

## FIGURES



Figure S1 - Different extracts of *Juglans regia* L (color variation).

S22 - YL extraction with water; S21- YL extraction with ethanol; S23 - YL extraction with hydroethanolic mixture; S10 - MGL extraction with water; S9 - MGL extraction with ethanol; S11 - MGL extraction with hydroethanolic mixture; S19 - LG extraction with water; S19 - extraction with ethanol; S18 - extraction with hydroethanolic mixture; S16 - YGL extraction with water; S15 - YGL extraction with ethanol; S17 - YGL extraction with hydroethanolic mixture. All samples were subjected ultrasound assisted-extraction for 60 min

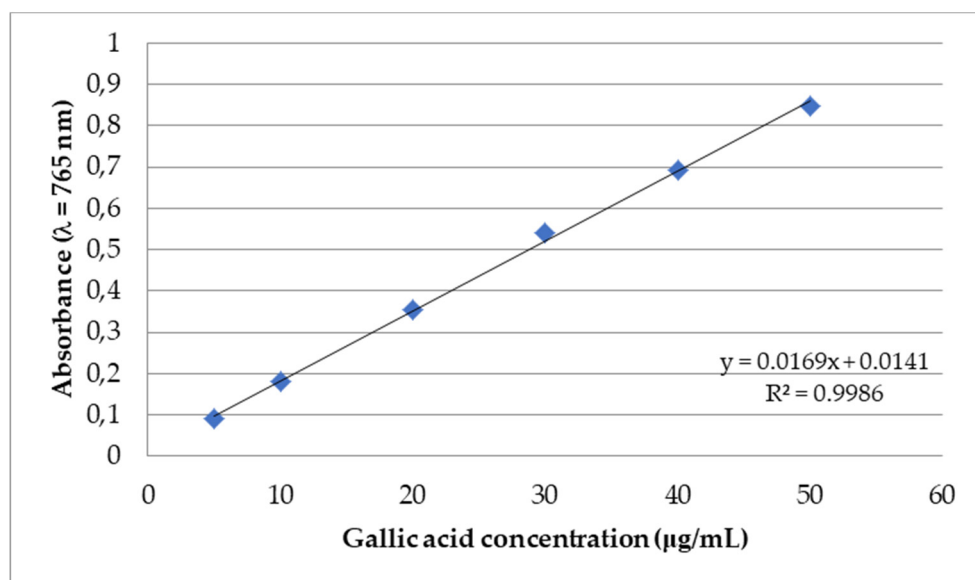


Figure S2 - Standard curve of gallic acid for total polyphenol content assay (TPC).

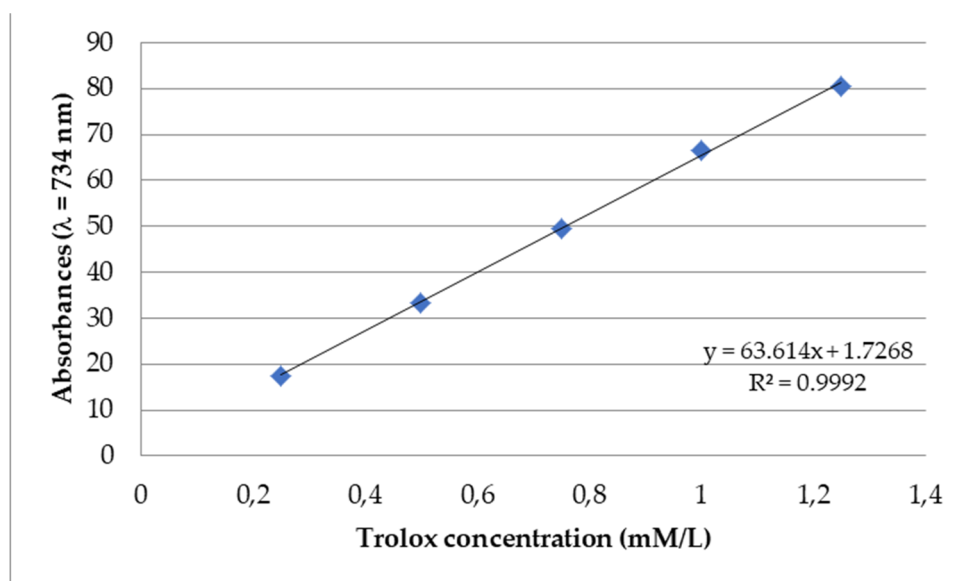


Figure S3 - Standard curve of Trolox for Trolox equivalent antioxidants capacity assay (TEAC).

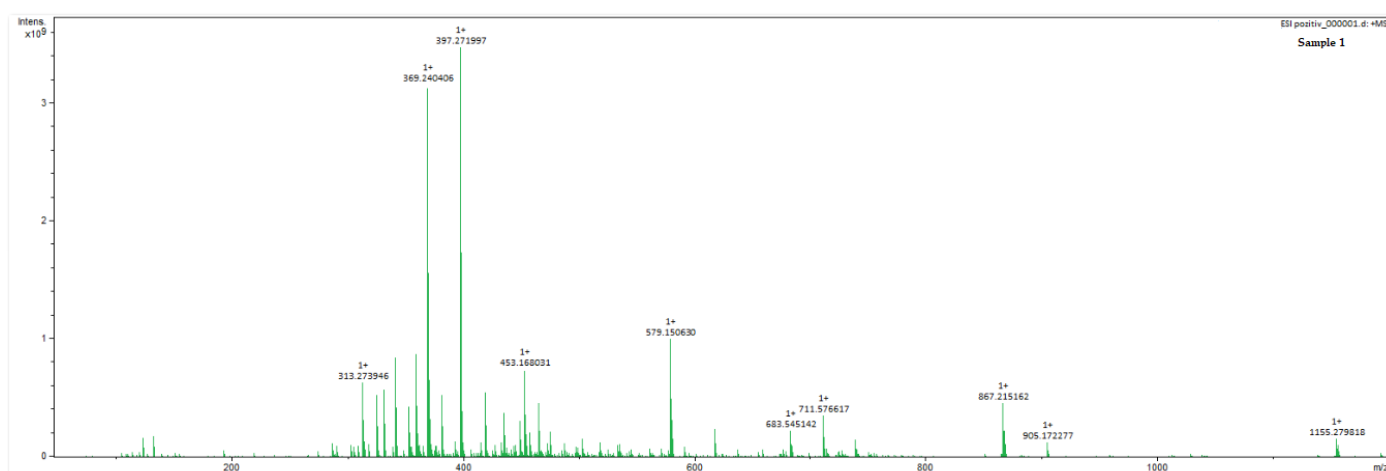


Figure S4\_1 FT-ICR-MS spectrum of MGL - extraction by magnetic stirring with hydroethanolic mixture - 1 min.

