

## **SUPPLEMENTARY INFORMATION**

### **Access to anti-biofilm compounds from endolichenic fungi using a bioguided networking screening.**

Seinde Toure<sup>a</sup>, Marion Millot<sup>a\*</sup>, Lucie Ory<sup>b</sup>, Catherine Roulier<sup>b</sup>, Zineb Khaldi<sup>a</sup>, Valentin Pichon<sup>a</sup>, Marion Girardot<sup>c</sup>, Christine Imbert<sup>c</sup>, Lengo Mambu<sup>a</sup>

<sup>a</sup> Univ. Limoges, Laboratoire PEIRENE, UR 22722, F-87000 Limoges, France













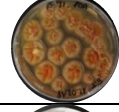
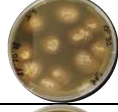
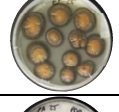
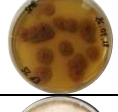




<sup>b</sup> Nantes Université, Institut des Substances et Organismes de la Mer (ISOMer), UR 2160, F-44000, Nantes, France



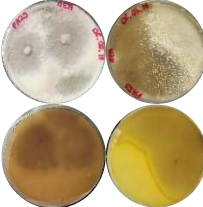






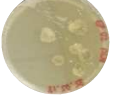


<sup>c</sup> Univ. Poitiers, Laboratoire Ecologie et Biologie des Interactions (EBI), UMR CNRS 7267, F-86000, Poitiers, France

Table S1. Fungal strains description

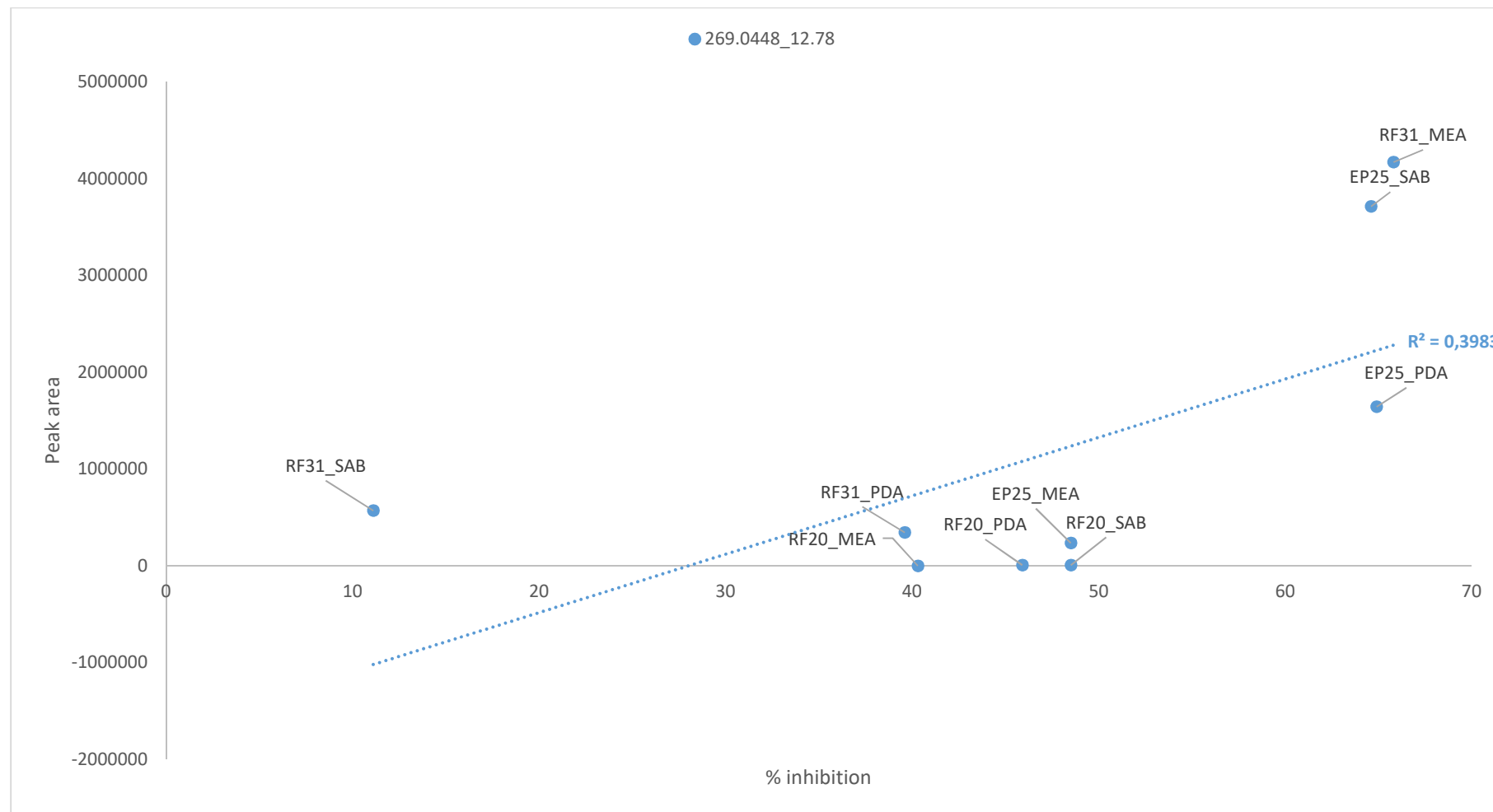
Species	Class	Order	Family	Accession number	Lichen source
<i>Anthostomella pinea</i>	Sordariomycetes	Xylariales	Xylariaceae	MG543933	<i>Evernia prunastri</i>
<i>Biscogniauxia nummularia</i>	Sordariomycetes	Xylariales	Xylariaceae	MG543960	<i>Ramalina fastigiata</i>
<i>Biscogniauxia nummularia</i>	Sordariomycetes	Xylariales	Xylariaceae	MG543965	<i>Ramalina fastigiata</i>
<i>Biscogniauxia mediterranea</i>	Sordariomycetes	Xylariales	Xylariaceae	MG543959	<i>Ramalina fastigiata</i>
<i>Biscogniauxia mediterranea</i>	Sordariomycetes	Xylariales	Xylariaceae	MG543963	<i>Ramalina fastigiata</i>
<i>Coniochaeta hoffmannii</i>	Sordariomycetes	Coniochaetales	Coniochaetaceae	MG543962	<i>Ramalina fastigiata</i>
<i>Coniochaeta lignicola</i>	Sordariomycetes	Coniochaetales	Coniochaetaceae	MG543934	<i>Ramalina fastigiata</i>
<i>Coniochaeta decumbens</i>	Sordariomycetes	Coniochaetales	Coniochaetaceae	MG543958	<i>Ramalina fastigiata</i>
<i>Fusarium avenaceum</i>	Sordariomycetes	Hypocreales	Nectriaceae	MG543945	<i>Pleurosticta acetabulum</i>
<i>Peziza varia</i>	Pezizomycetes	Pezizales	Pezizaceae	MG917006	<i>Nephroma laevigatum</i>
<i>Plectania melastoma</i>	Pezizomycetes	Pezizales	Sarcosomataceae	MG543948	<i>Pleurosticta acetabulum</i>
<i>Preussia persica</i>	Dothideomycetes	Pleosporales	Sporormiaceae	MG543927	<i>Evernia prunastri</i>
<i>Preussia persica</i>	Dothideomycetes	Pleosporales	Sporormiaceae	MG543964	<i>Ramalina fastigiata</i>
<i>Sordaria fimicola</i>	Sordariomycetes	Sordariales	Sordariaceae	MG543930	<i>Evernia prunastri</i>

Table S2. Endolichenic fungi culture

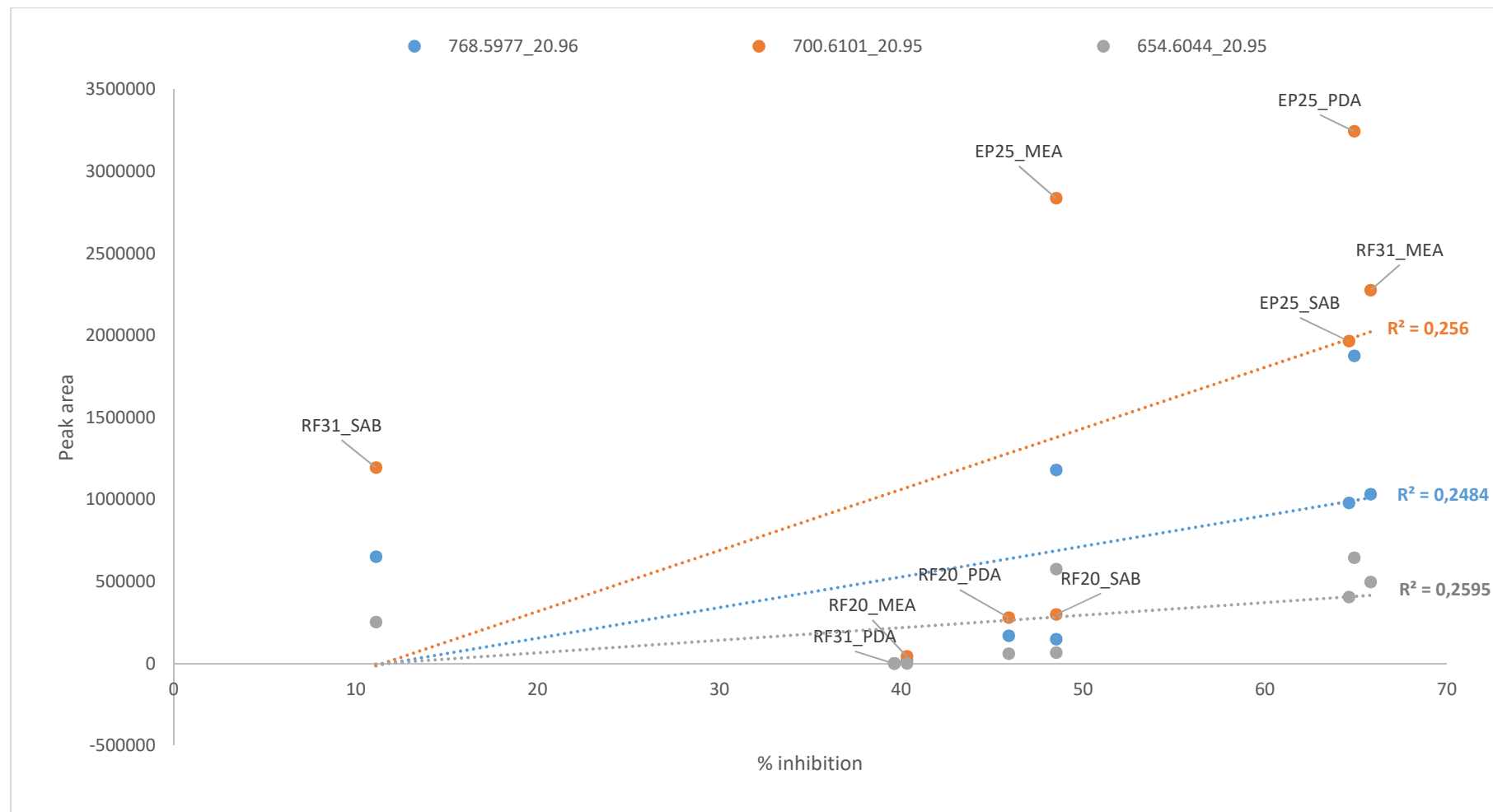
Identification	Code	PDA	SAB	MEA	Comments
<i>Anthostomella pinea</i>	EP22				Growth very slow. Extraction after xx weeks
<i>Biscogniauxia nummularia</i> Genotype 1	RF09				
<i>Biscogniauxia nummularia</i> Genotype 2	RF11				
<i>Biscogniauxia mediterranea</i> Genotype 1	RF13				
<i>Coniochaeta hoffmannii</i>	RF20				
<i>Biscogniauxia mediterranea</i> Genotype 2	RF26				
<i>Coniochaeta decumbens</i>	RF31				
<i>Coniochaeta lignicola</i>	EP25				
<i>Fusarium avenaceum</i>	PA25				

<i>Plectania melastoma</i>	PA39				
<i>Peziza varia</i>	Gir02				On MEA medium, color white-brown or rosish
<i>Sordaria fimicola</i> (1)	EP01				
<i>Preussia persica</i> (1)	RF28				No growth from cryotubes
<i>Preussia persica</i> (2)	EP02				

