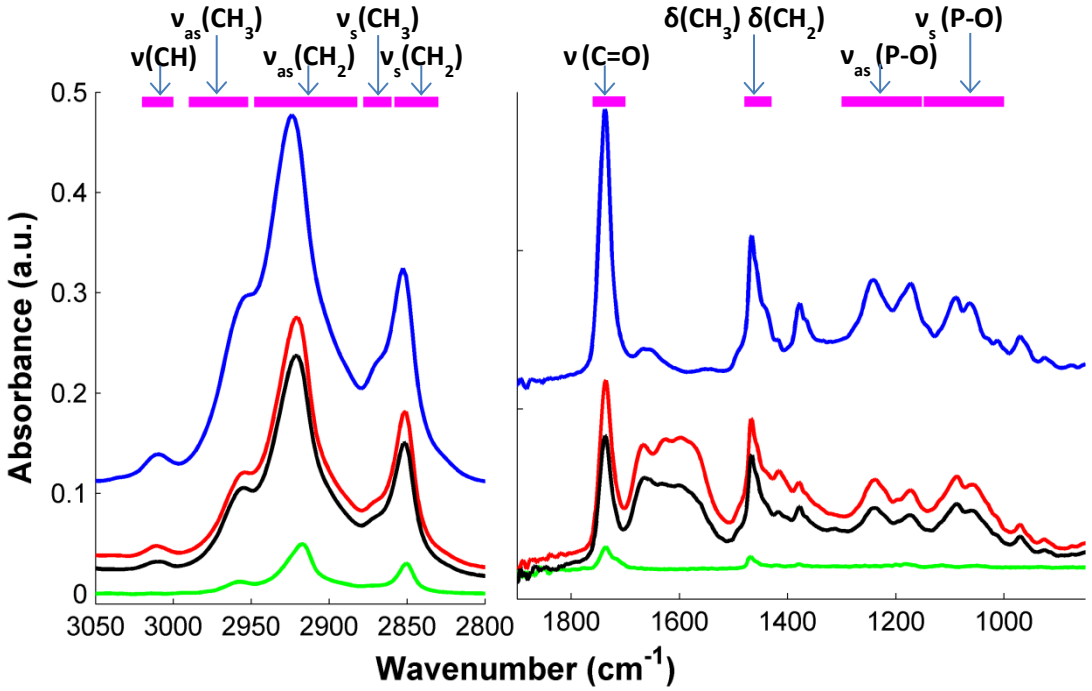
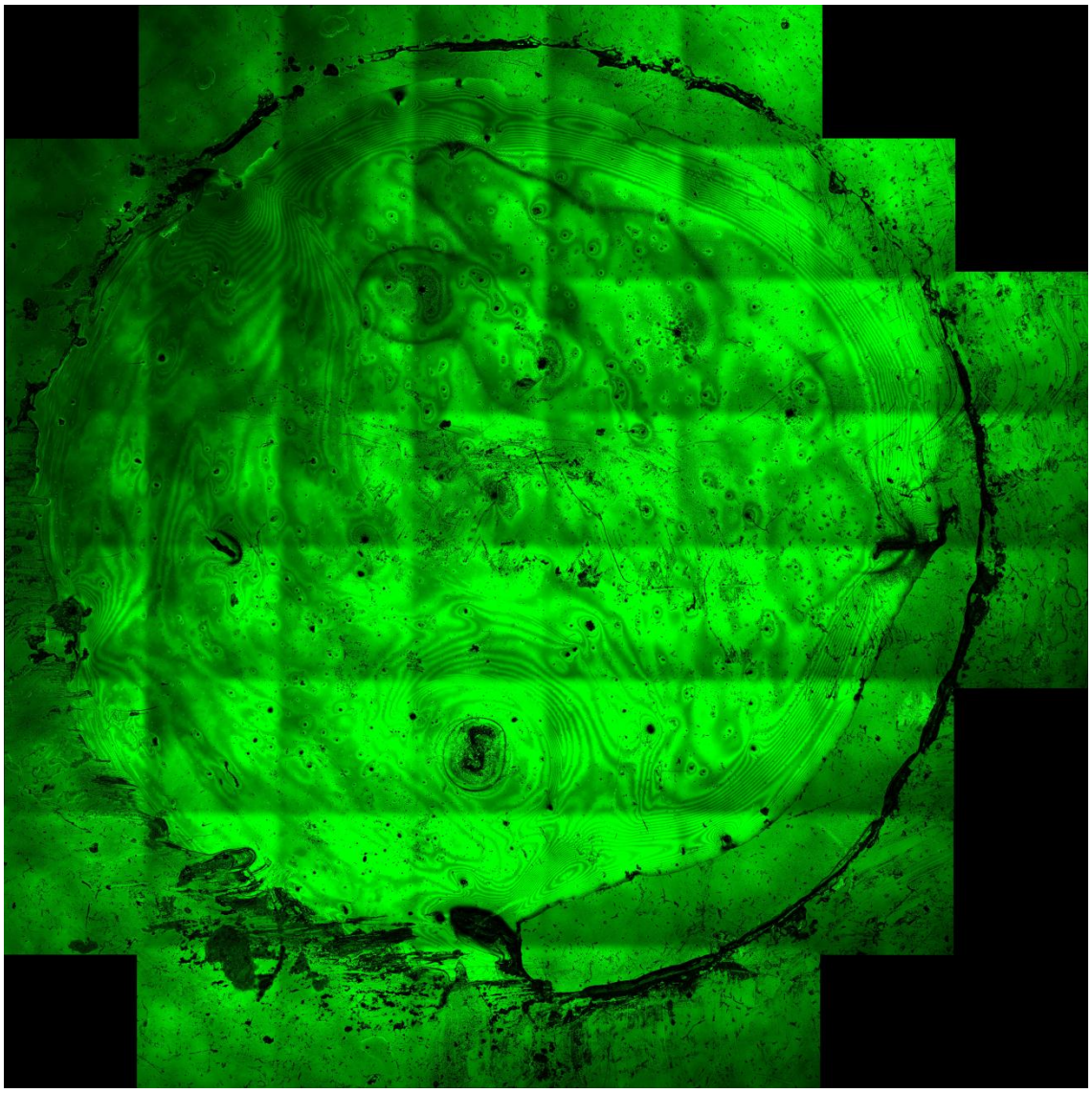
SM1. ATR-FTIR Spectra of dried extracts of the same sample obtained using the four solvents and mixtures assayed in the preliminary study: hexane (green), Folch reagent (black), hexane-isopropanol (red) and ethyl acetate-ethanol (blue). Horizontal magenta lines indicate the regions related to the absorption bands of the chemical bonds (See the text for additional information). NOTE: Spectra were shifted for clarifying.