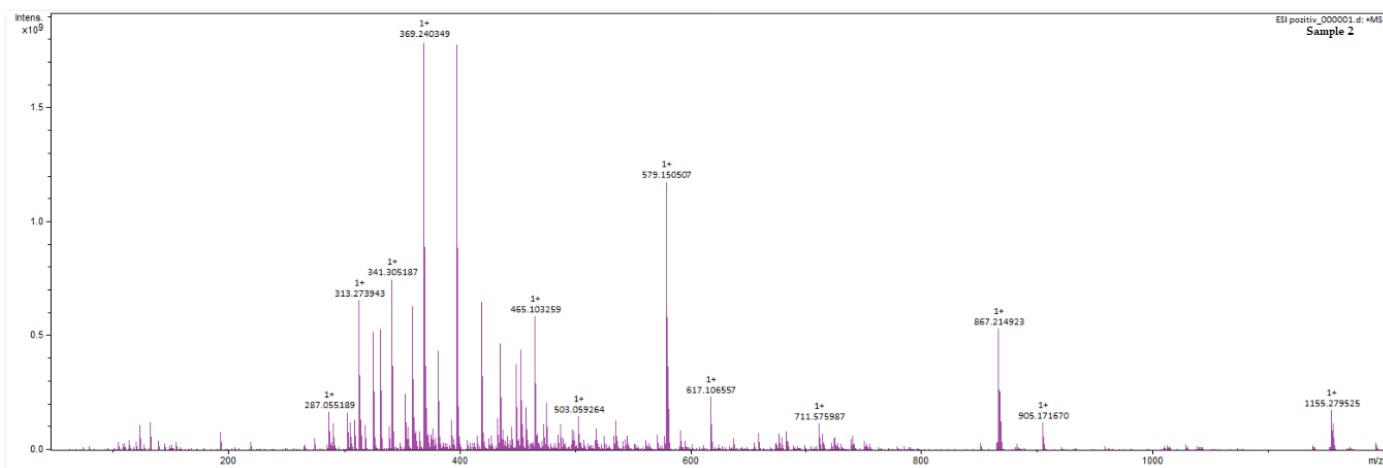


Figure S4\_2 FT-ICR-MS spectrum of MGL - extraction by magnetic stirring with hydroethanolic mixture - 10 min.

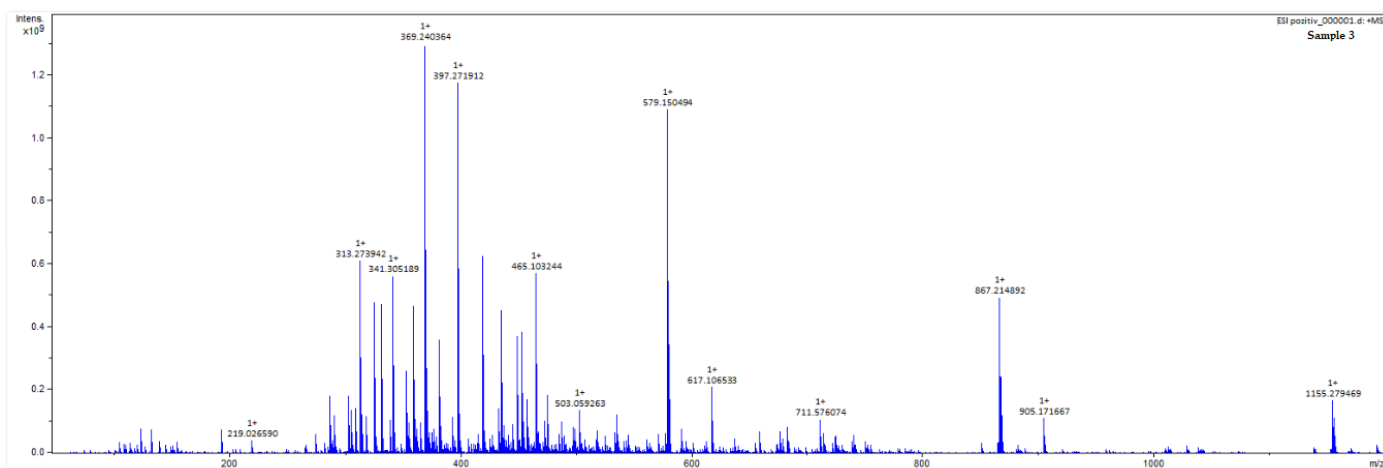


Figure S4\_3 FT-ICR-MS spectrum of MGL - extraction by magnetic stirring with hydroethanolic mixture - 20 min.

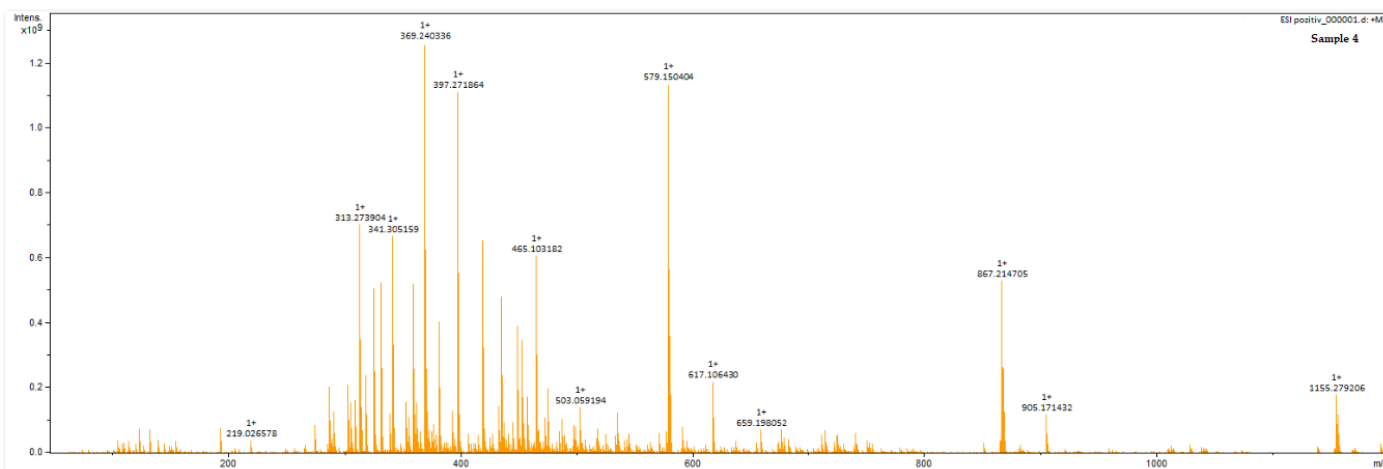


Figure S4\_4 FT-ICR-MS spectrum of MGL - extraction by magnetic stirring with hydroethanolic mixture - 30 min.

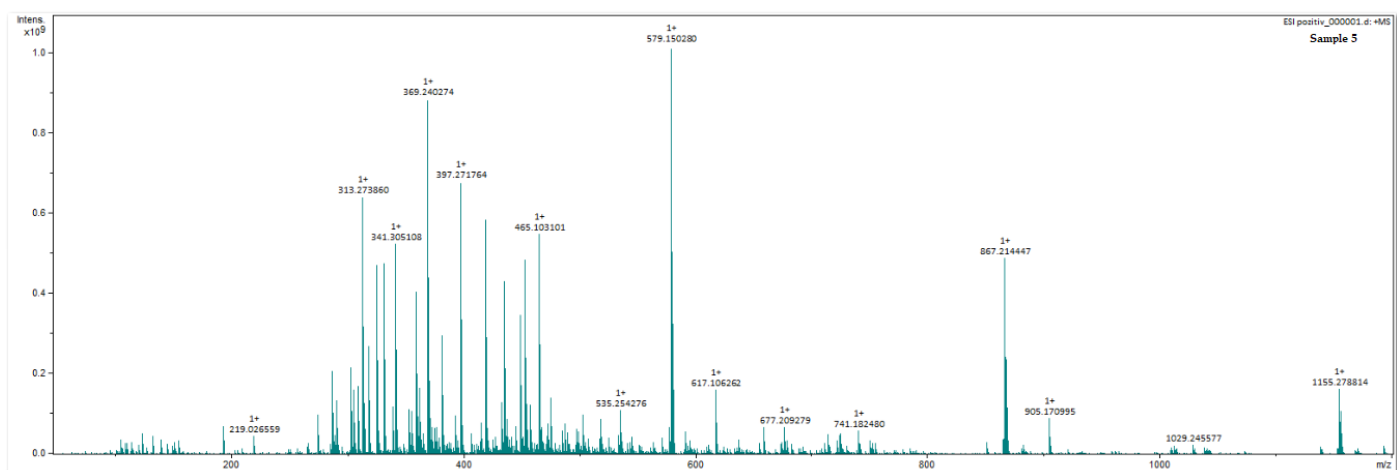


Figure S4\_5 FT-ICR-MS spectrum of MGL - extraction by magnetic stirring with hydroethanolic mixture - 45 min.