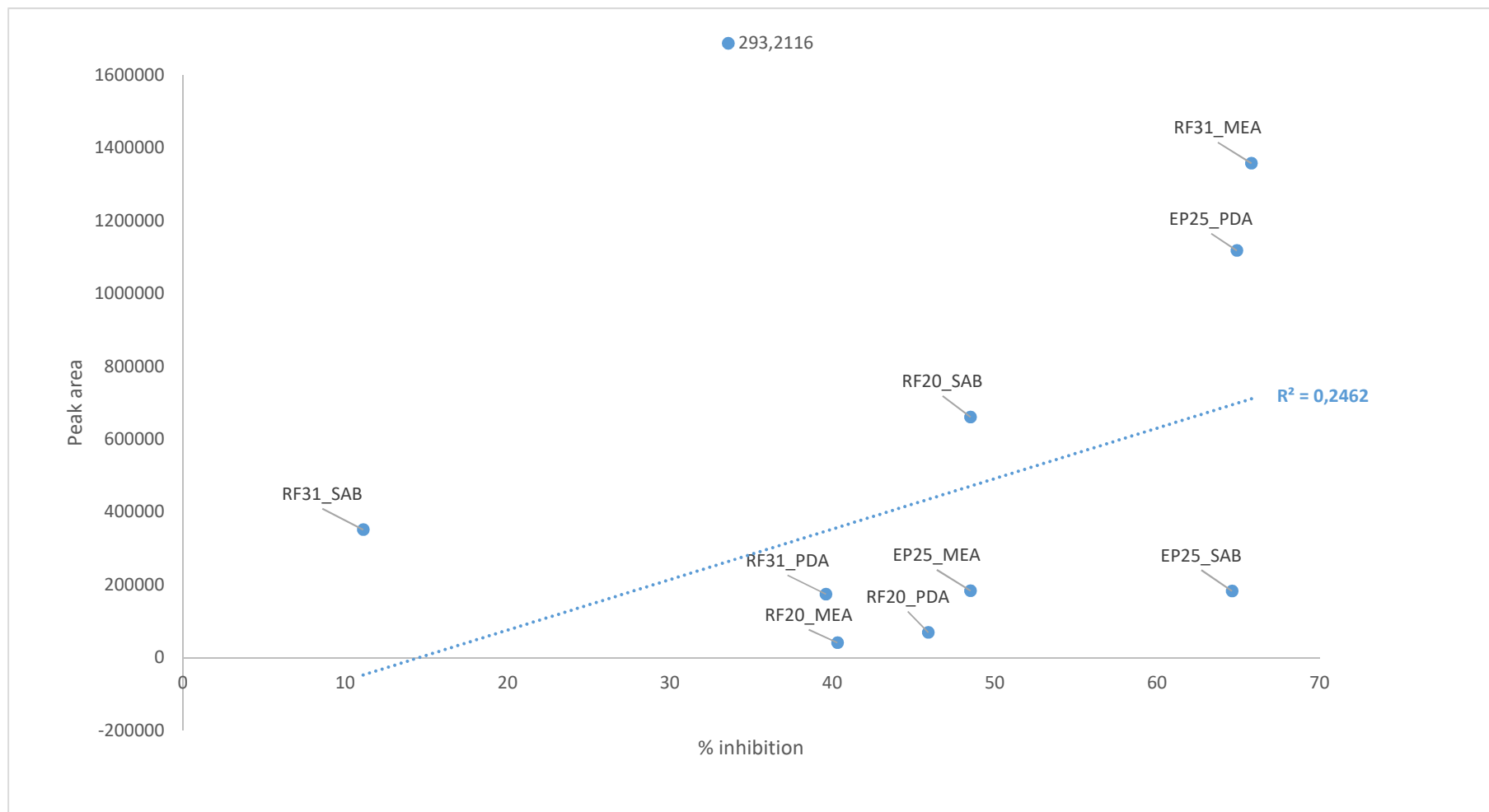
**Figure S1.** Scatter plot presenting peak areas of highlighted feature  $m/z$  269.0448 at 12.8 min (emodin) in correlation with the activity of the corresponding extracts of *Coniochaeta* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



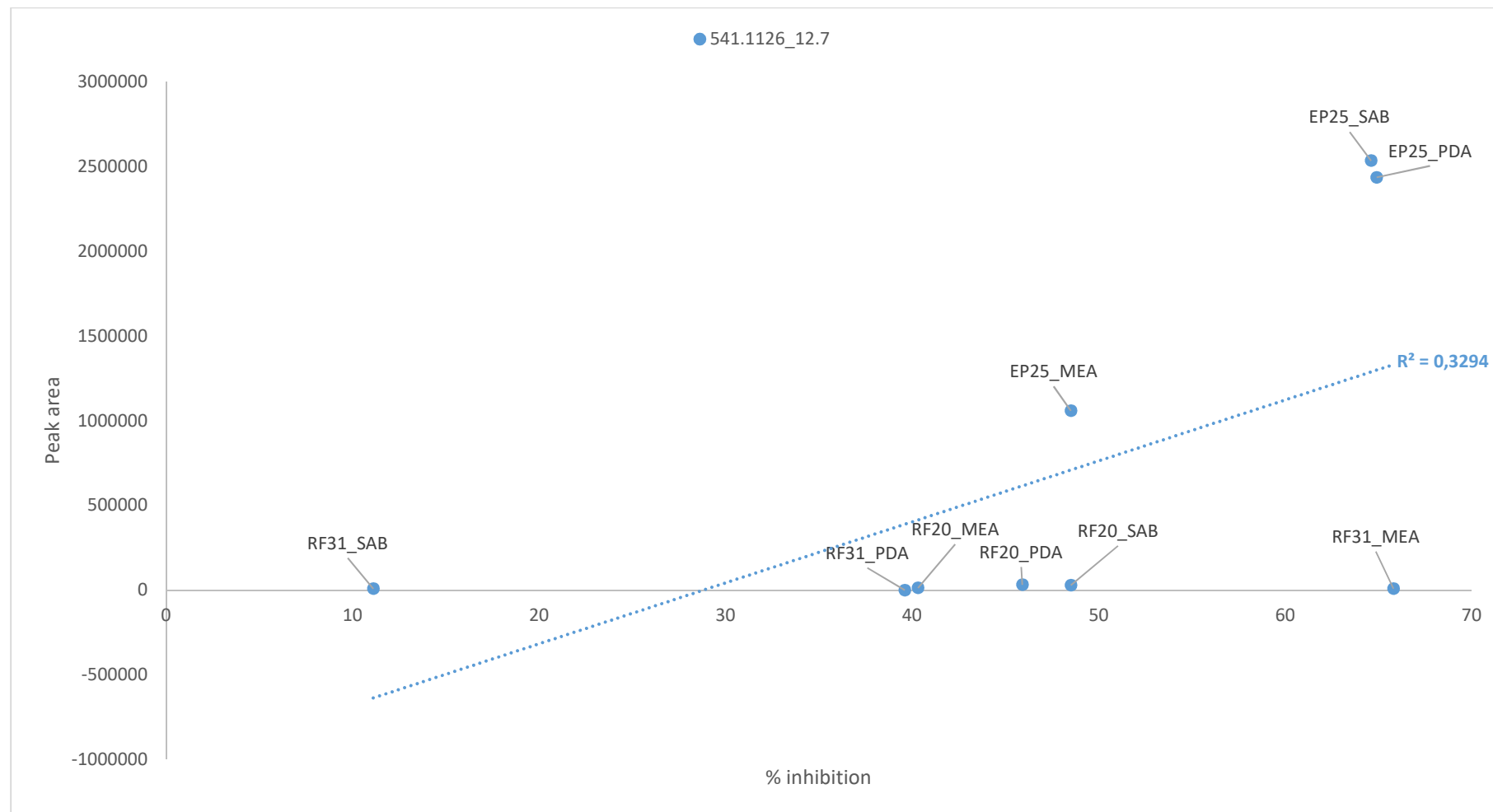
**Figure S2.** Scatter plot presenting peak areas of highlighted features  $m/z$  654.6044, 700.6101 and 768.5977 at 21.0 min in correlation with the activity of the corresponding extracts of *Coniochaeta* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



**Figure S3.** Scatter plot presenting peak areas of highlighted feature  $m/z$  298.2116 at 14.1 min in correlation with the activity of the corresponding extracts of *Coniochaeta* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.

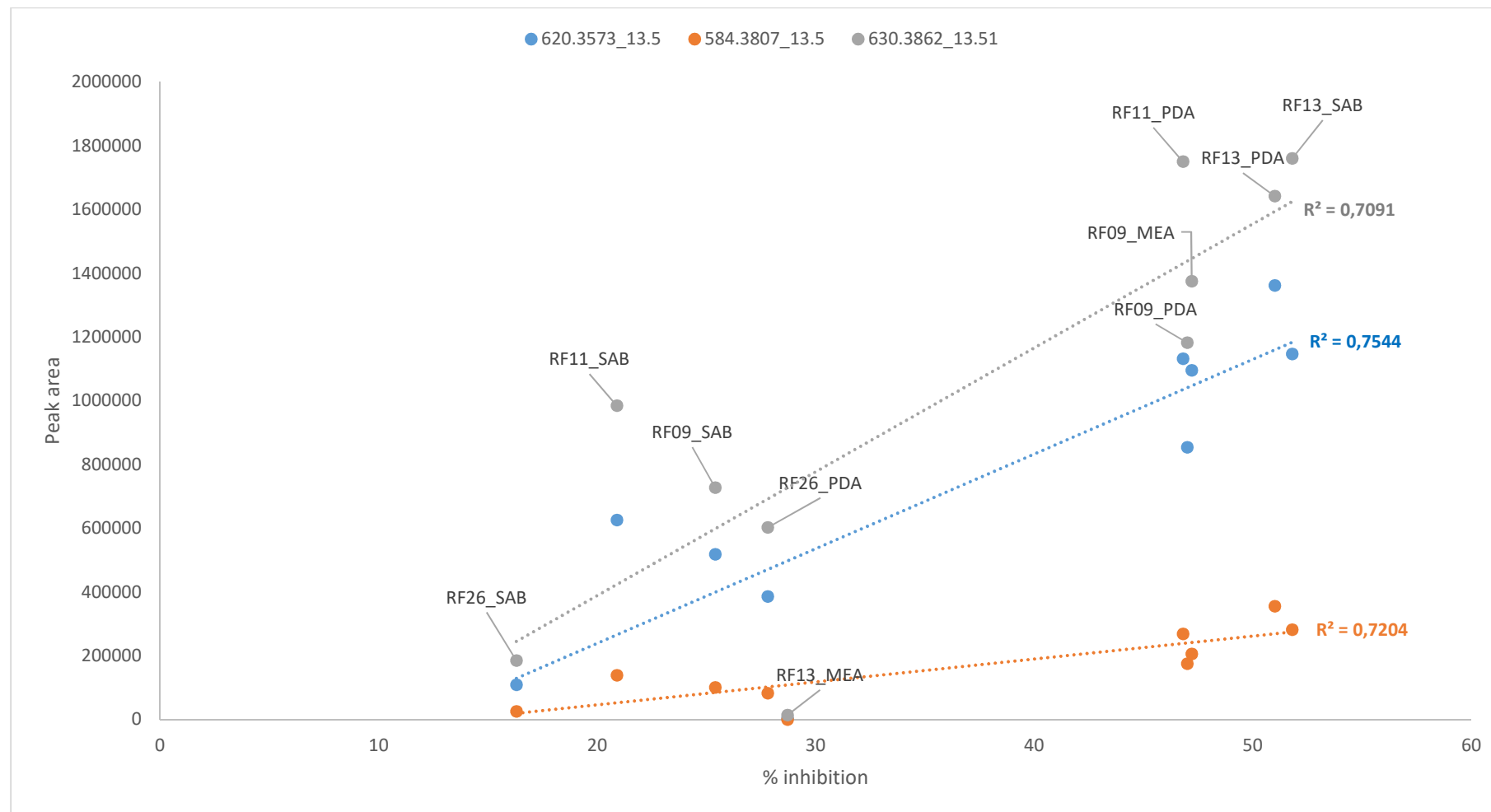


**Figure S4.** Scatter plot presenting peak areas of highlighted feature  $m/z$  541.1126 at 12.7 min (emodin) in correlation with the activity of the corresponding extracts of *Coniochaeta* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.

