on MOAH compounds. (A) shows a large unresolved MOAH peak for a non-hydrogenated sample. (B) shows a smaller, more resolved MOAH peak for a hydrogenated sample.

6.5.2 Olefinic acid derivatives

Olefinic acid and its derivatives, such as olefinic, dehydroisoprenes (Figure 26), and other diene hydrocarbons, originate from raw resin compounds like isoprene (35) and tall oil, commonly used in paper, dyes, adhesives, and printing inks in GC×GC. Olefinic acid derivatives appear in the chromatograms of the MOAH fraction, forming a small hump around nC17 to nC19. Their presence can indicate contamination from wood-derived materials, particularly recycled paperboard or packaging containing resin-based adhesives.

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6.5.3 Polyisoprenes

As described in section 6.5.1, polyisoprenes from column bleeding, seals and between caps, are interferences and should be excluded from analysis by subtraction of corresponding signals from the corresponding blank (Figure 16).

6.5.4 Resin oligomeric aromatic hydrocarbons (ROAHs)

Resin oligomeric aromatic hydrocarbons (ROAHs) (Figure 26) are aromatic compounds that can migrate to foods from non-hydrogenated and partially hydrogenated non-meat additives, which chemical structure allows them to be extracted together with the MOAH fraction. ROAHs can be found in the bottom of the oil-pollution peak (GC×GC) and their content is reduced in hydrogenated samples since full hydrogenation eliminates aromatic resin hydrocarbons (Figure 26) (35). ROAHs are not considered MOAH and should be excluded from analysis, however the presence of ROAHs indicates the possible migration of aromatic compounds from resins used in sealing of cardboard FCM.

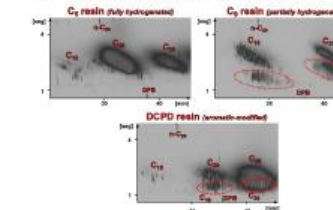


Figure 27. Representative GC×GC chromatograms showing the effect of hydrogenation on MOAH compounds. (A) shows a large unresolved MOAH peak for a non-hydrogenated sample. (B) shows a smaller, more resolved MOAH peak for a hydrogenated sample.

6.5.5 Naphthenic hydrocarbons (NMOHs)

Naphthenic hydrocarbons (NMOHs) (Figure 26) are a family of compounds with a high number of rings like cyclopentanes and decalins (Figure 16), which are part of MOAH. NMOHs could show similar retention times to MOAH compounds with high elution degree in GC×GC (Figure 16), where MOAH and NMOH fractions are not pre-separated (3). To avoid these interferences, it is recommended to evaluate MOAH contamination only after hydrogenation of respective MOAH and MOAH fractions (36).