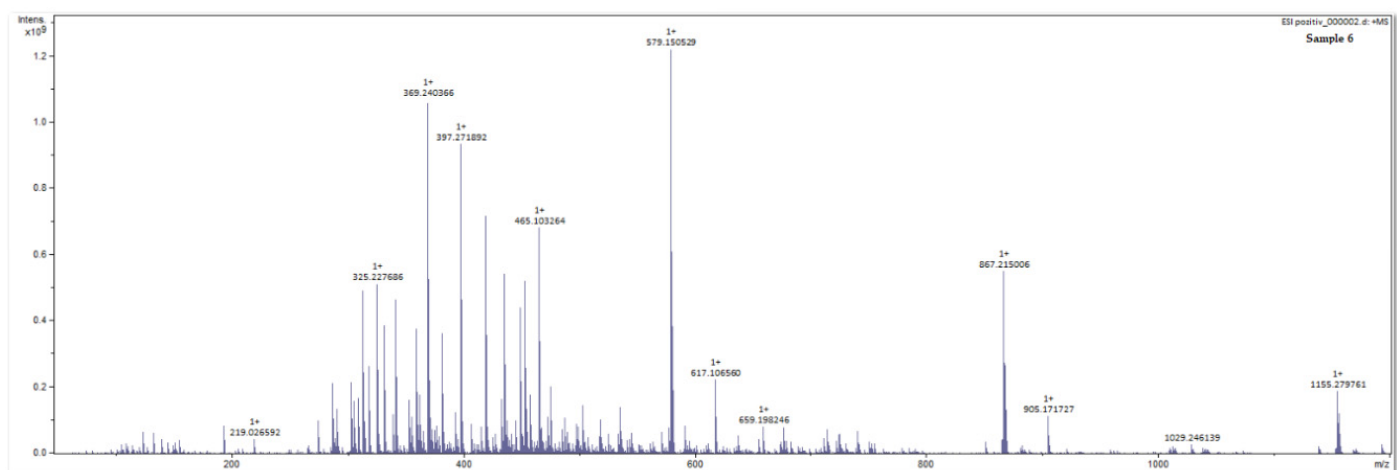


Figure S4\_6 FT-ICR-MS spectrum of MGL - extraction by magnetic stirring with hydroethanolic mixture - 60 min.

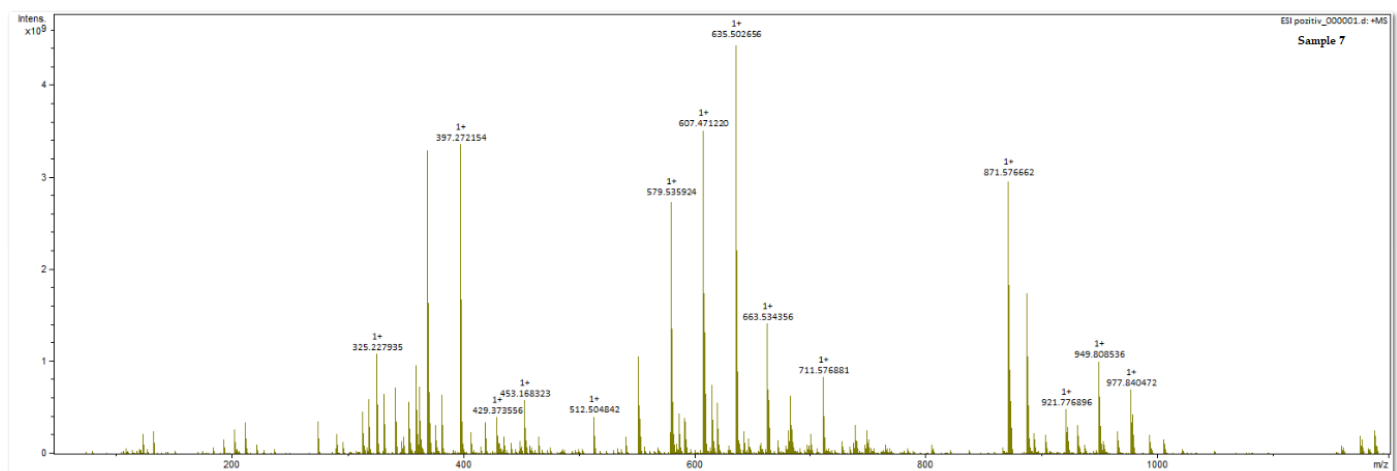


Figure S4\_7 FT-ICR-MS spectrum of MGL - extraction by magnetic stirring with ethanol - 60 min.

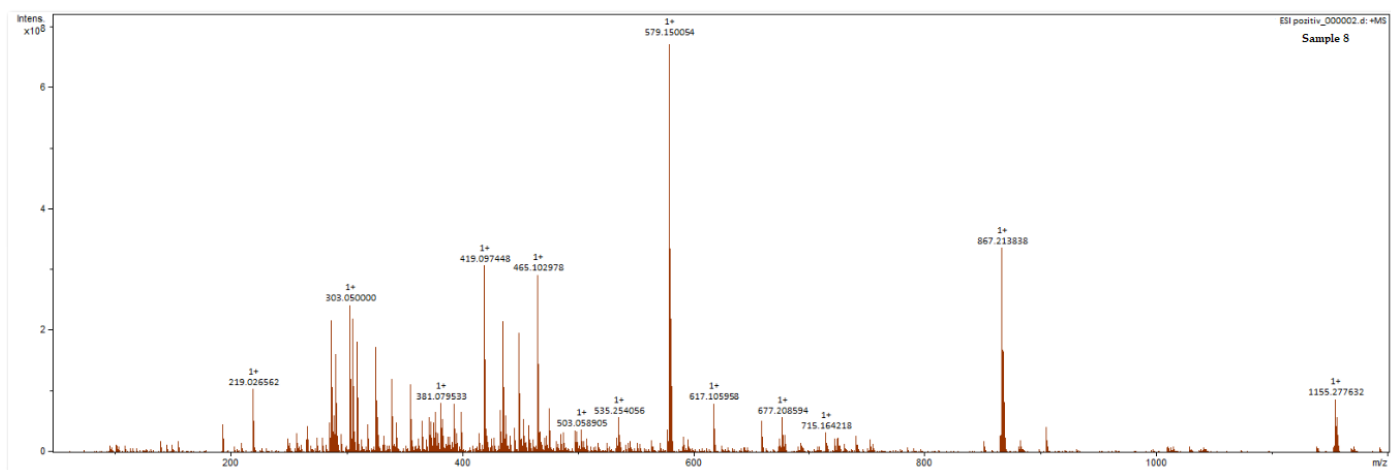


Figure S4\_8 FT-ICR-MS spectrum of MGL - extraction by magnetic stirring with water - 60 min.