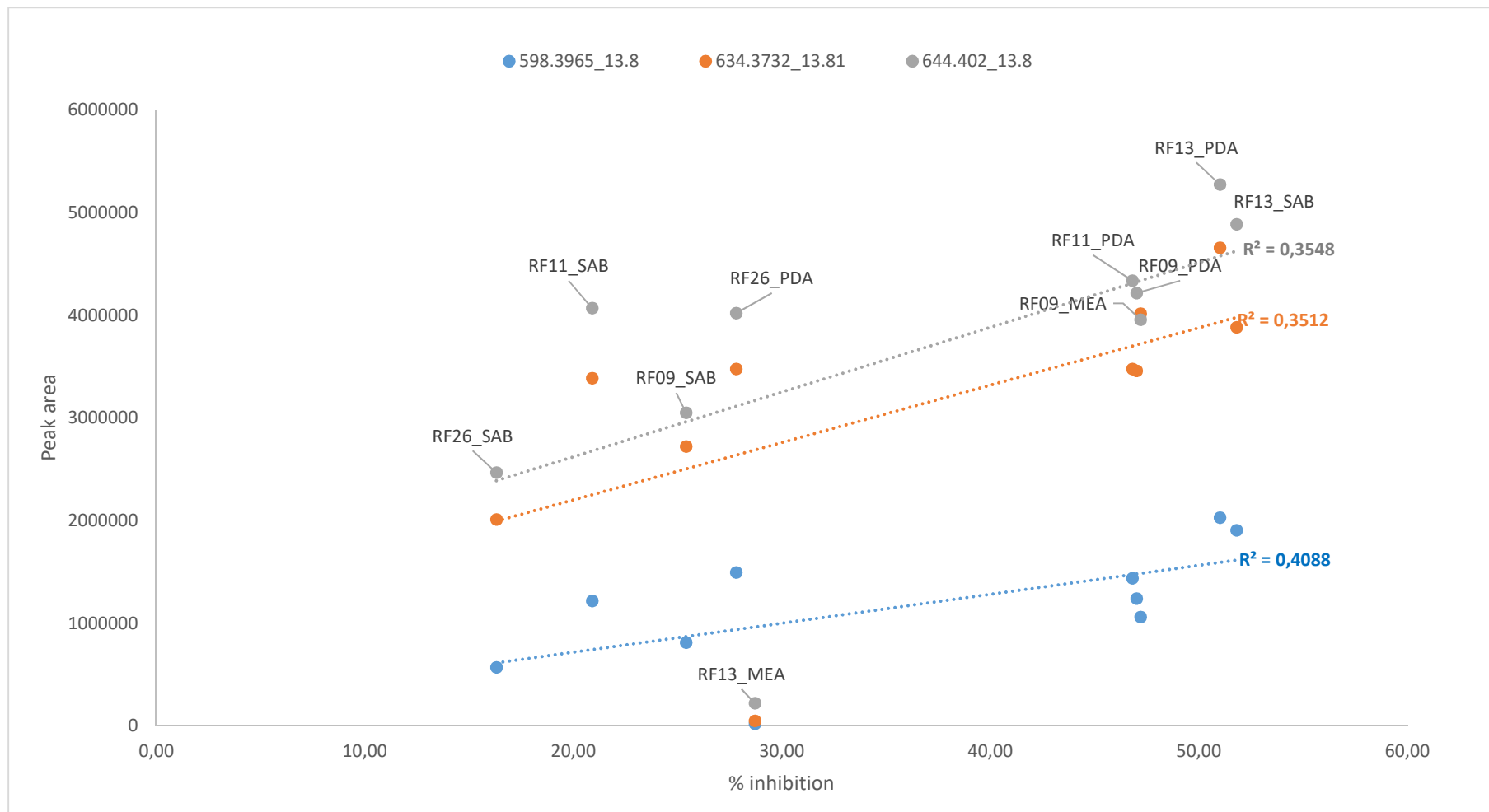




**Figure S5.** Scatter plot presenting peak areas of highlighted features  $m/z$  584.3807, 620.3573 and 630.3862 at 13.5 min in correlation with the activity of the corresponding extracts of *Biscogniauxia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



**Figure S6.** Scatter plot presenting peak areas of highlighted features  $m/z$  598.3965, 634.3732 and 644.4020 at 13.8 min in correlation with the activity of the corresponding extracts of *Biscogniauxia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



**Figure S7.** Scatter plot presenting peak areas of highlighted feature  $m/z$  269.2119 at 14.9 min in correlation with the activity of the corresponding extracts of *Biscogniauxia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.

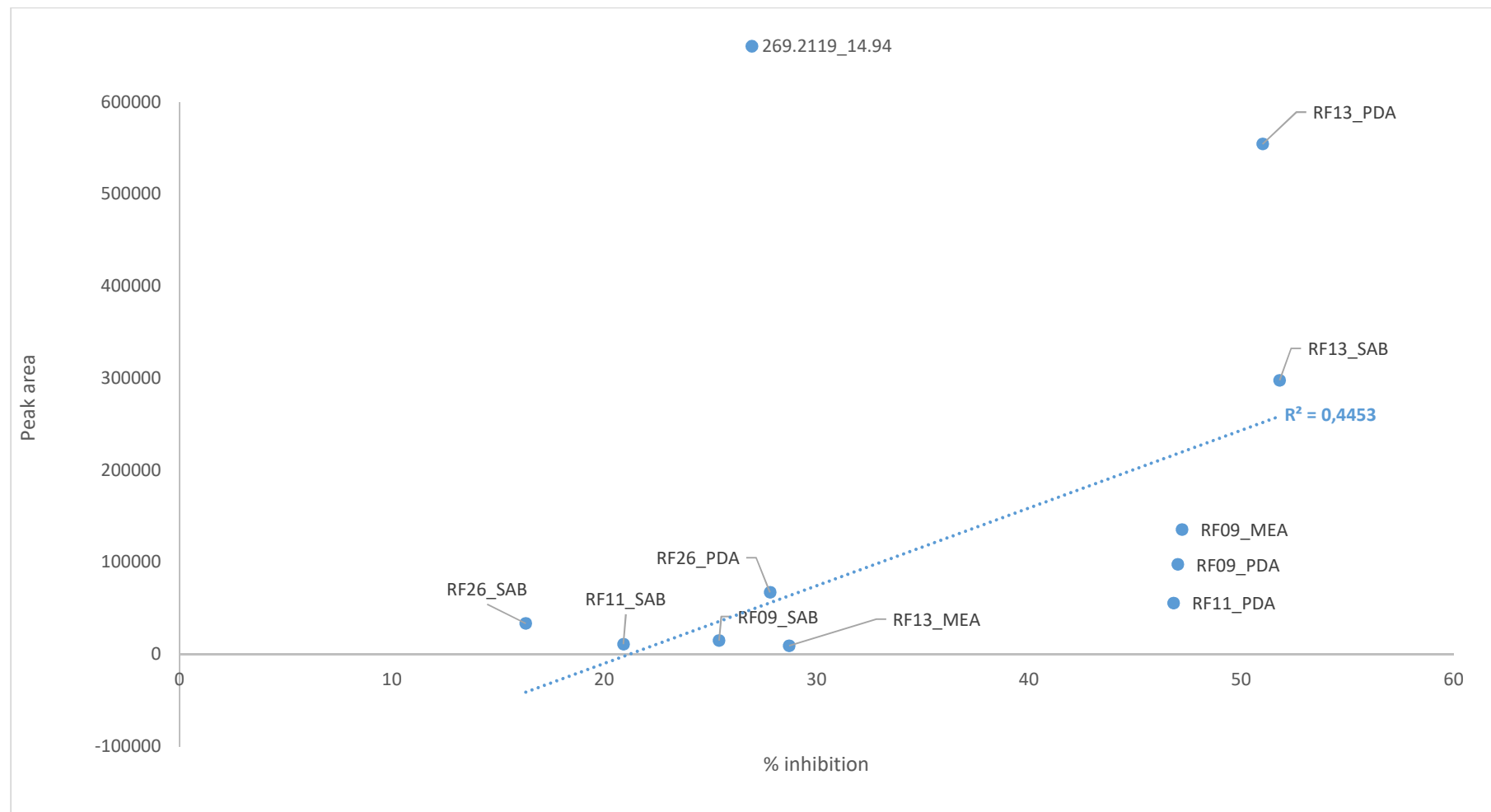
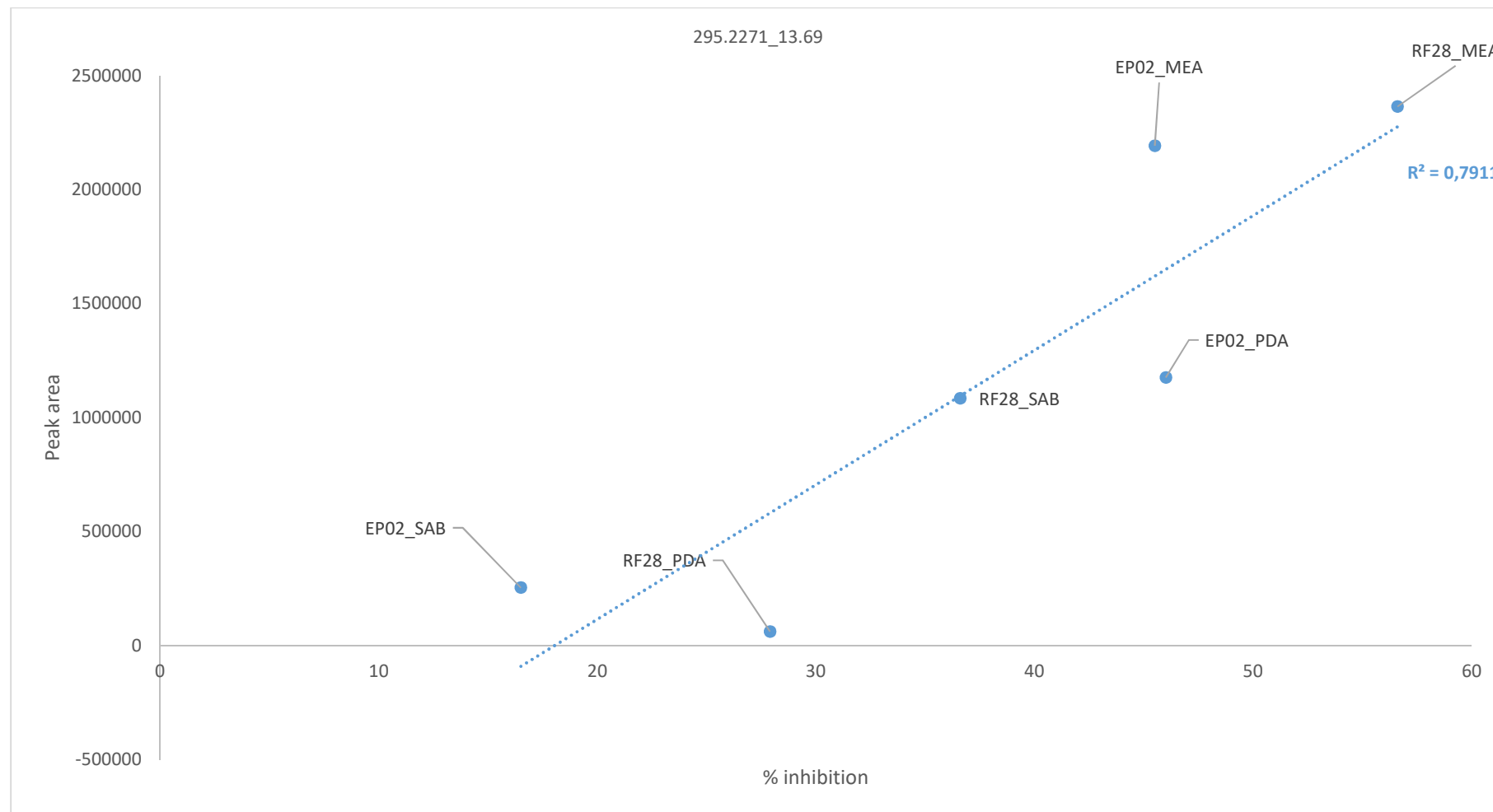


Figure S8. Scatter plot presenting peak areas of highlighted feature  $m/z$  295.2271 at 13.7 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



**Figure S9.** Scatter plot presenting peak areas of highlighted feature  $m/z$  311.2219 at 13.0 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.

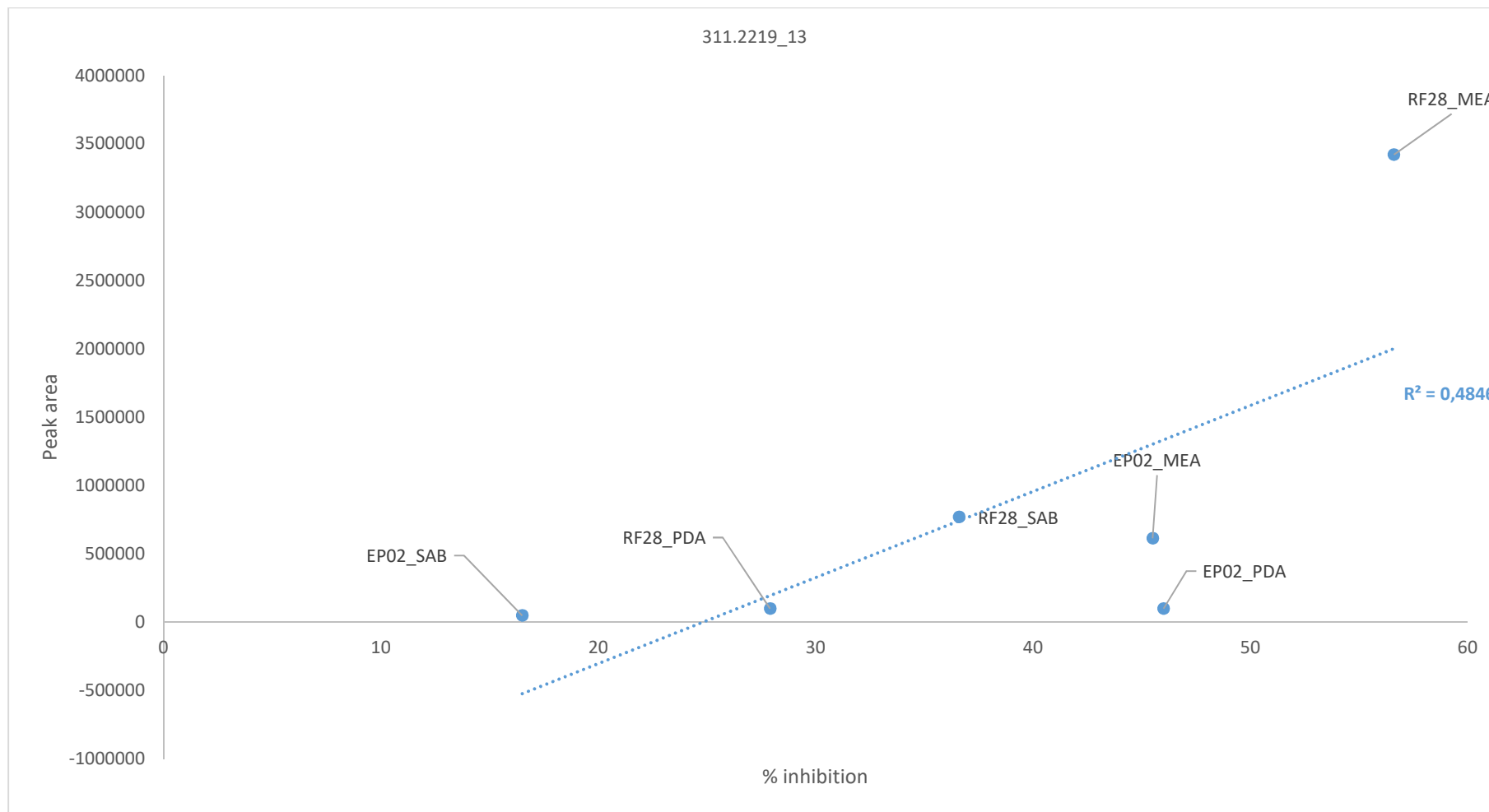


Figure S10. Scatter plot presenting peak areas of highlighted feature  $m/z$  589.4468 at 16.2 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.