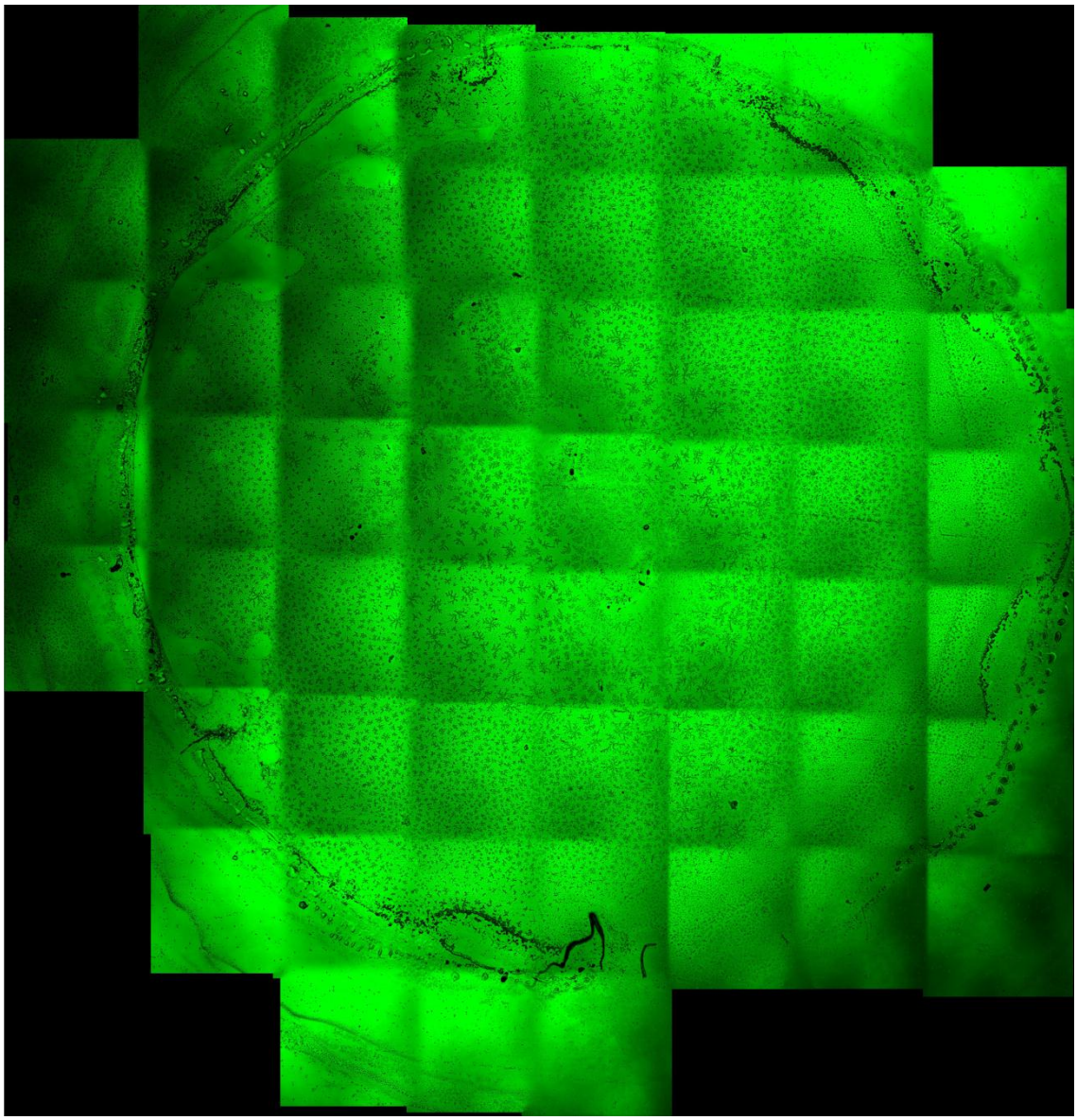
SM2: Characteristics of solvents employed to extract the lipidic fraction of serum samples.