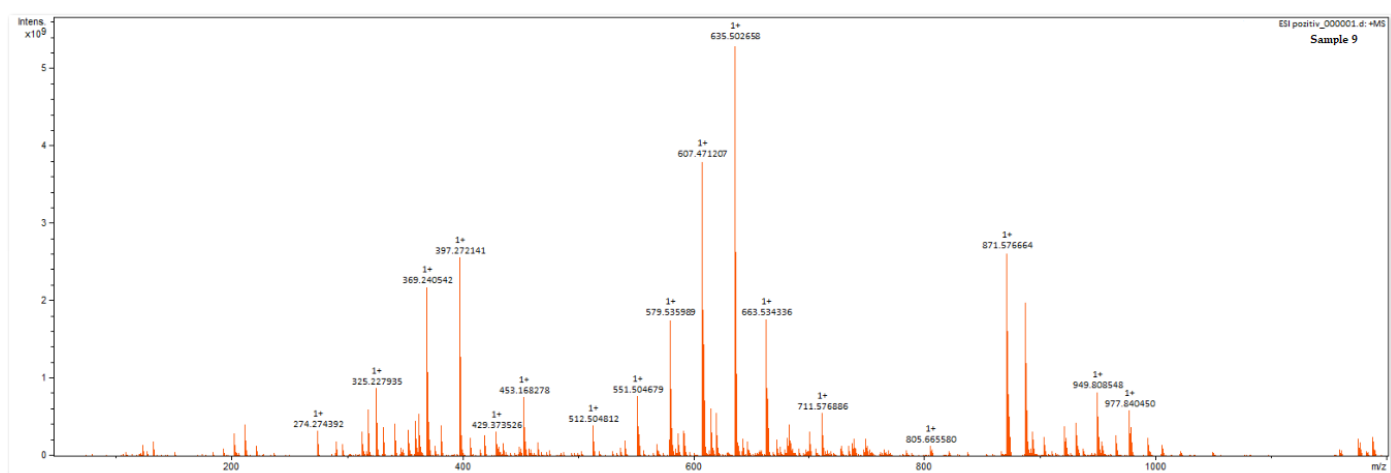


Figure S4\_9 FT-ICR-MS spectrum of MGL - ultrasound assisted-extraction with ethanol - 60 min.

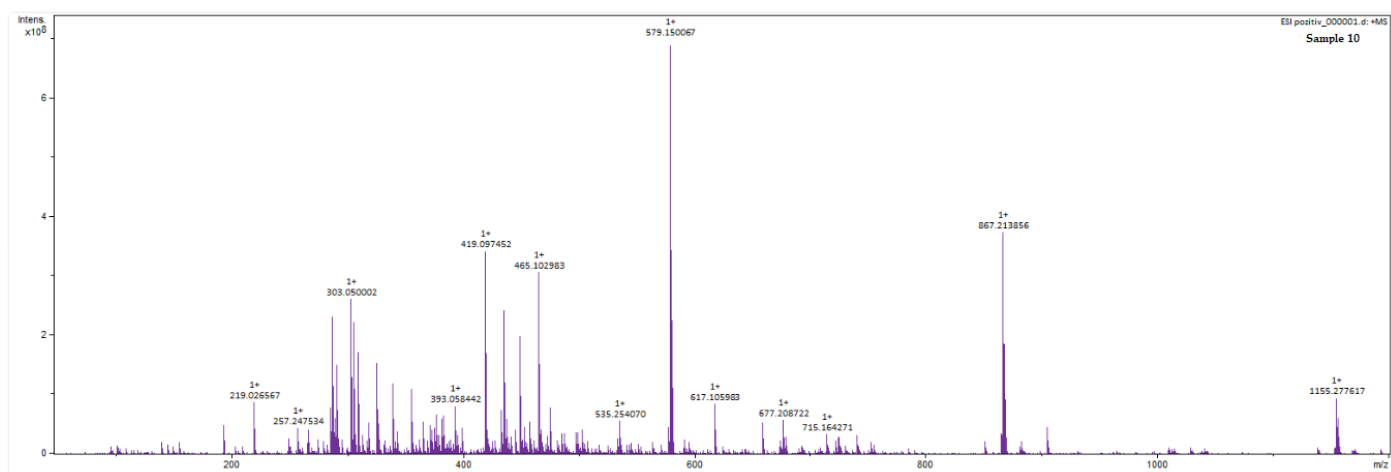


Figure S4\_10 FT-ICR-MS spectrum of MGL - ultrasound assisted-extraction with water - 60 min.

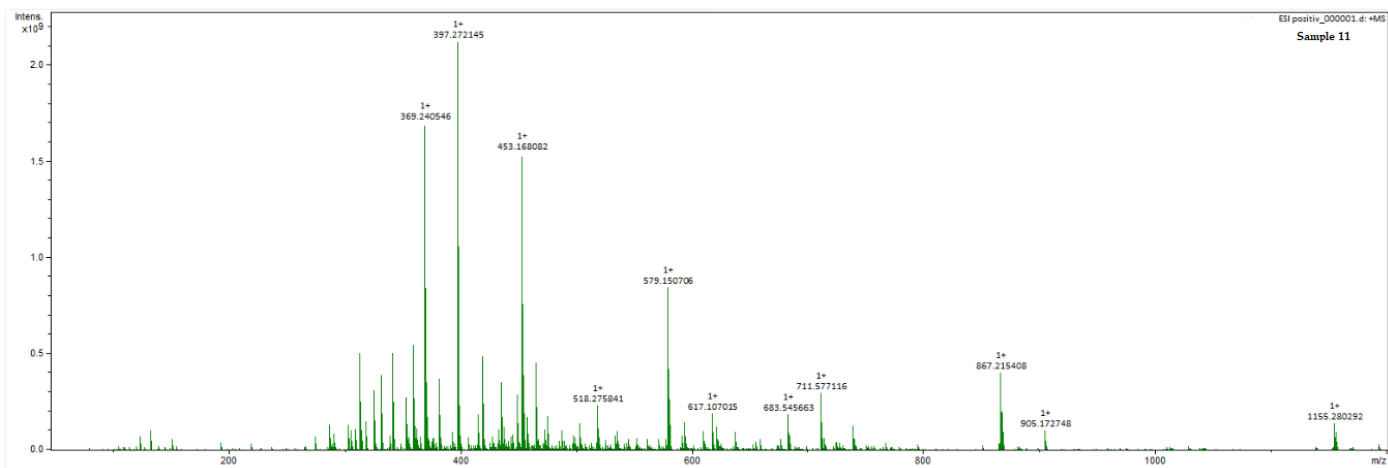


Figure S4\_11 FT-ICR-MS spectrum of MGL - ultrasound assisted-extraction with hydroethanolic mixture - 60 min.

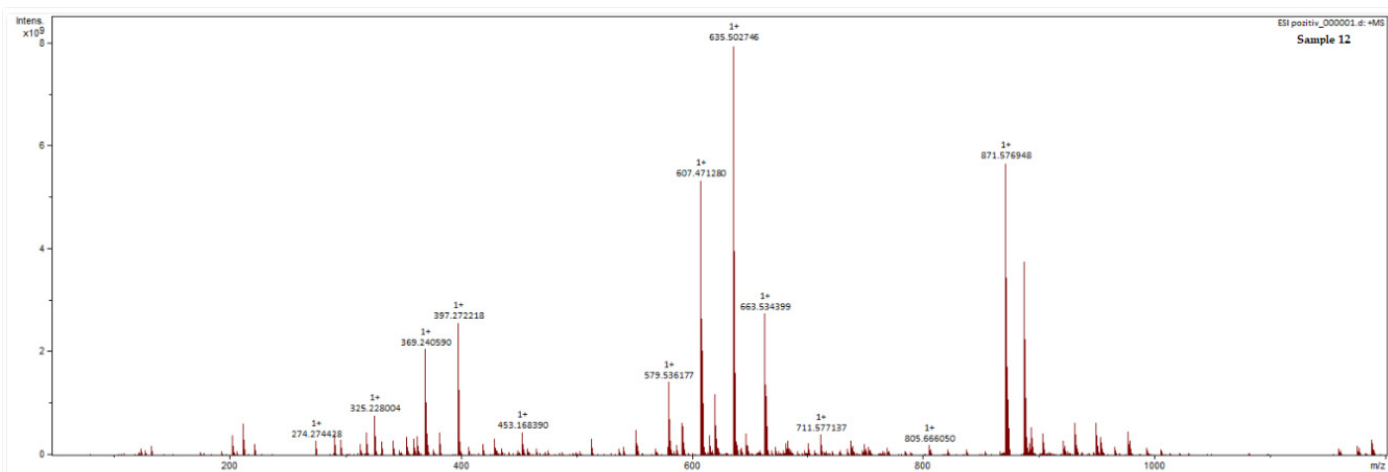


Figure S4\_12 FT-ICR-MS spectrum of MGL - extraction by maceration with ethanol - 60 min.