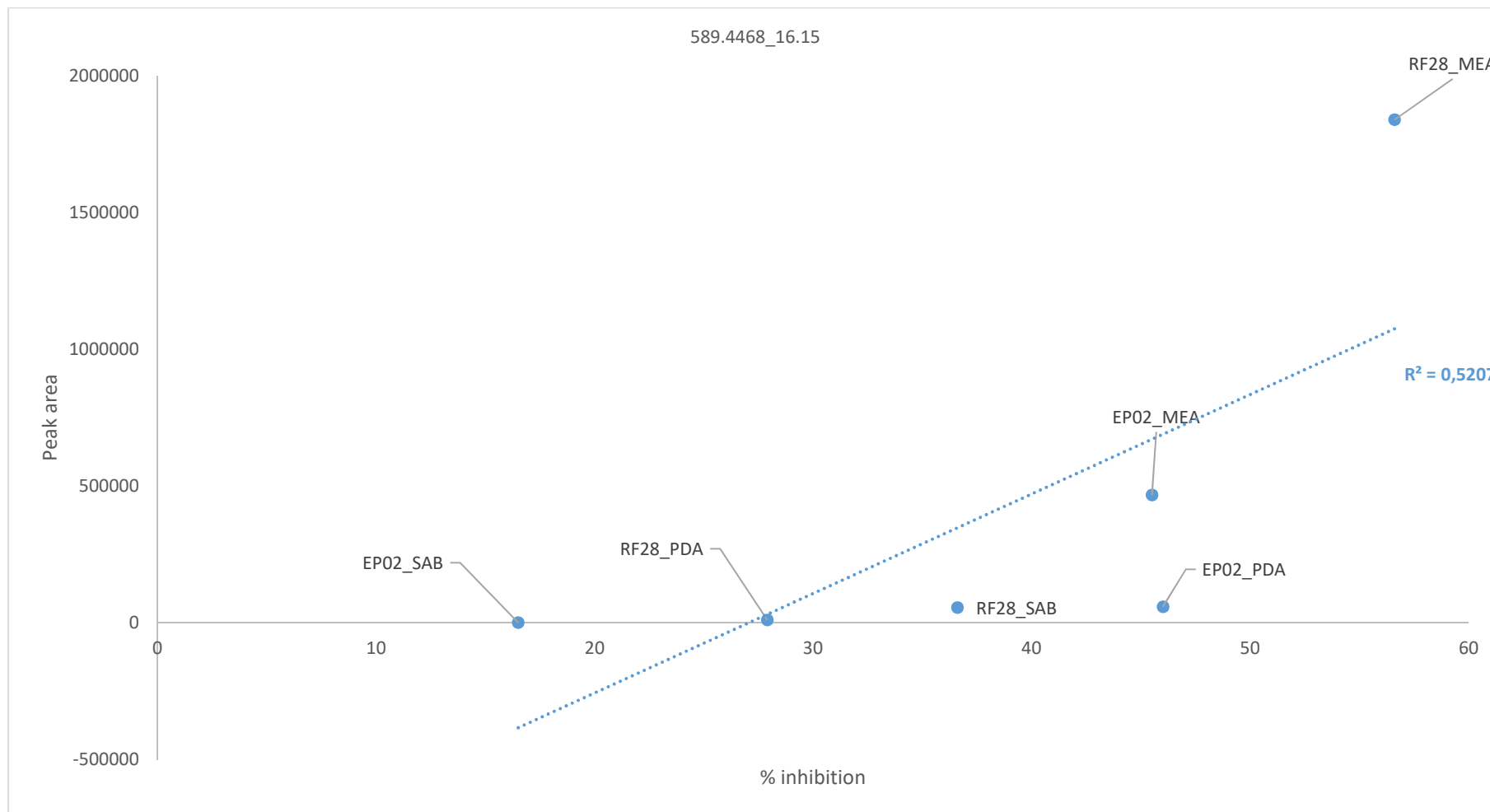
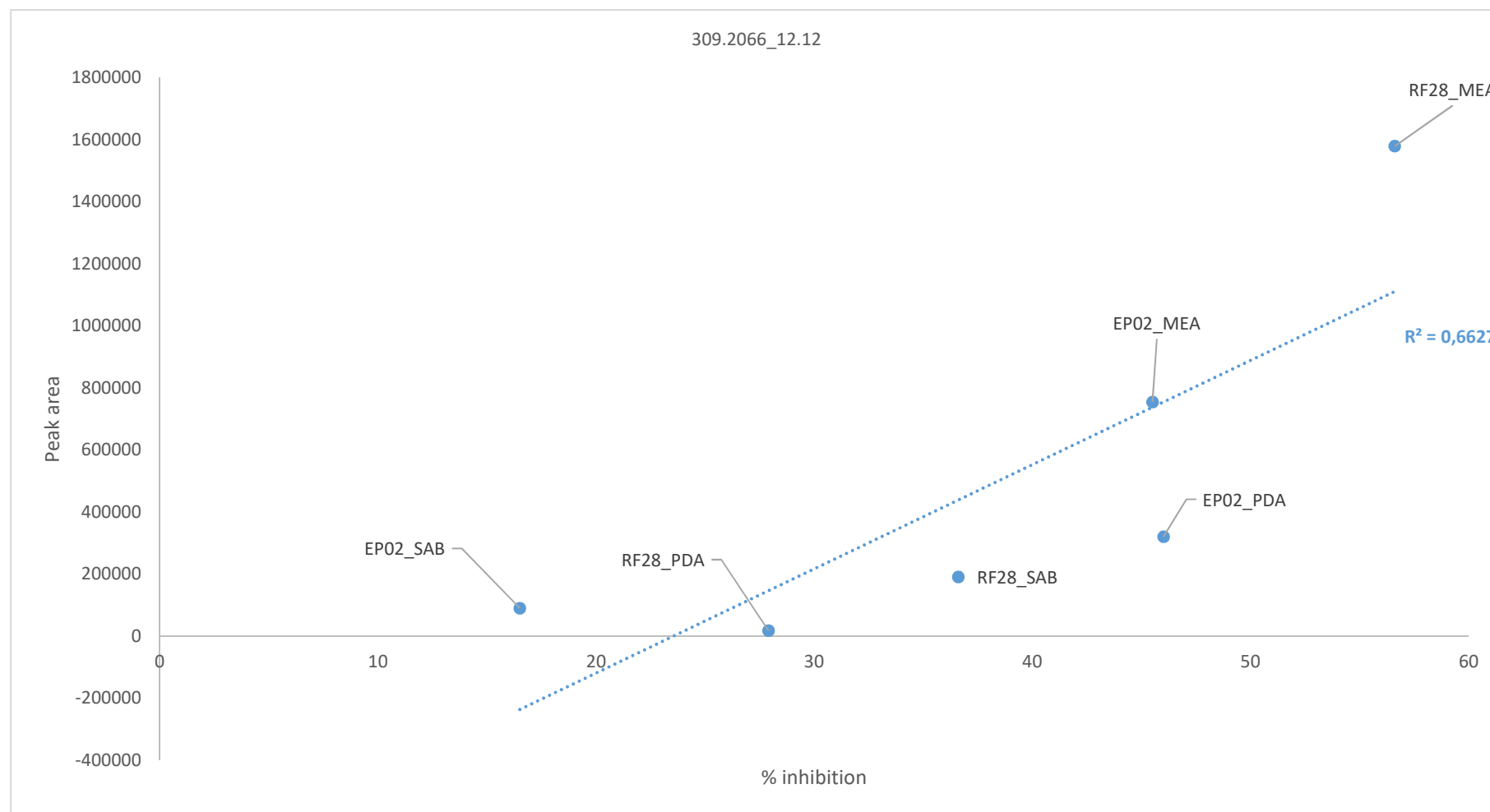
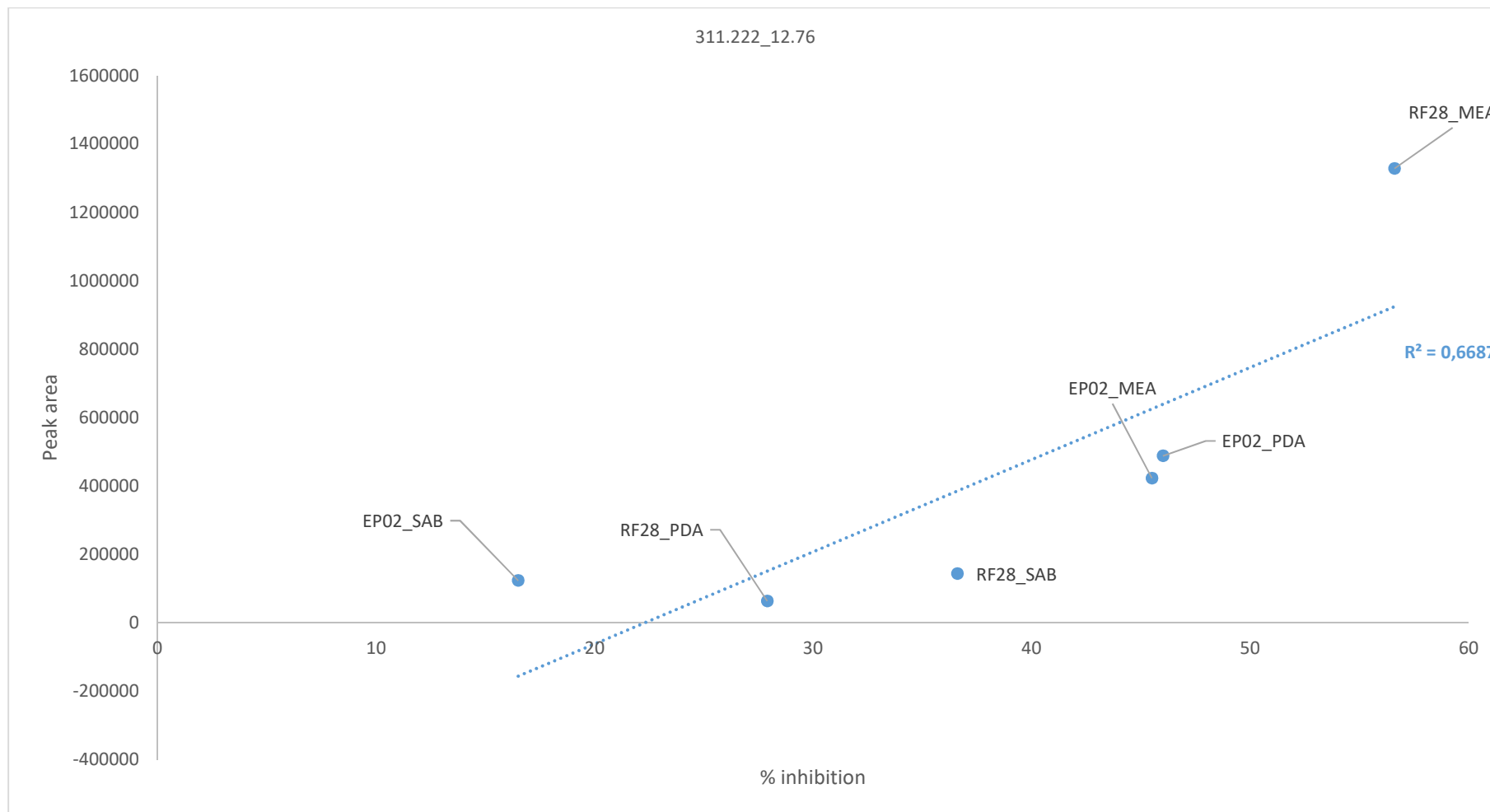


Figure S11. Scatter plot presenting peak areas of highlighted feature  $m/z$  309.2066 at 12.1 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.