Solvent	*Hazard statement*
Chloroform	H302: Harmful if swallowed. H315: Causes skin irritation. H351: Suspected of causing cancer. H373: May cause damage to organs through prolonged or repeated exposure.
Methanol	H225: Highly flammable liquid and vapour. H301 + H311 + H331: Toxic if swallowed, in contact with skin or if inhaled H370: Causes damage to organs
Hexane	H225: Highly flammable liquid and vapour. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H336: May cause drowsiness or dizziness. H361f: Suspected of damaging fertility. H373: May cause damage to organs through prolonged or repeated exposure. H411: Toxic to aquatic life with long lasting effects.
Isopropanol	H225: Highly flammable liquid and vapour. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Ethyl Acetate	H225: Highly flammable liquid and vapour. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness. EUH066: Repeated exposure may cause skin dryness or cracking.
Ethanol	H225: Highly flammable liquid and vapour.

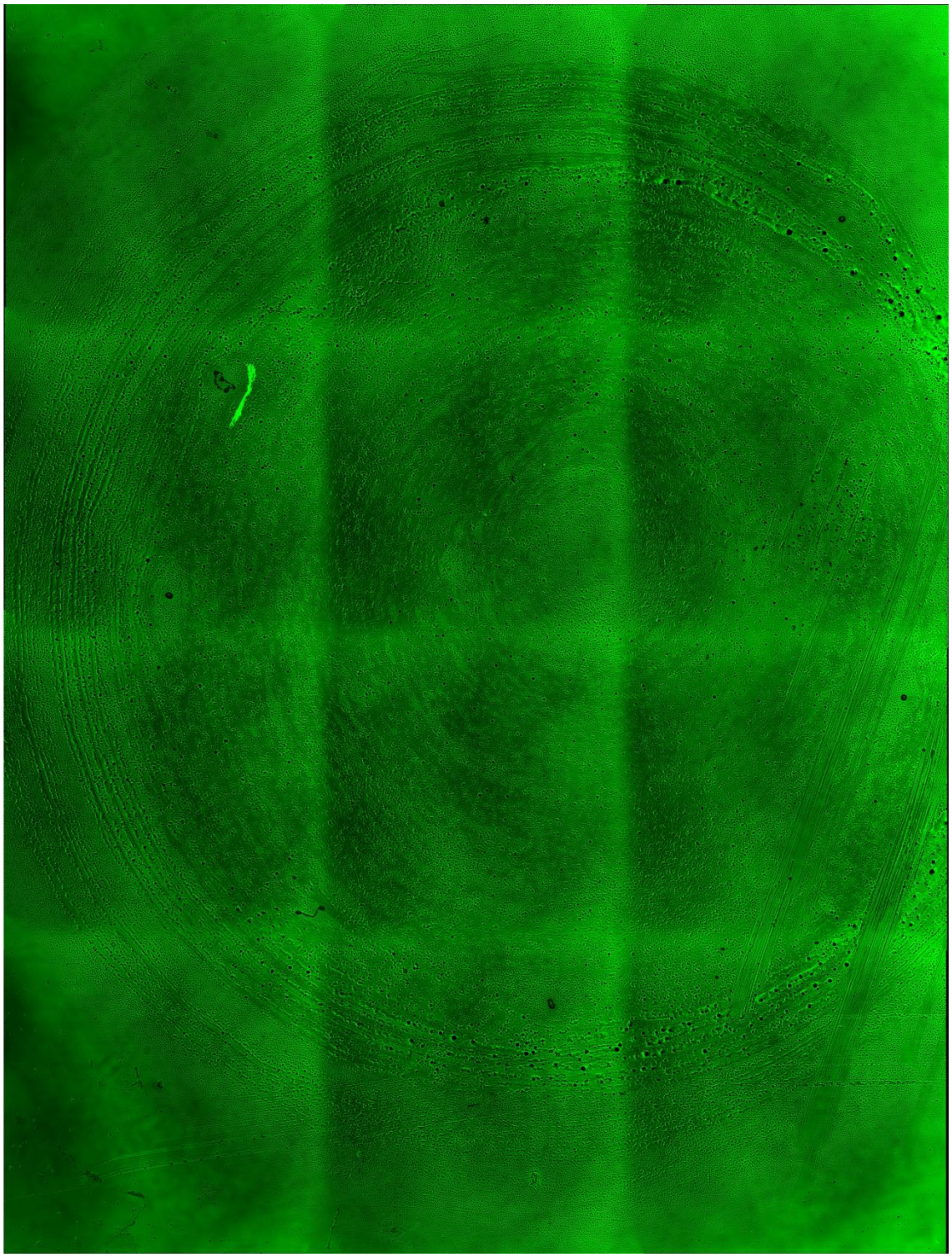
SM3 Full resolution microscopy image of the deposition of 2 µL of sample diluted with water 1:10 and confined in a 4 mm diameter steel ring.



SM4 Full resolution microscopy image of the deposition of 2 µL of ethyl acetate-ethanol extract of the sample confined in a 4 mm diameter steel ring.



SM5 Full resolution microscopy image of the deposition of 2 µL of hexane-isopropanol extract of the sample confined in a 4 mm diameter steel ring.



SM6. Comparison of calibration parameters used and results obtained by different methodologies for the determination of lipidic parameters in serum and blood using FTIR.

Analyte	*Study*	*Samples calibration*	*Samples validation*	*RMSEP (mg/dL)*	*RRMSEP (%)*	*LV*
Triglycerides	Hosafci et al	283	30	23.6	Not Reported	11
	Liu et al.	60	30	31.1	Not reported	7
	Proposed[1]	37-28	26-21	18.5-23.0	16.9-12.1	6-4
Cholesterol	Hosafci	261	25	17.9	Not reported	16
	Liu et al.	60	30	14.7	Not reported	10
	Proposed[1]	28-38	21-27	9.3-14.6	6.6-9.5	5
HDL	Liu et al.	60	30	12.0	Not reported	6
	Proposed[1]	28-32	21-24	6.6-6.6	19.2-20.2	4
LDL	Liu et al.	60	30	13.5	Not reported	8
	Proposed[1]	24-32	21-24	17.1-15.8	20.9-18.4	4

[1]Hexane/Isopropanol (3:1)-Ethyl Acetate/Ethanol (3:1)

Note: RMSEP – Root Mean Square Error of Prediction; RRMSEP – Relative Root Mean Square Error of Prediction