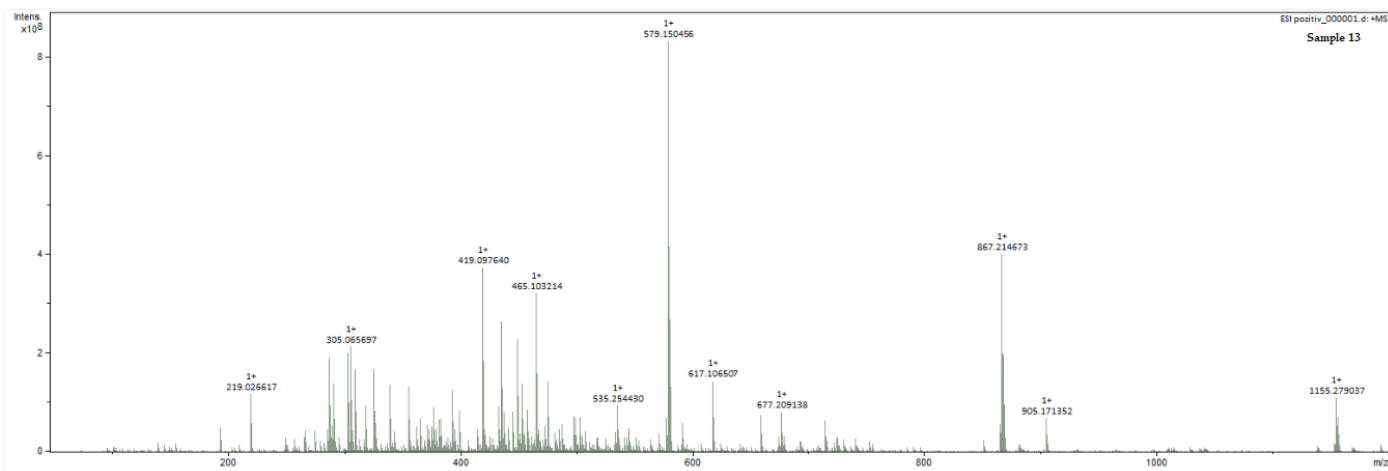


Figure S4\_13 FT-ICR-MS spectrum of MGL - extraction by maceration with water - 60 min.

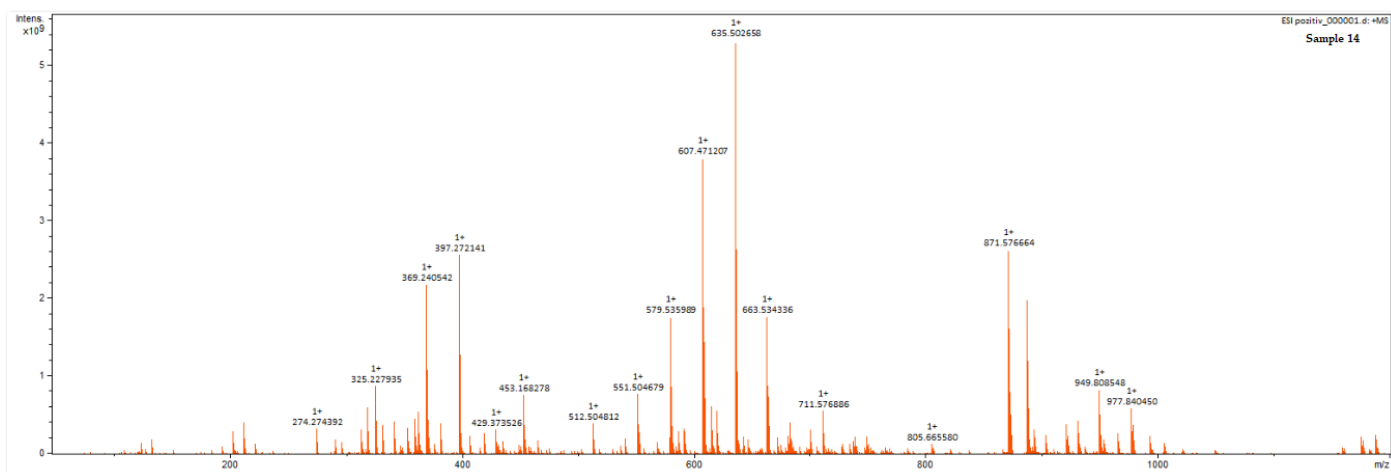


Figure S4\_14 FT-ICR-MS spectrum of MGL - extraction by maceration with hydroethanolic mixture - 60 min.

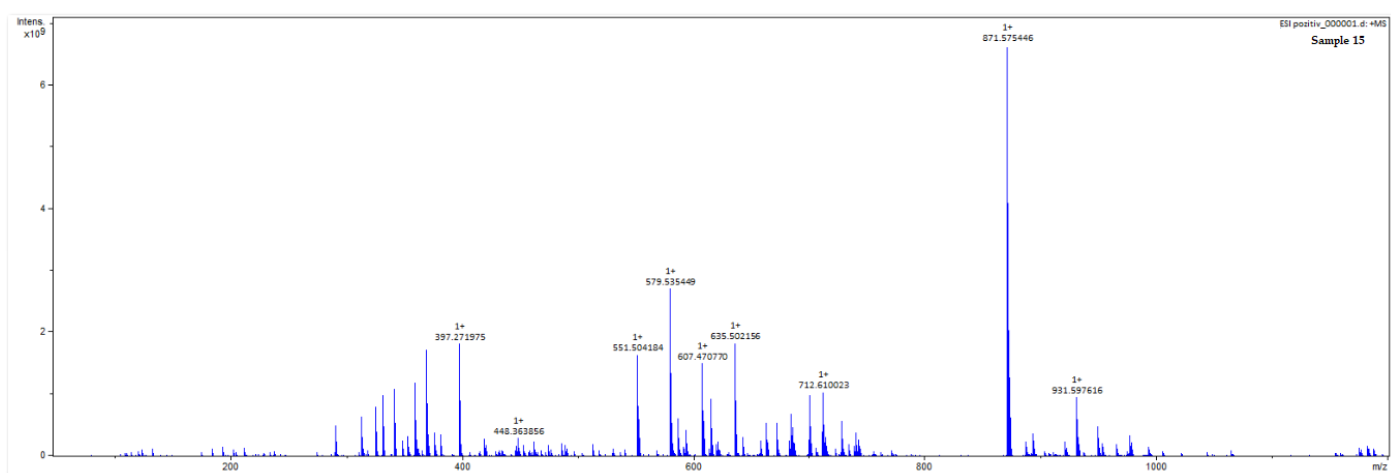


Figure S4\_15 FT-ICR-MS spectrum of YGL - ultrasound assisted-extraction with ethanol - 60 min.