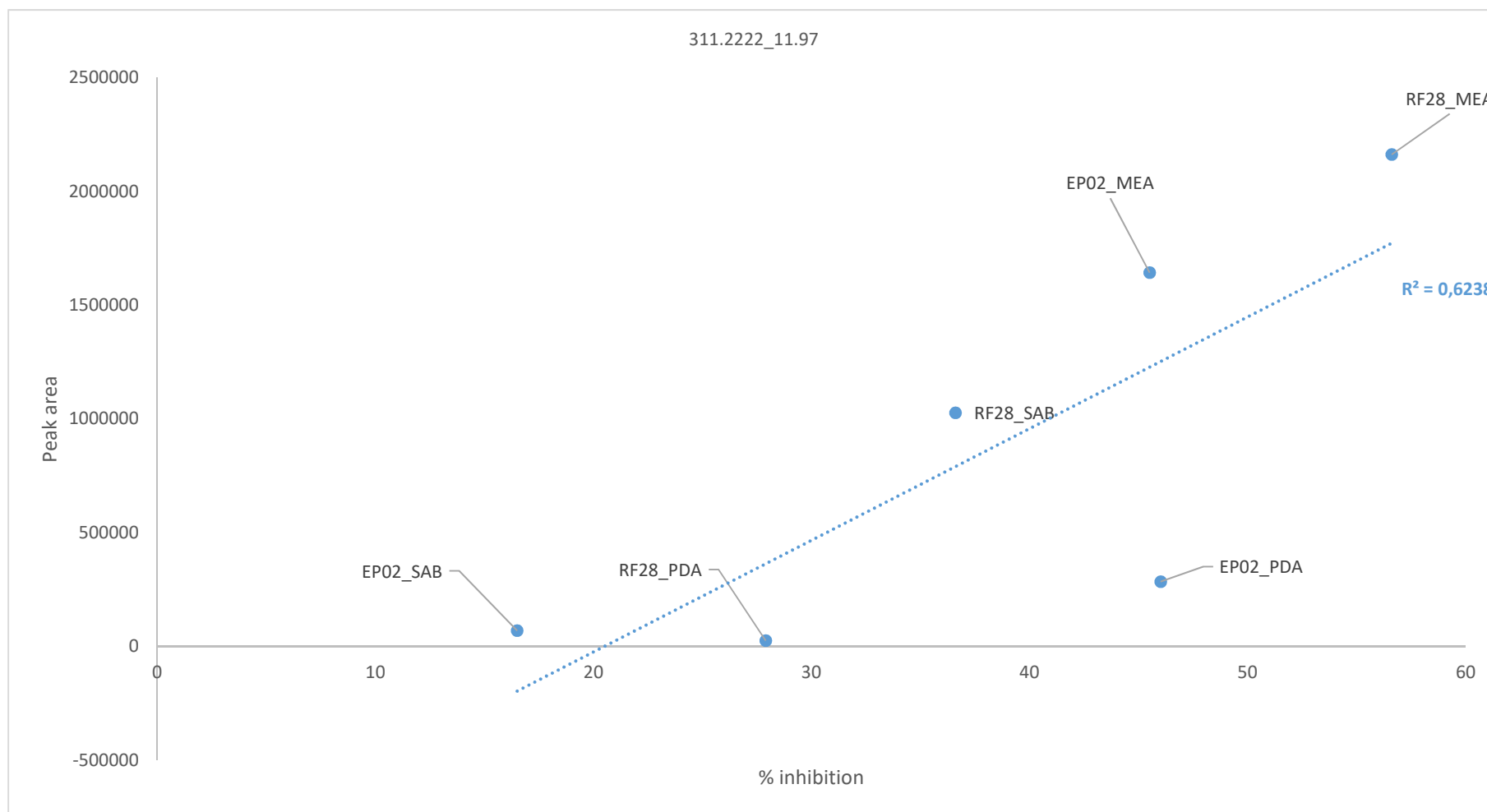


**Figure S12.** Scatter plot presenting peak areas of highlighted feature  $m/z$  311.222 at 12.8 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.

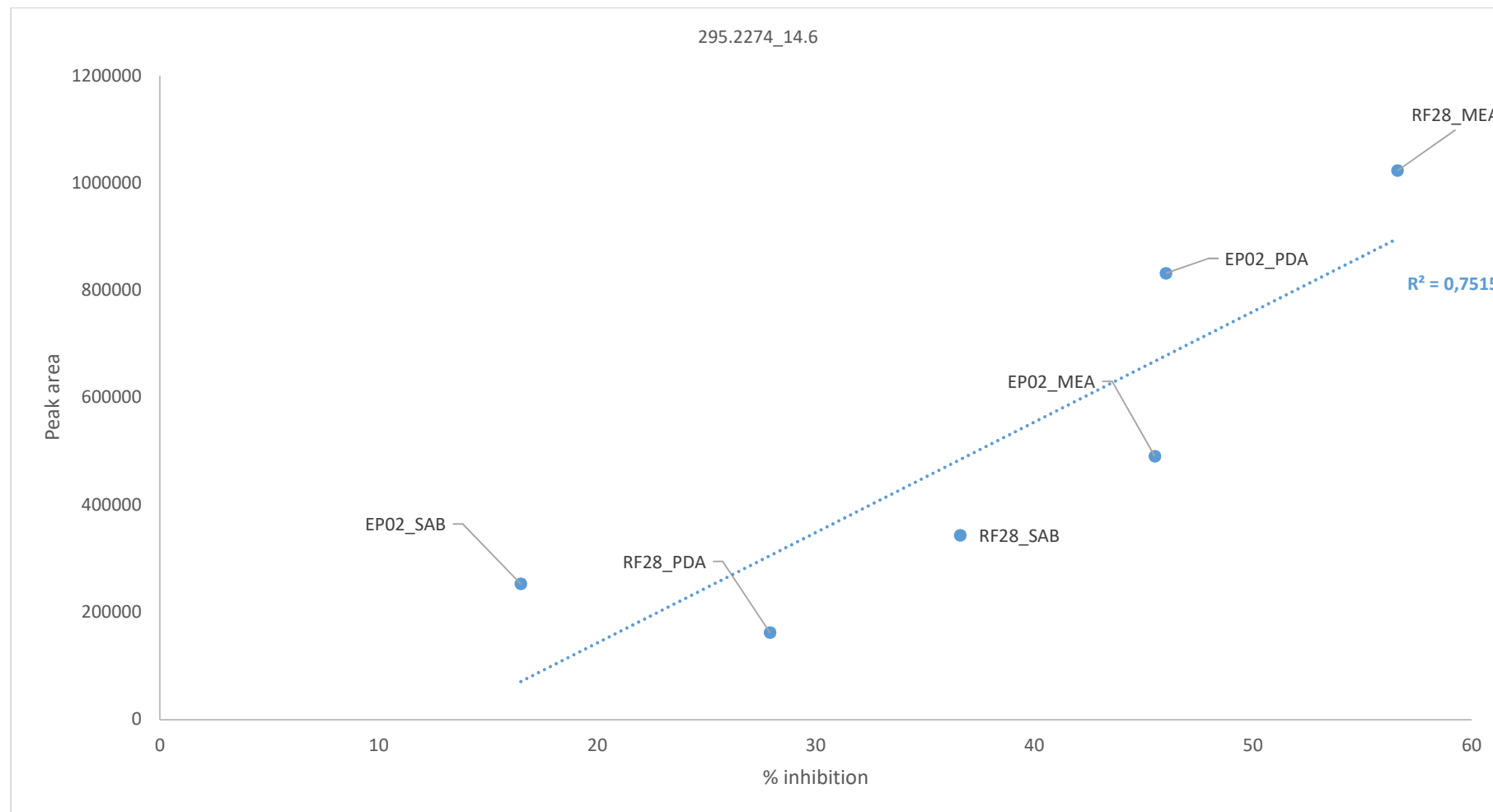




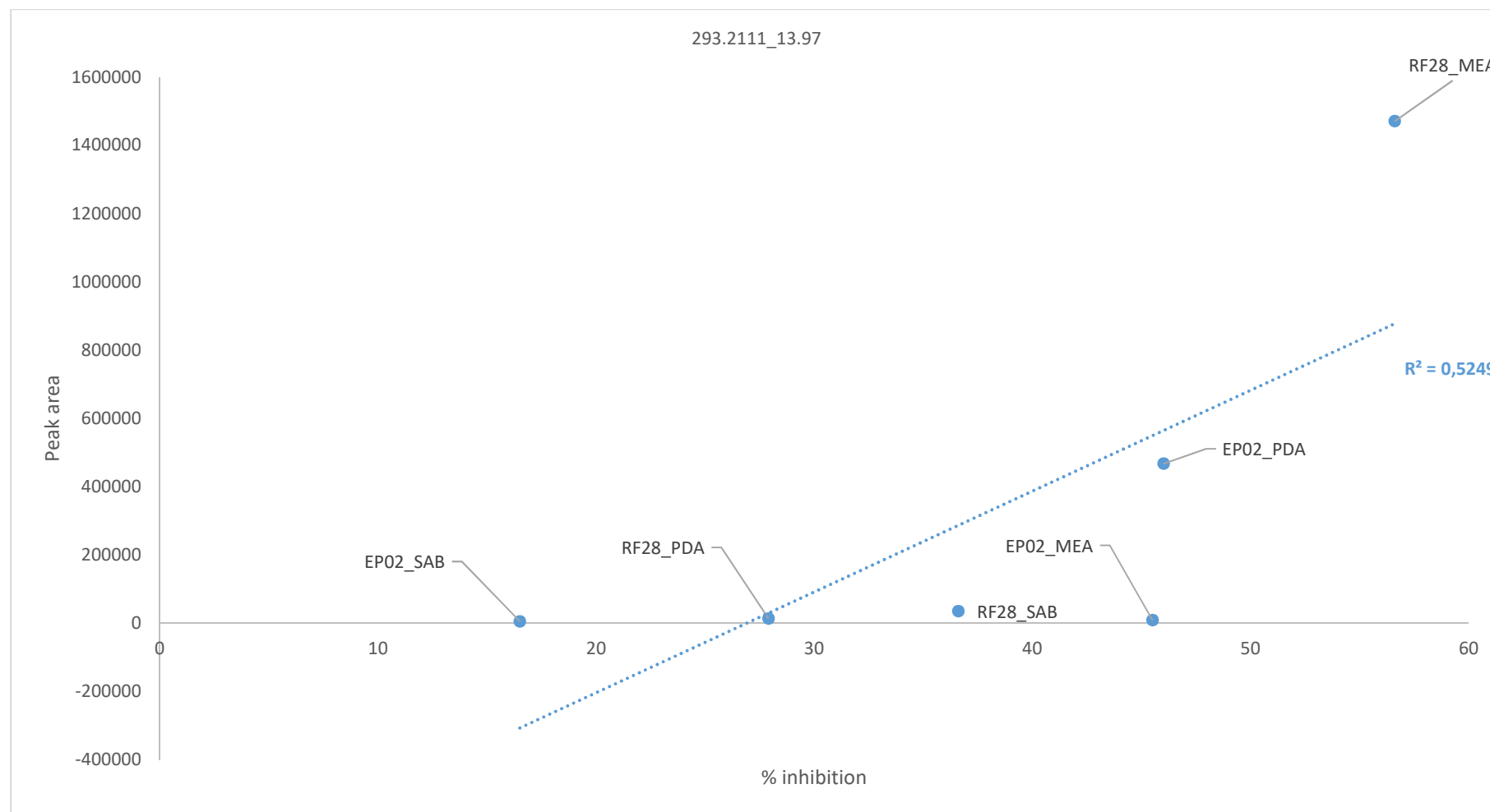
**Figure S13.** Scatter plot presenting peak areas of highlighted feature  $m/z$  311.2222 at 12.0 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