7 Verification of GC×GC instrumental method performance and results

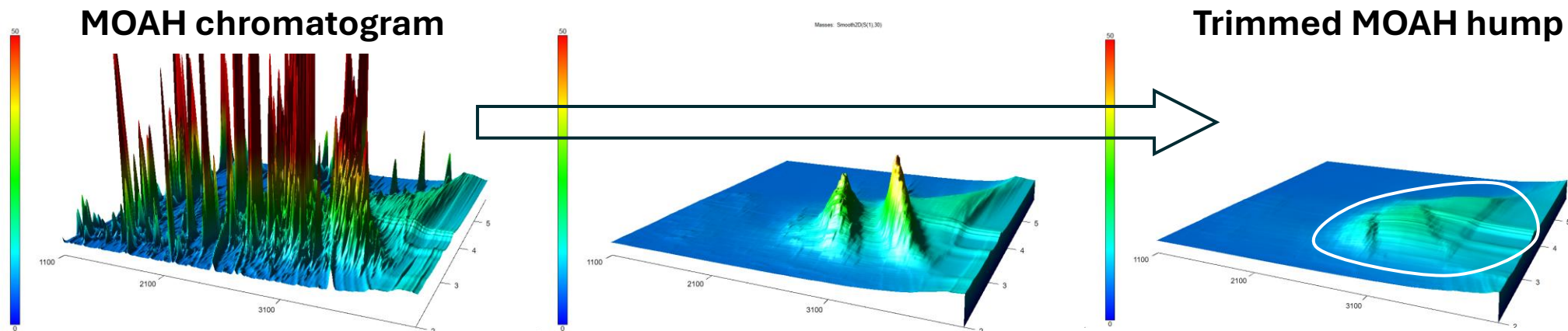
Method performance can be evaluated by inspection of the chromatographic separation of internal standard mixtures. Commercial standards of MOAH (MOAH-1, MOAH-2, MOAH-3, MOAH-4, MOAH-5, MOAH-6, MOAH-7, MOAH-8, MOAH-9, MOAH-10, MOAH-11, MOAH-12, MOAH-13, MOAH-14, MOAH-15, MOAH-16, MOAH-17, MOAH-18, MOAH-19, MOAH-20, MOAH-21, MOAH-22, MOAH-23, MOAH-24, MOAH-25, MOAH-26, MOAH-27, MOAH-28, MOAH-29, MOAH-30, MOAH-31, MOAH-32, MOAH-33, MOAH-34, MOAH-35, MOAH-36, MOAH-37, MOAH-38, MOAH-39, MOAH-40, MOAH-41, MOAH-42, MOAH-43, MOAH-44, MOAH-45, MOAH-46, MOAH-47, MOAH-48, MOAH-49, MOAH-50, MOAH-51, MOAH-52, MOAH-53, MOAH-54, MOAH-55, MOAH-56, MOAH-57, MOAH-58, MOAH-59, MOAH-60, MOAH-61, MOAH-62, MOAH-63, MOAH-64, MOAH-65, MOAH-66, MOAH-67, MOAH-68, MOAH-69, MOAH-70, MOAH-71, MOAH-72, MOAH-73, MOAH-74, MOAH-75, MOAH-76, MOAH-77, MOAH-78, MOAH-79, MOAH-80, MOAH-81, MOAH-82, MOAH-83, MOAH-84, MOAH-85, MOAH-86, MOAH-87, MOAH-88, MOAH-89, MOAH-90, MOAH-91, MOAH-92, MOAH-93, MOAH-94, MOAH-95, MOAH-96, MOAH-97, MOAH-98, MOAH-99, MOAH-100, MOAH-101, MOAH-102, MOAH-103, MOAH-104, MOAH-105, MOAH-106, MOAH-107, 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GC×GC for quantification?



Matrix: E471 (food additive)



- Quantification of MOSH/MOAH using **HPLC-GC×GC-FID** is possible, and can yield **equivalent results to HPLC-GC-FID** for not too complex matrices (Bauwens, 2023)
- However, although it greatly helps, GC×GC alone does not solve all the issues → interferences **still coelute**, and there integration still involves **interpretation** from the operator.
- Small variations in the trimming can have strong influence on the result, particularly at MOAH levels ~ LOQ (which is often the case)



Solutions?



If nor sample preparation, nor GC×GC allow to reach required analytical performance criteria for all matrices covered by regulation, **what are the solutions?**