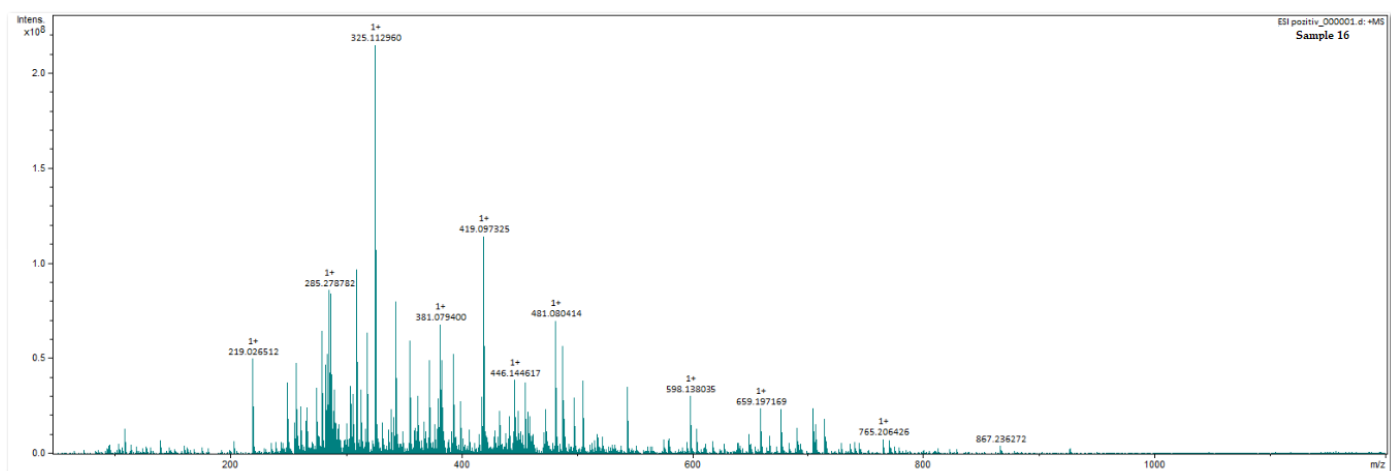


Figure S4\_16 FT-ICR-MS spectrum of YGL - ultrasound assisted-extraction with water - 60 min.

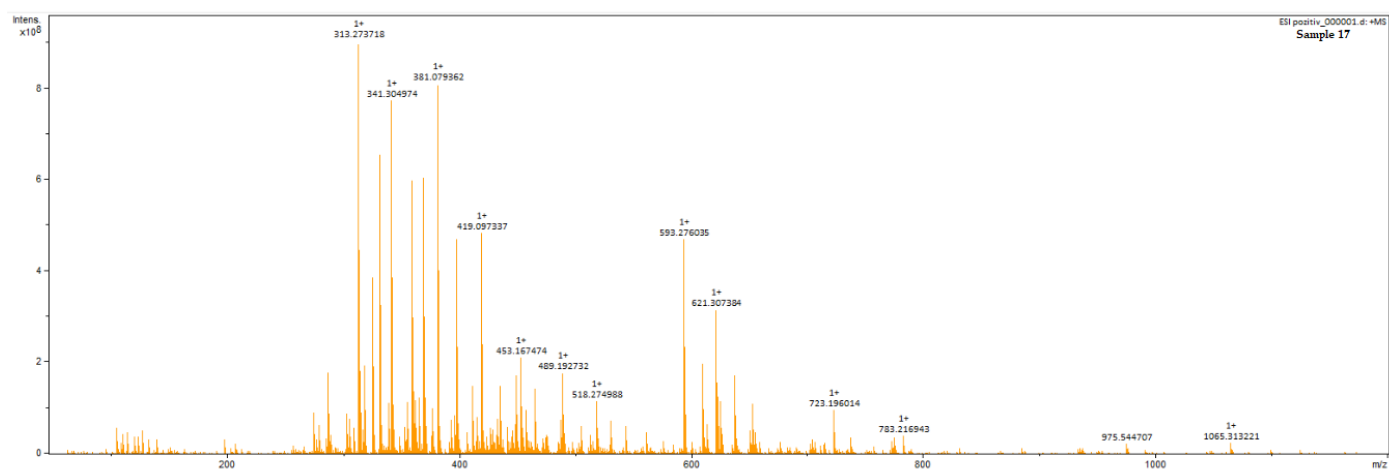


Figure S4\_17 FT-ICR-MS spectrum of YGL - ultrasound assisted-extraction with hydroethanolic mixture - 60 min.

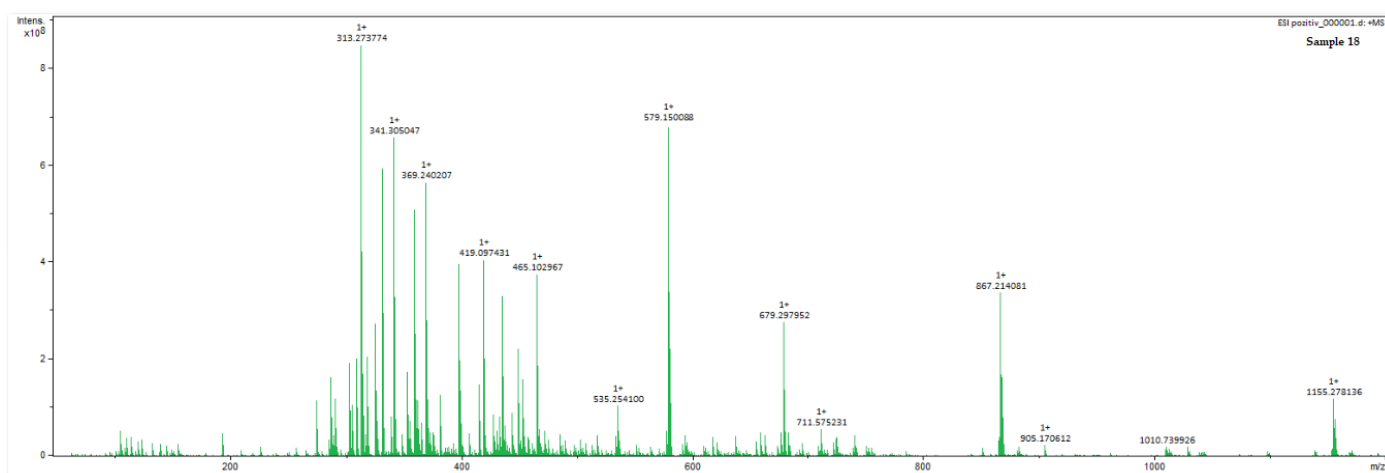


Figure S4\_18 FT-ICR-MS spectrum of GL - ultrasound assisted-extraction with ethanol - 60 min.

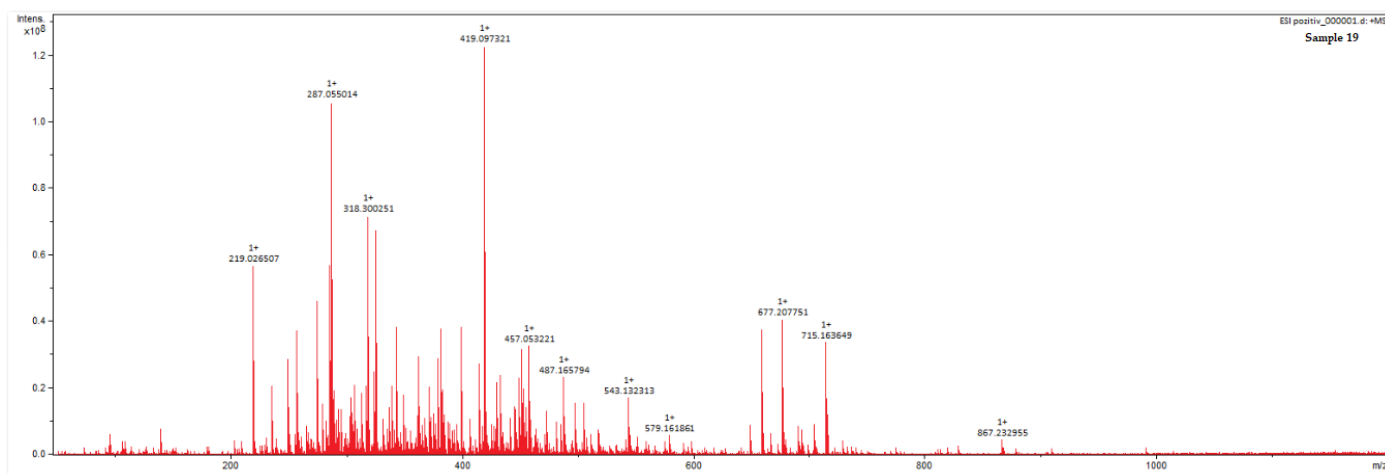


Figure S4\_19 FT-ICR-MS spectrum of GL - ultrasound assisted-extraction with water - 60 min.