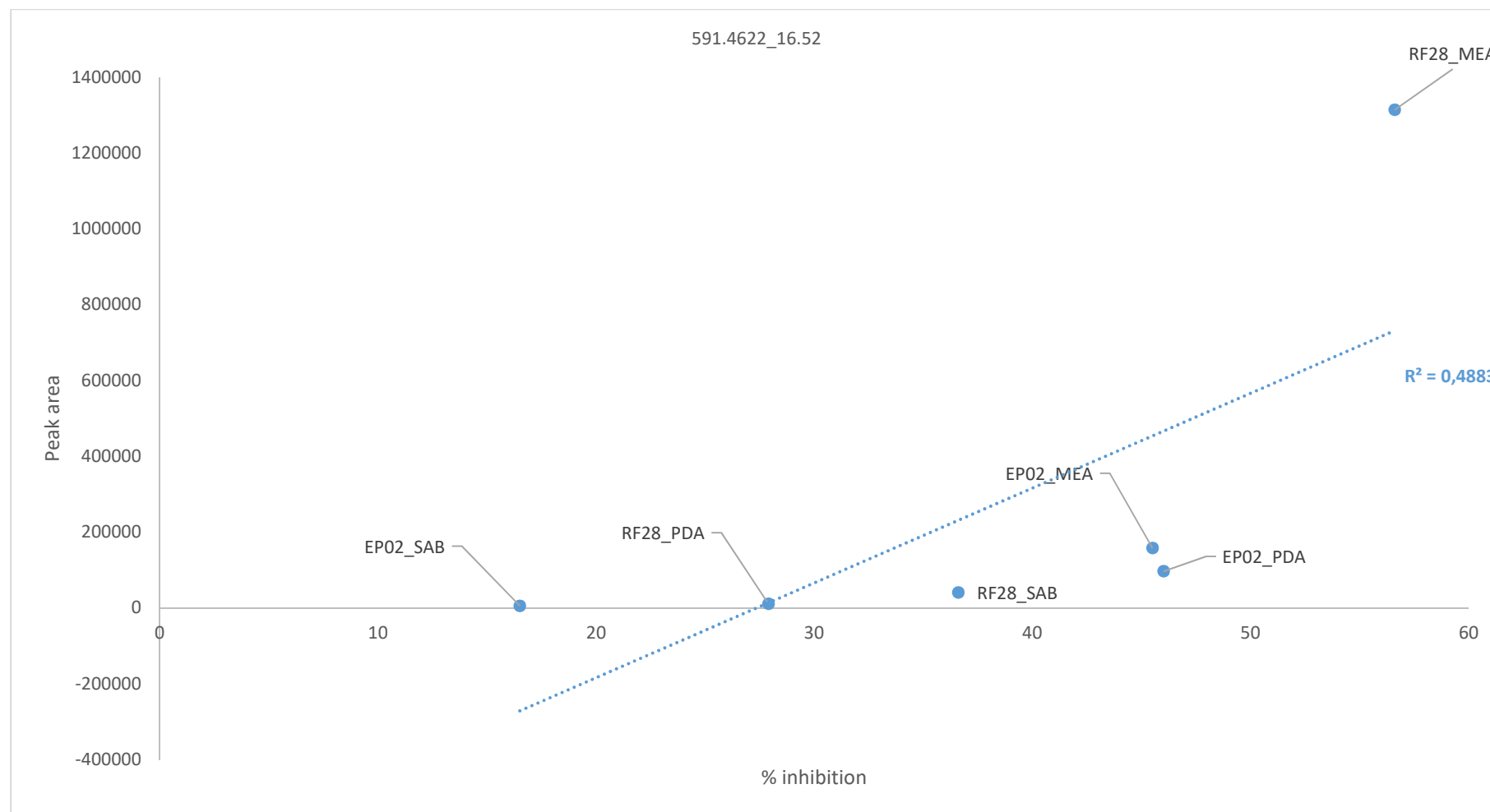
**Figure S14.** Scatter plot presenting peak areas of highlighted feature  $m/z$  295.2274 at 14.6 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



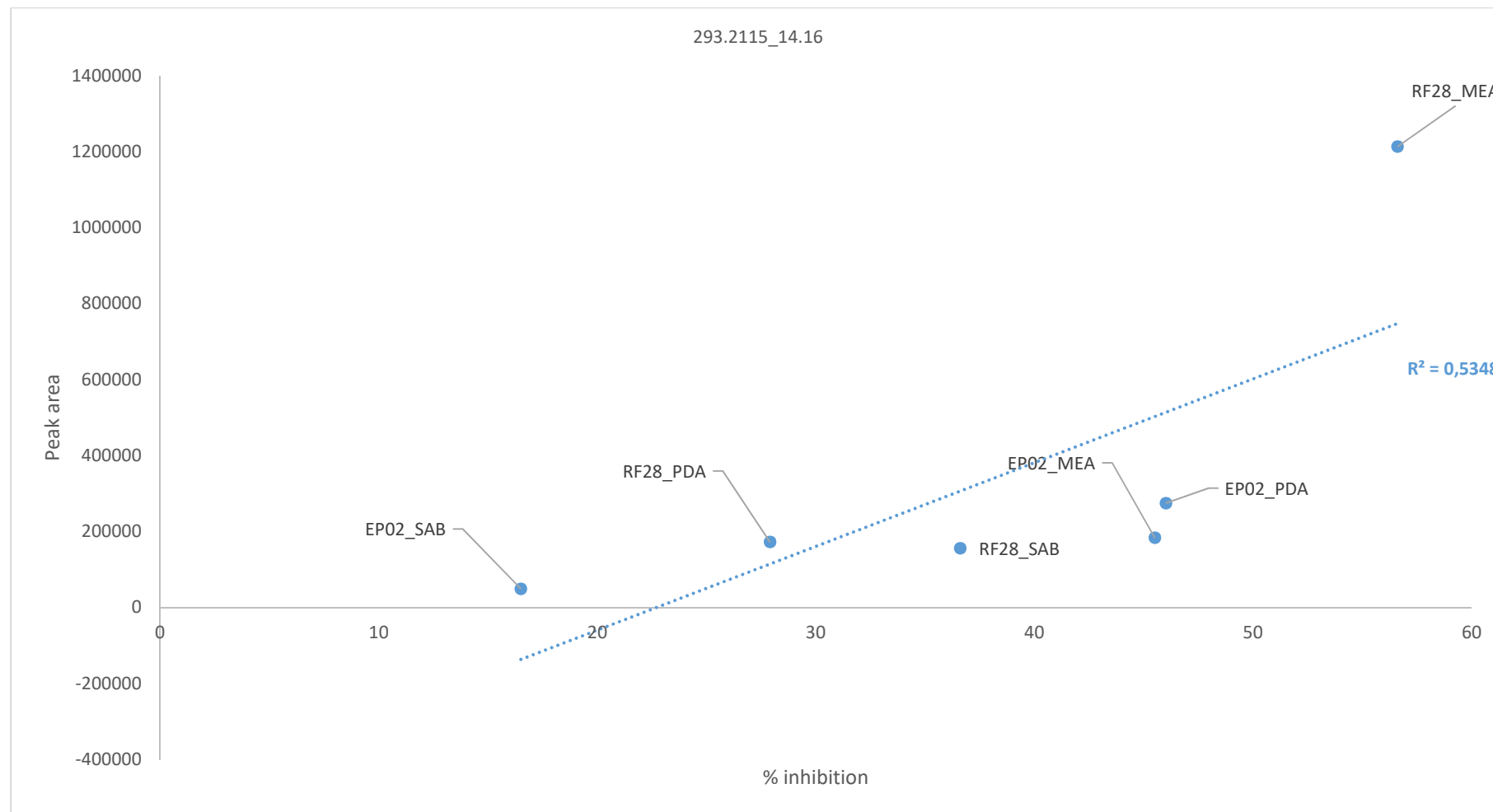
**Figure S15.** Scatter plot presenting peak areas of highlighted feature  $m/z$  2953.2111 at 14.0 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



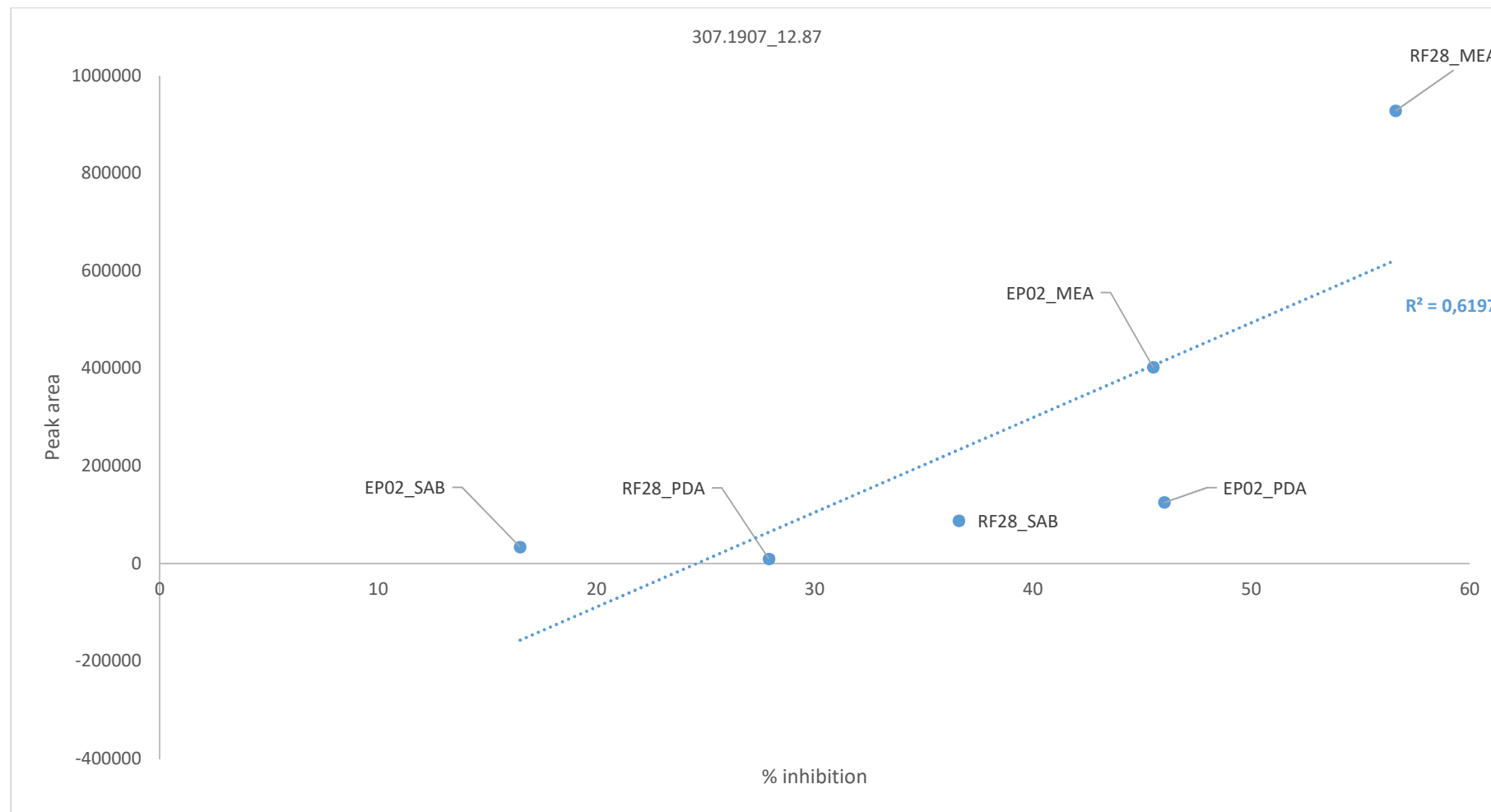
**Figure S16.** Scatter plot presenting peak areas of highlighted feature  $m/z$  591.4622 at 16.5 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