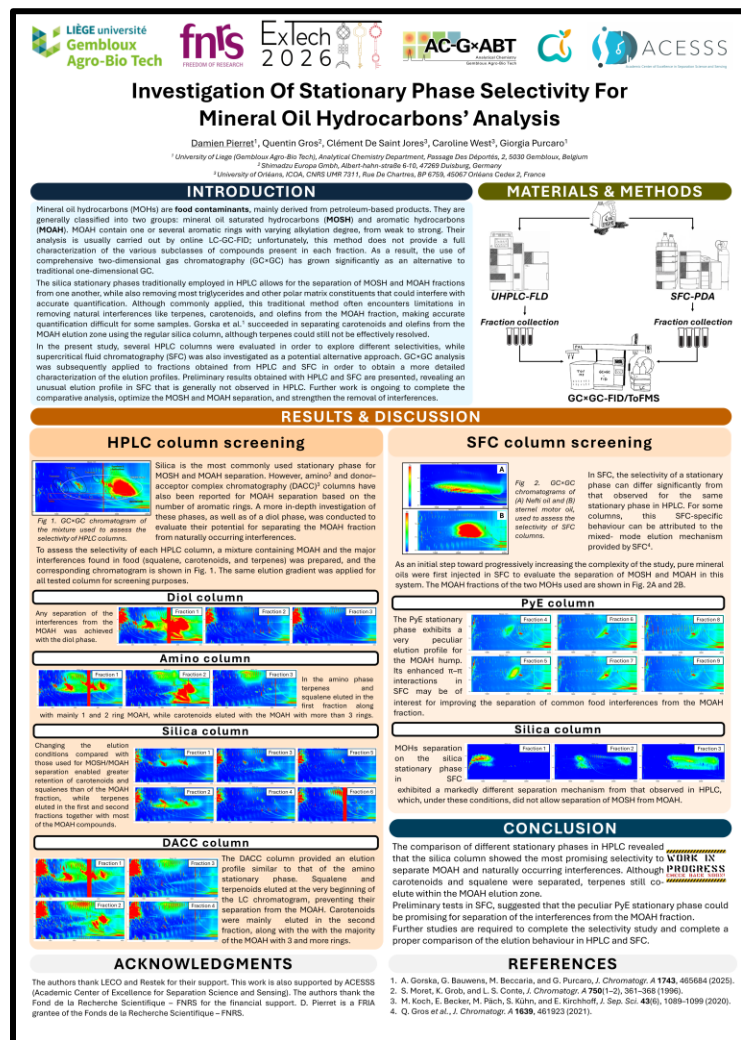
2 scenarios to be considered

**Regulation remains
on total MOAH**

**Regulation focuses on the
genotoxic sub-fraction of MOAH
(i.e., fraction with MOAH 3+ AR)**



Focus on total MOAH



1) Investigation of different LC and SFC stationary phases to notably evaluate purification potential from interferences

Evaluation of how MOSH/MOAH and interferences elute on these columns by collecting eluting fractions and injecting them in GC×GC

Potential perspective: a multidimensional solution allowing to improve resolution of interferences from MOH (e.g., by combining LC and/or SFC fractionation with GC×GC)

Poster **HYPH-06** of Damien Pierret

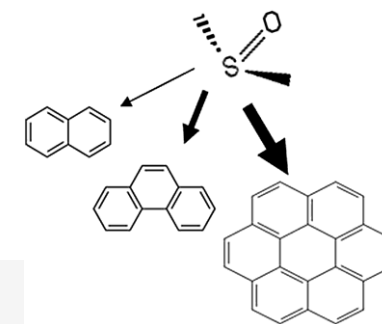


Focus on toxicologically relevant MOAH



2) Focus on MOAH with 3+ AR and low alkylation

Approaches that **adapt the selectivity of the extraction solvents** (e.g., extraction with **DMF** or **DMSO**) → extract mostly MOAH 3+ AR with low alkylation, and reducing co-extracted interferences



J.-C. Carrillo, et al. Reg Tox
Ph 106 (2019) 316-333

Miniaturized liquid-liquid extraction for selective separation and enrichment of non or low-alkylated aromatics from complex mineral oil mixtures

Laura Barp  , Seyedeh Farnaz Sadeghian, Giada Sist, Sabrina Moret

Analytica Chimica Acta
Volume 1401, 1 June 2026, 345376

Highlights

- Miniaturized LLE selectively enriches non- and lo-alkylated aromatics from complex MOAH mixtures.
- Highly alkylated mono- and di-aromatics, responsible for chromatographic masking, are efficiently suppressed.
- High cumulative recoveries for ≥3R PAHs (~92%) retaining MOSH and major interferences in the first extract.
- Reduced co-transfer of interfering compounds, such as squalene, enables improved LC–GC and GC×GC characterization of MOAH.