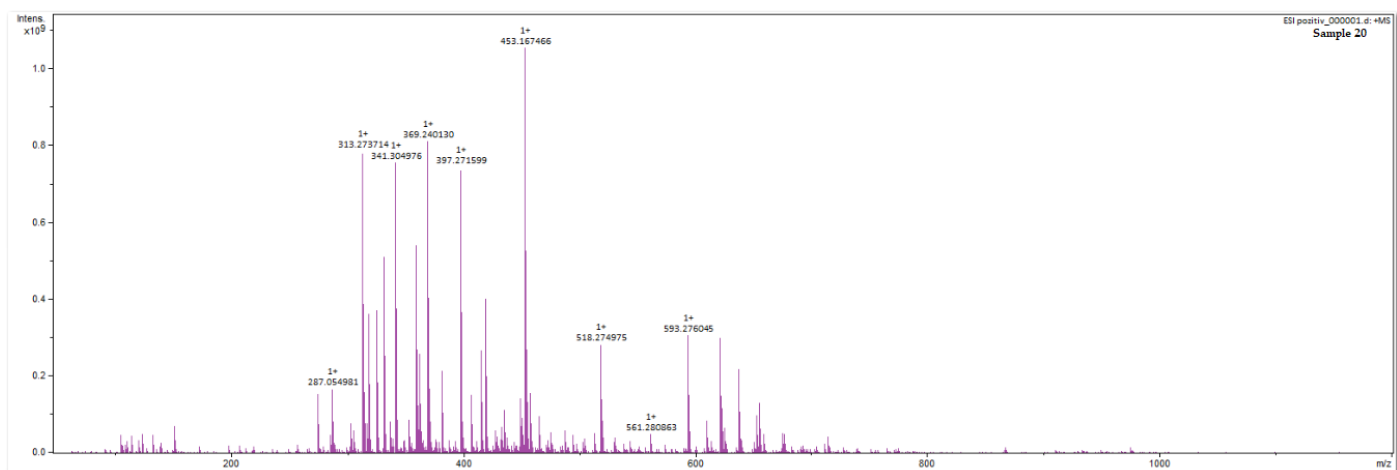


Figure S4\_20 FT-ICR-MS spectrum of GL - ultrasound assisted-extraction with hydroethanolic mixture - 60 min.

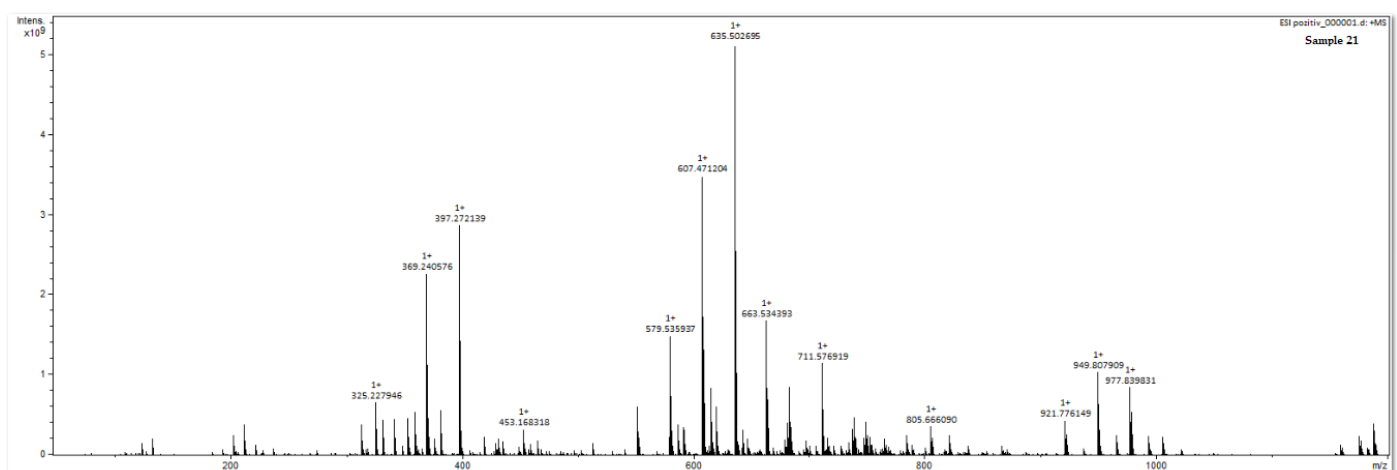


Figure S4\_21 FT-ICR-MS spectrum of YL - ultrasound assisted- extraction with ethanol - 60 min.

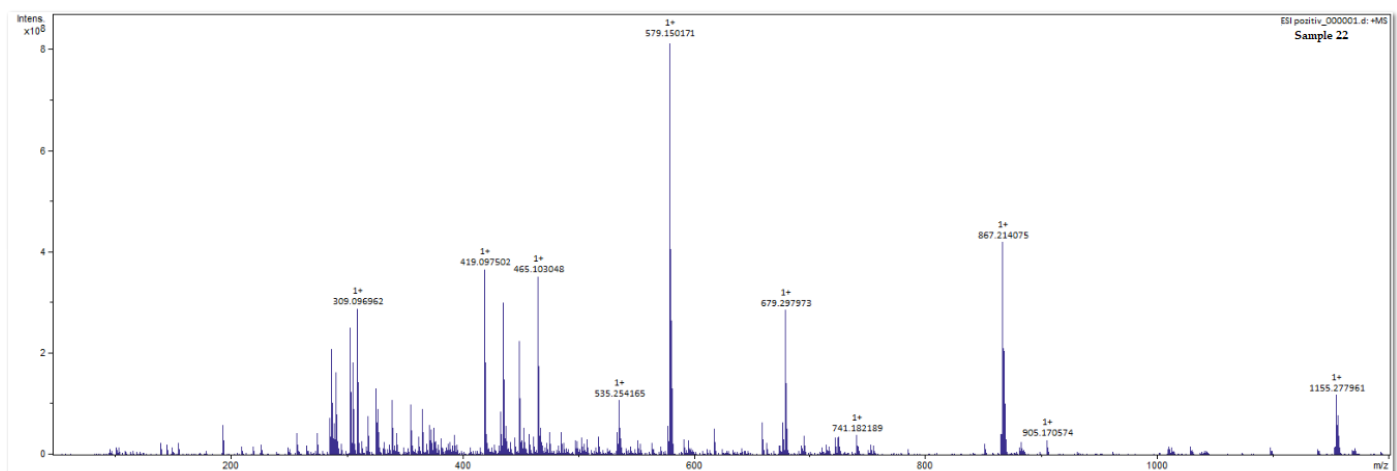


Figure S4\_22 FT-ICR-MS spectrum of YL - ultrasound assisted-extraction with water - 60 min.