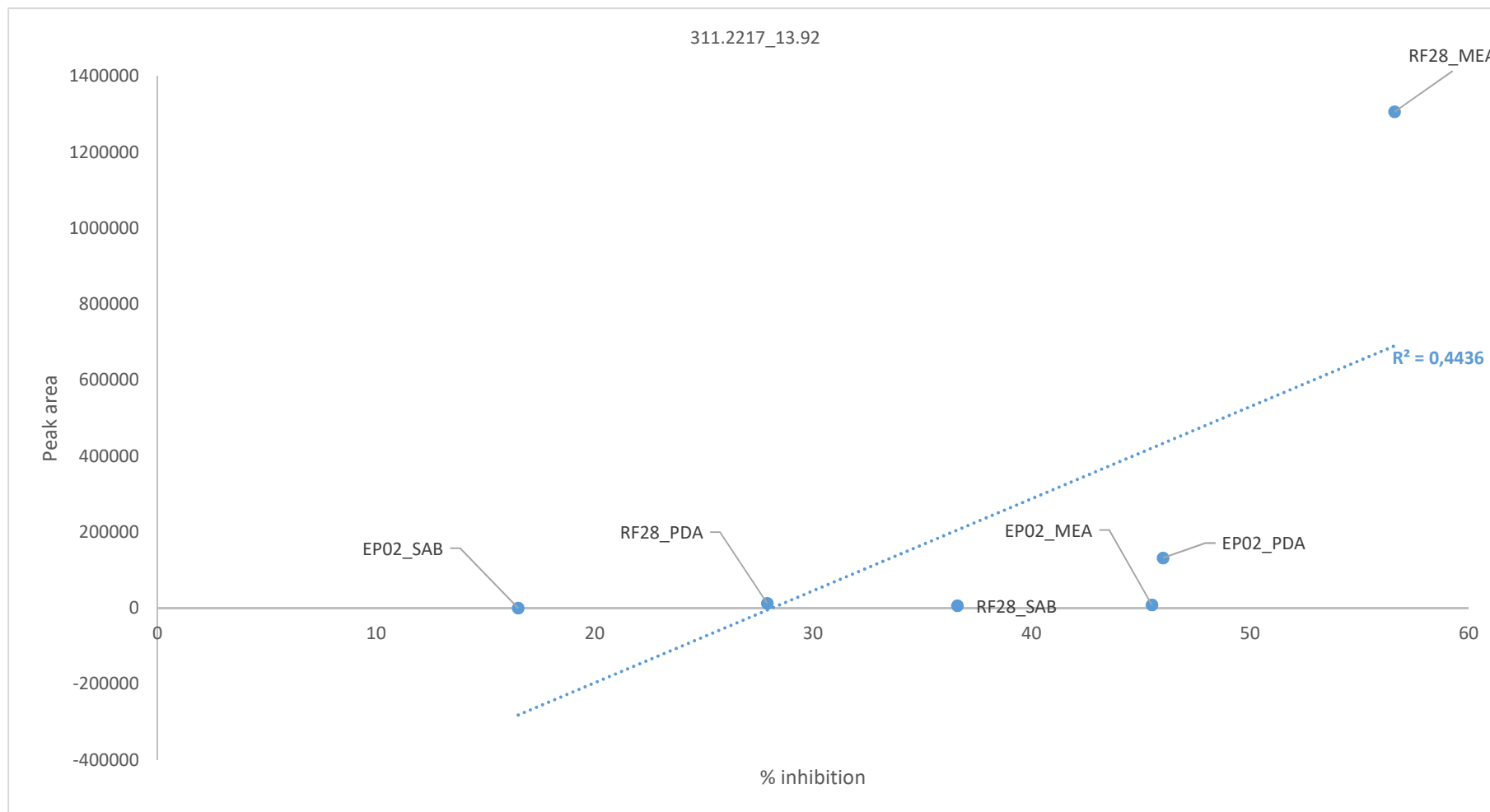
**Figure S17.** Scatter plot presenting peak areas of highlighted feature  $m/z$  298.2115 at 14.2 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



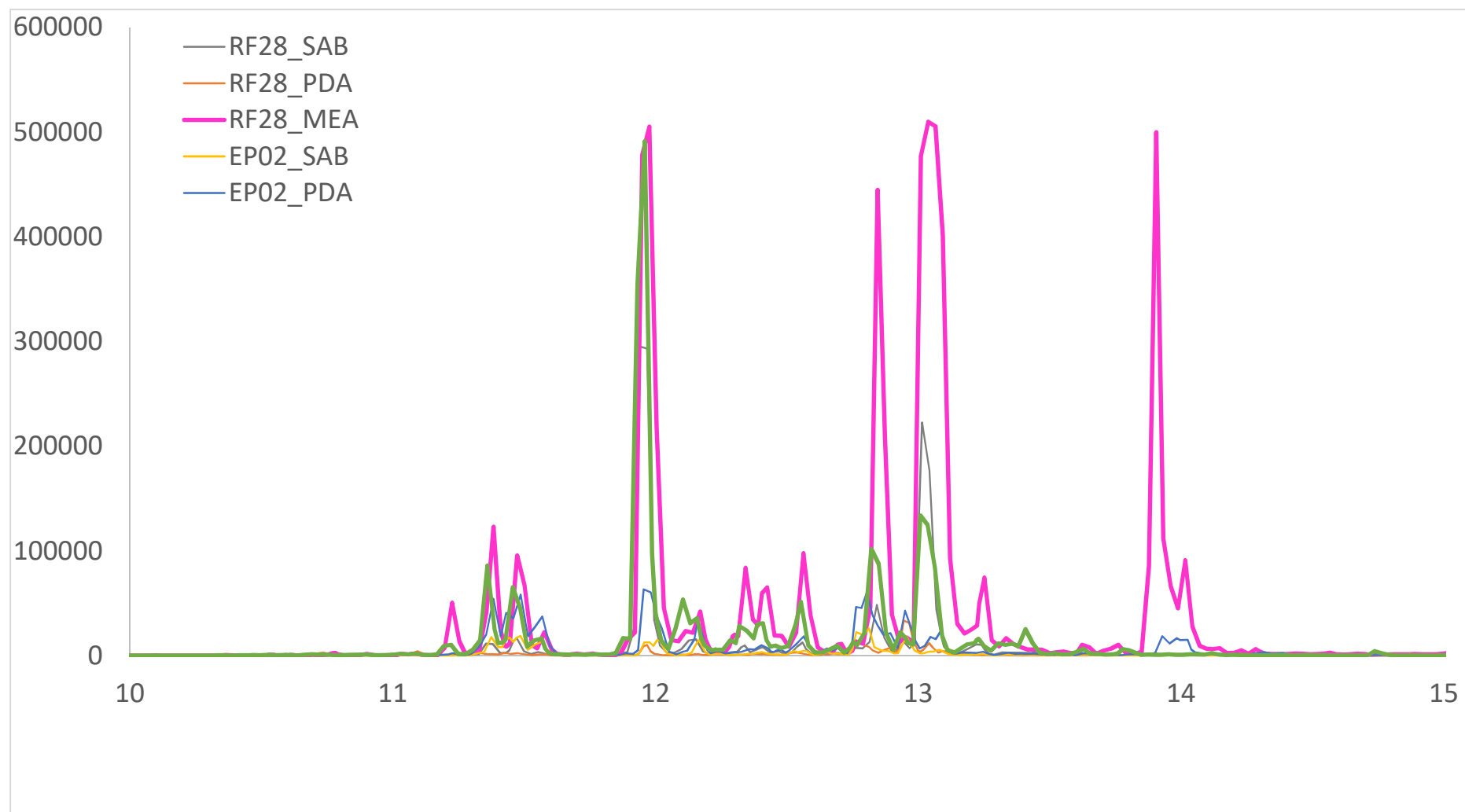
**Figure S18.** Scatter plot presenting peak areas of highlighted feature  $m/z$  307.1907 at 12.9 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.



**Figure S19.** Scatter plot presenting peak areas of highlighted feature  $m/z$  311.2217 at 13.9 min in correlation with the activity of the corresponding extracts of *Preussia* samples. Pearson correlation coefficient of the linear regression  $r^2$  is given.

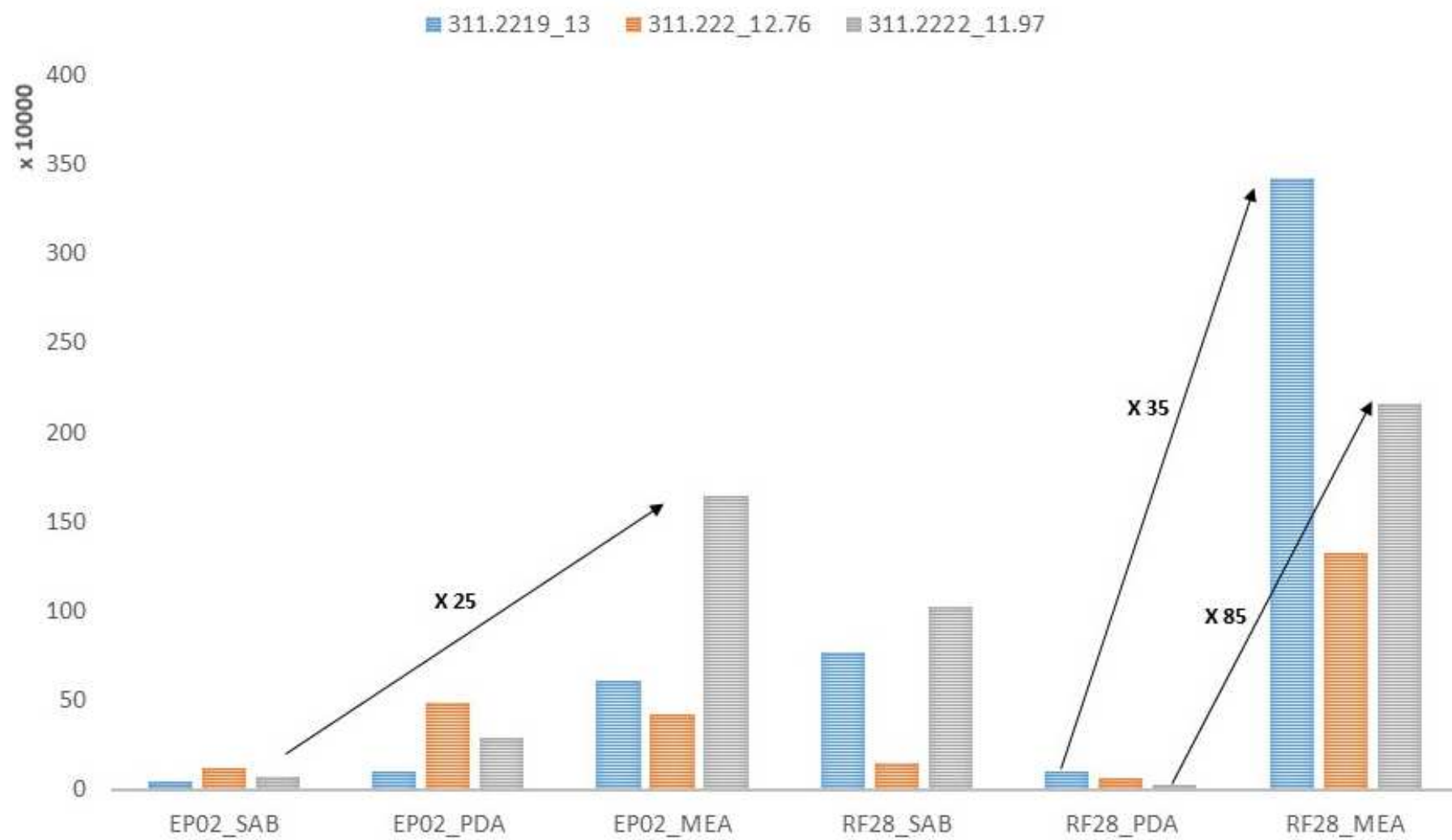


**Figure S20.** Extracted ion chromatograms for  $m/z$  311.2219 for the different extracts of *Preussia* species with cultures on MEA medium highlighted in bold.

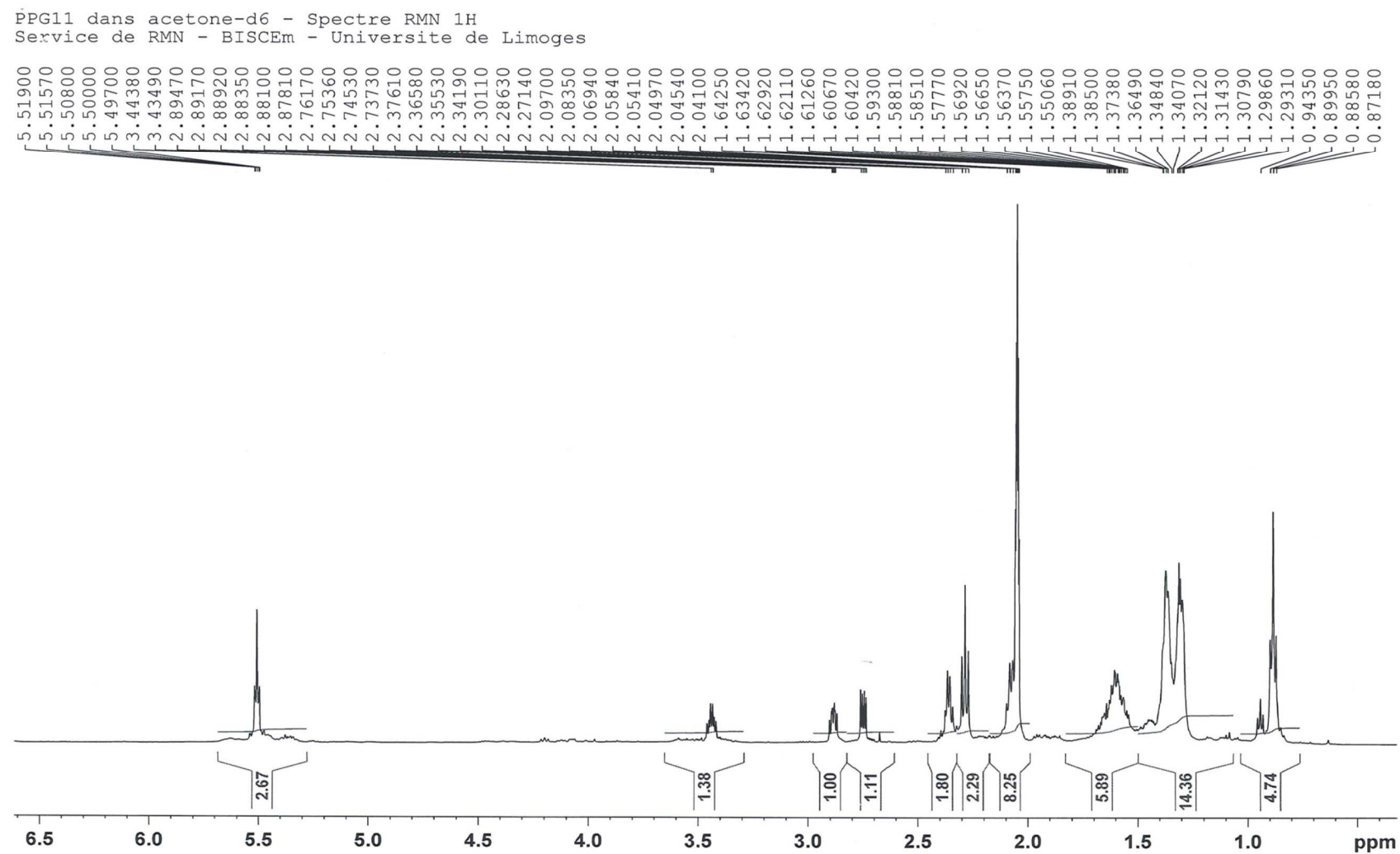




**Figure S21.** Peak area of the three major peaks for  $m/z$  311.222 in the different extracts of *Preussia* species in relation with their culture media : Sabouraud (SAB), Potato Dextrose Agar (PDA), Malt Extract Agar (MEA).