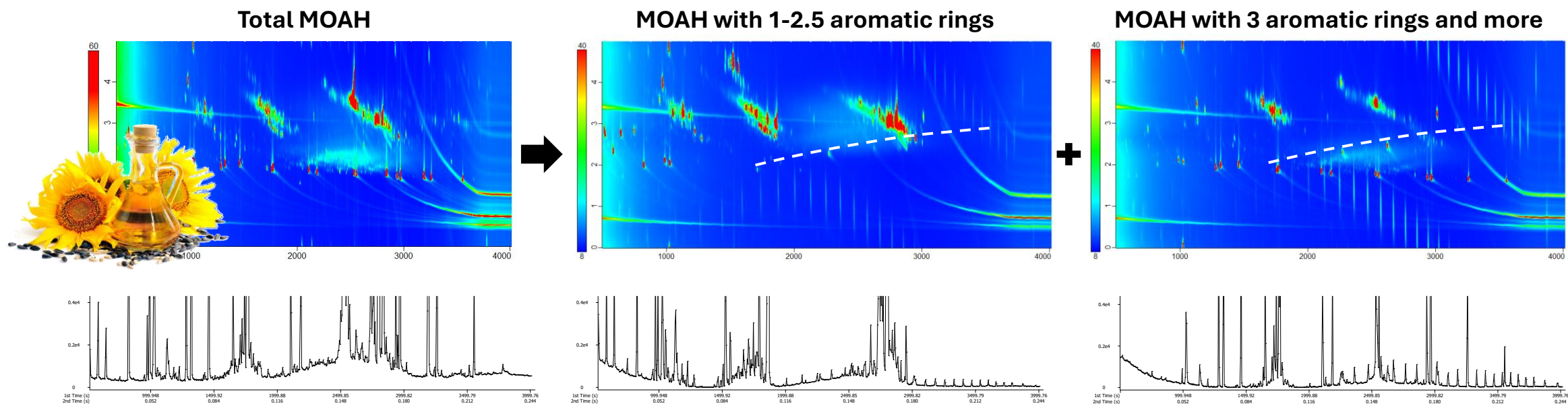


Focus on toxicologically relevant MOAH



2) Focus on MOAH with 3+ AR and low alkylation

HPLC Fractionation of MOAH based on their number of aromatic rings!



A. Gorska, G. Bauwens, M. Beccaria, and G. Purcaro, *J. Chromatogr. A* **1743**, 465684 (2025).



Which strategy to follow?



Both strategies should be studied and considered **in parallel** of the refining of our understanding of toxicological properties of MOAH.

But ... toxicological evaluation of MOAH is as challenging as its analysis in food!

Only most polar MOAH (DMSO-extractable MOAH) are currently evaluated *in vitro* as the other sub-fractions do not solubilize well in culture media used for testing.

Also a problem of sample preparation, and a field in which research is needed!





Conclusion



Sample preparation for MOSH/MOAH analysis: applicability of current methods and analytical limits

- Current MOSH/MOAH methods **do not yet consistently meet regulatory requirements** for all food samples.
- GC×GC is very useful, but coelutions remain and it does not solve all limitations.
- **No ready solution is available yet.** Current work explores complementary selectivities and dimensions, including LC, SFC, GC×GC and selective LLE.
- The optimal strategy will also **depend on refined toxicological knowledge**, which is still limited by poor compound solubility ... **but we are also working on it** 😊

Team members

- Prof. Giorgia Purcaro – head of the Analytical Chemistry lab (Gembloux Agro-Bio Tech)
- Damien Pierret – PhD student
- Sophie Vancraenenbroeck – Head technician
- Damien Eggermont – Teaching assistant & PhD student
- Carlo Bellinghieri – PhD student
- Chaimae Chaibi – PhD student
- Mattia Grego – Master's student/intern
- Siebe Lievens – ACCESSS research manager



Partners












Thank you!



*Thank
you!*