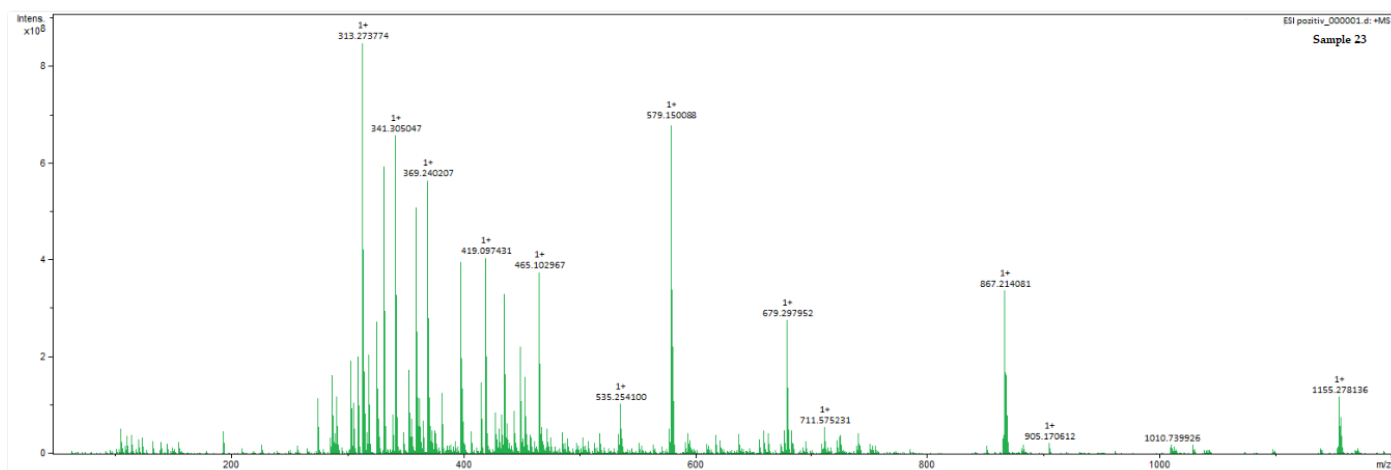


Figure S4\_23 FT-ICR-MS spectrum of YL - ultrasound assisted-extraction with hydroethanolic mixture - 60 min.

## TABLES

Table S1. Biological activities of the main compounds identified in the walnut leaf's extracts by means of FT-ICR-MS method.

Compound Class	Compound	Chemical formula	Biological activity [6,34,39,47-60]
Phenolic	Caffeic acid	C <sub>9</sub> H <sub>8</sub> O <sub>4</sub>	Antioxidant, anti-inflammatory and anti-carcinogenic activity
	Caftaric acid	C <sub>13</sub> H <sub>12</sub> O <sub>9</sub>	Antioxidant, antidiabetic, anti-inflammatory, anticarcinogenic, antiobesity
	Chlorogenic acid	C <sub>16</sub> H <sub>18</sub> O <sub>9</sub>	Antioxidant, lower blood pressure
	Ellagic acid	C <sub>14</sub> H <sub>6</sub> O <sub>8</sub>	Cytotoxic, anti-proliferative
	Ferulic acid	C <sub>10</sub> H <sub>10</sub> O <sub>4</sub>	Anticancerous
	Juglone	C <sub>10</sub> H <sub>6</sub> O <sub>3</sub>	Antibacterial, antiviral, anticancer, antioxidant
	p-coumaric acid	C <sub>9</sub> H <sub>8</sub> O <sub>3</sub>	Antioxidant
	Sinapate	C <sub>11</sub> H <sub>12</sub> O <sub>5</sub>	Antioxidant, antimicrobial
	3-p-coumaroylquinic acid	C <sub>16</sub> H <sub>18</sub> O <sub>8</sub>	Antibacterial
	Quercetin 3-o-arabinoside	C <sub>20</sub> H <sub>18</sub> O <sub>11</sub>	Antioxidant, anti-inflammatory
	Quercetin 3-rhamnoside	C <sub>21</sub> H <sub>20</sub> O <sub>11</sub>	Antioxidant, anti-inflammatory, anti-cancer and lipid peroxidation inhibitory activities
	Quercetin 3-o-pentoside	C <sub>25</sub> H <sub>26</sub> O <sub>15</sub>	Antioxidant
Flavonoid	Quercetin	C <sub>15</sub> H <sub>10</sub> O <sub>7</sub>	Analgesic, antibacterial, antiviral
	Myricetin	C <sub>15</sub> H <sub>10</sub> O <sub>8</sub>	Anticancer, antidiabetic, antibacterial, antiviral
	Kaempferol	C <sub>15</sub> H <sub>10</sub> O <sub>6</sub>	Acute and chronic inflammation
	Kaempferol 3-o-arabinoside	C <sub>20</sub> H <sub>18</sub> O <sub>10</sub>	Antioxidant
	Kaempferol-3-o-rhamnoside	C <sub>21</sub> H <sub>20</sub> O <sub>10</sub>	Antioxidant, anti-tumor
	Isokaempferide	C <sub>16</sub> H <sub>12</sub> O <sub>6</sub>	Hepatoprotective, antimicrobial, anti-proliferative effect
	Catechin hydrate	C <sub>15</sub> H <sub>14</sub> O <sub>6</sub> +H <sub>2</sub> O	Antioxidant, anticancer
	Hyperoside	C <sub>21</sub> H <sub>20</sub> O <sub>12</sub>	Anti-inflammatory, anti-oxidant stress, anti-swelling, anti-bacterial and anti-viral effects
Flavone	Luteolin	C <sub>15</sub> H <sub>10</sub> O <sub>6</sub>	Anticancer, anti-inflammatory
Flavanone	Naringenin	C <sub>15</sub> H <sub>12</sub> O <sub>5</sub>	Antiviral, antibacterial, antioxidant

Flavonone	Hesperetin	C <sub>21</sub> H <sub>20</sub> O <sub>12</sub>	Scavenging activity and cardioprotective activity
Flavanol	Catechin	C <sub>15</sub> H <sub>14</sub> O <sub>6</sub>	Antioxidant, anti-inflammatory
	Epigallocatechin	C <sub>15</sub> H <sub>14</sub> O <sub>7</sub>	Antioxidant, antitumor
	Epigallocatechin gallate	C <sub>22</sub> H <sub>18</sub> O <sub>11</sub>	Reduce inflammation, aid weight loss, help prevent heart and brain disease
	Fisetinidol	C <sub>15</sub> H <sub>14</sub> O <sub>5</sub>	Antioxidant, antibacterial
Tereponoid	Guibourtinidol	C <sub>15</sub> H <sub>14</sub> O <sub>4</sub>	Antioxidant, prevent HIV-1
	Oleanic acid	C <sub>30</sub> H <sub>48</sub> O <sub>3</sub>	Dyslipidemia, diabetes, and metabolic syndrome
Steroid	Stigmasterol	C <sub>29</sub> H <sub>48</sub> O	Anticancerous, dyslipidemia, diabetes, and metabolic syndrome
Vitamin	Resveratrol	C <sub>14</sub> H <sub>12</sub> O <sub>3</sub>	Anti-inflammatory, anti-oxidant and anti-carcinogenic effects
	Myo-inositol	C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	Prevent and improve insulin resistance
	Taxifolin	C <sub>15</sub> H <sub>12</sub> O <sub>7</sub>	Antioxidant, support immune, respiratory, skin and cellular health benefits
Anthocyanidin	Pelargonidin	C <sub>15</sub> H <sub>11</sub> O <sub>5</sub> <sup>+</sup>	Antioxidant
	Malvidin	C <sub>17</sub> H <sub>15</sub> O <sub>7</sub> <sup>+</sup>	Antioxidant, anti-inflammatory
	Cyanidin 3-glucoside chloride	C <sub>21</sub> H <sub>21</sub> ClO <sub>11</sub>	Antioxidant, anti-inflammatory, anti-ischemic, anti-cancer
Other compounds	Quinic acid	C <sub>7</sub> H <sub>12</sub> O <sub>6</sub>	Radioprotection, anti-neuroinflammatory, antioxidant
	Citric acid	C <sub>6</sub> H <sub>8</sub> O <sub>7</sub>	Antibacterial, antioxidant, anti-inflammatory
	Azelaic acid	C <sub>9</sub> H <sub>16</sub> O <sub>4</sub>	Anti-inflammatory, antioxidant
	Asiatic acid	C <sub>30</sub> H <sub>48</sub> O <sub>5</sub>	Antioxidant, anti-aging