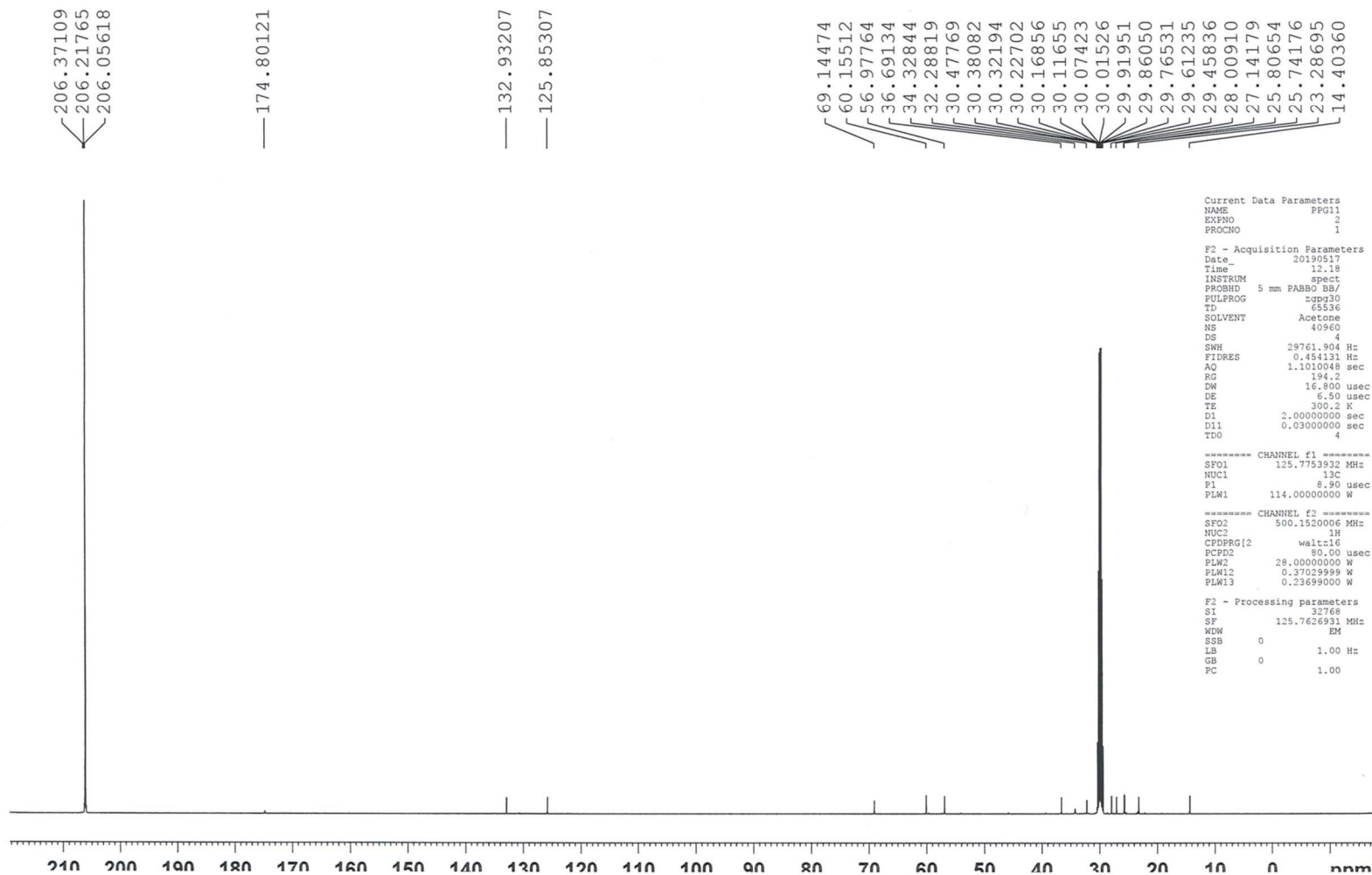


**Figure S22.**  $^1\text{H}$  NMR of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid



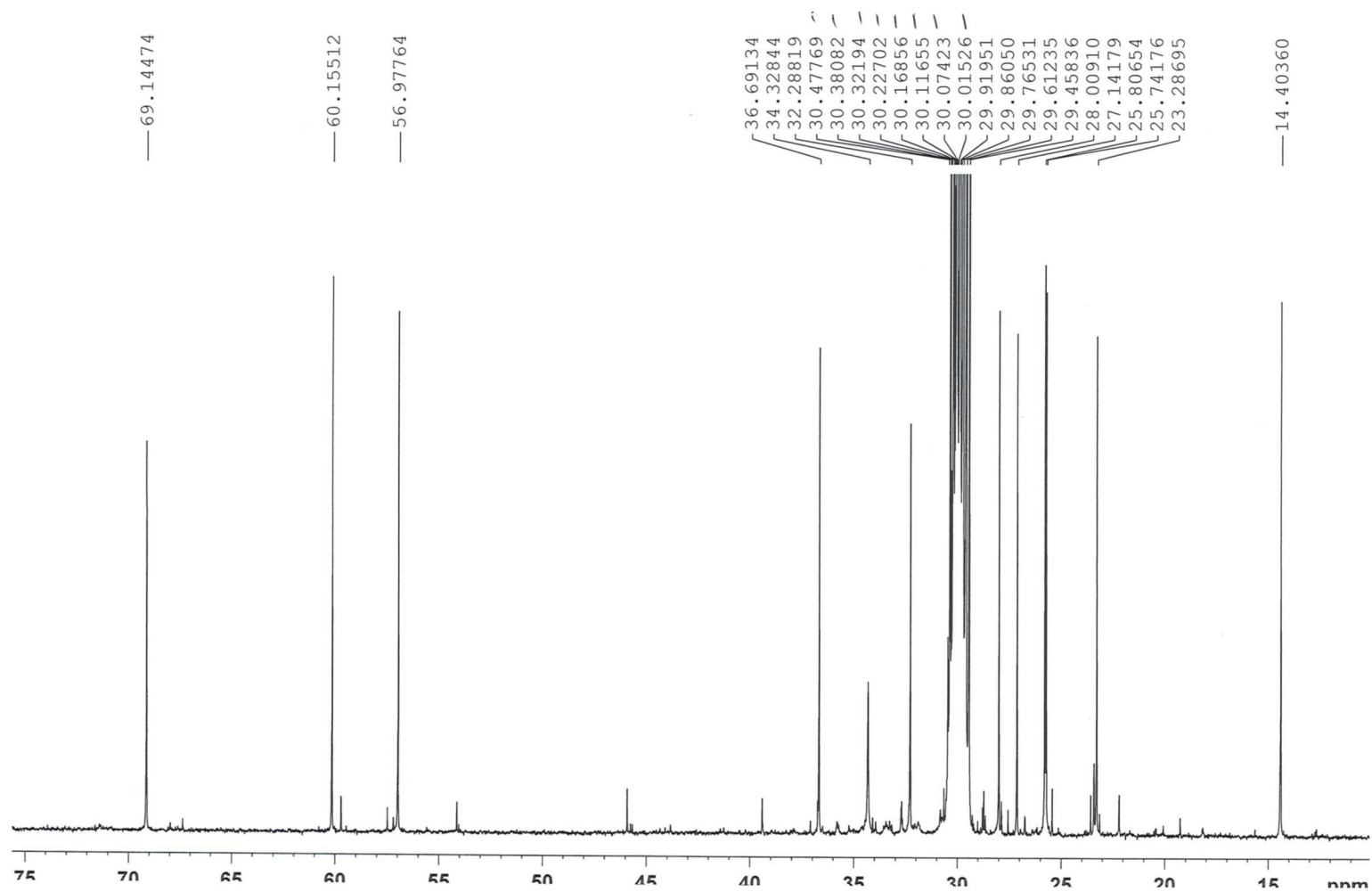
**Figure S23.**  $^{13}\text{C}$  NMR of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid

PPG11 dans acetone-d6 - Spectre RMN  $^{13}\text{C}$   
Service de RMN - BISCEM - Université de Limoges

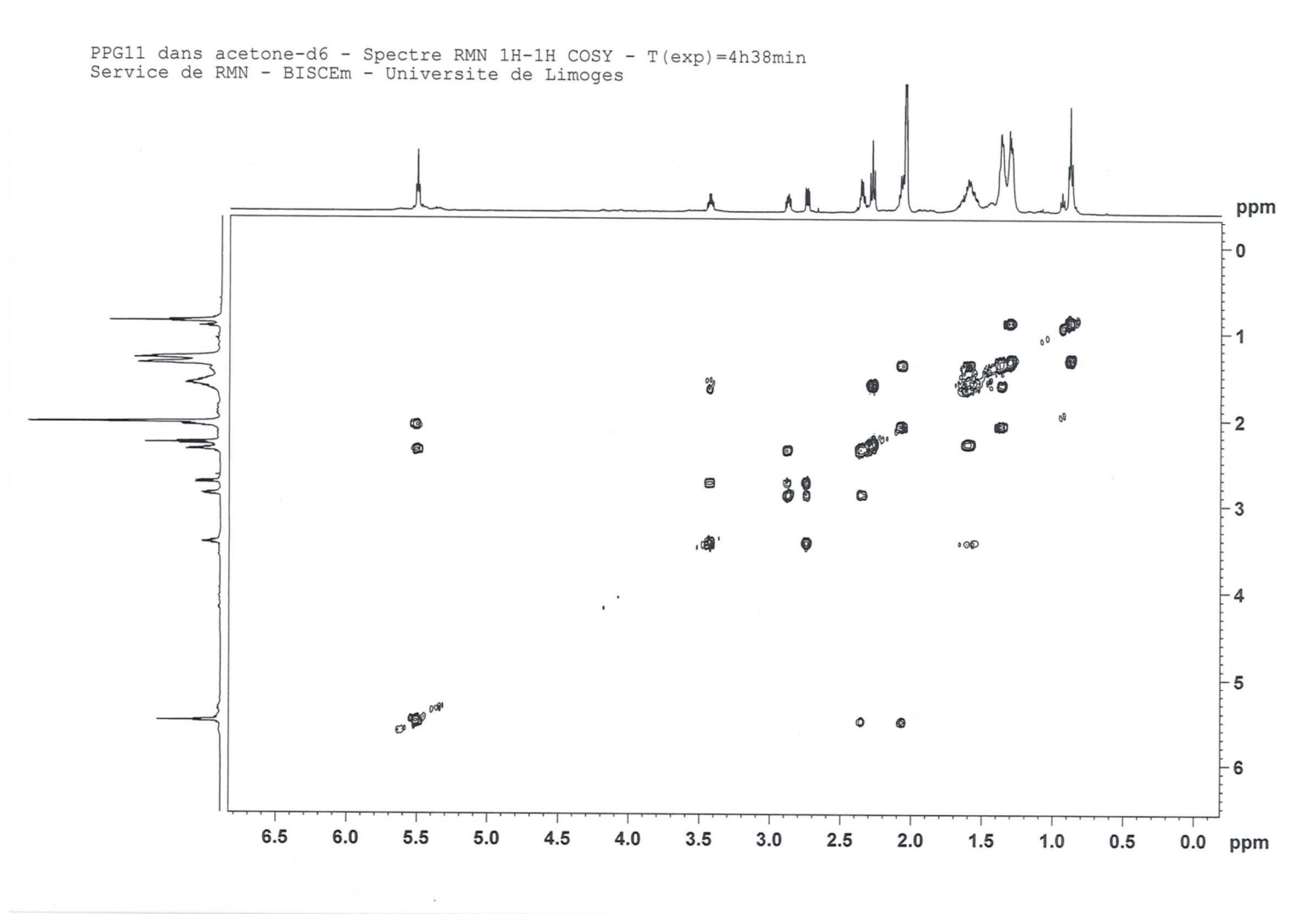


**Figure S24.**  $^{13}\text{C}$  NMR of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid

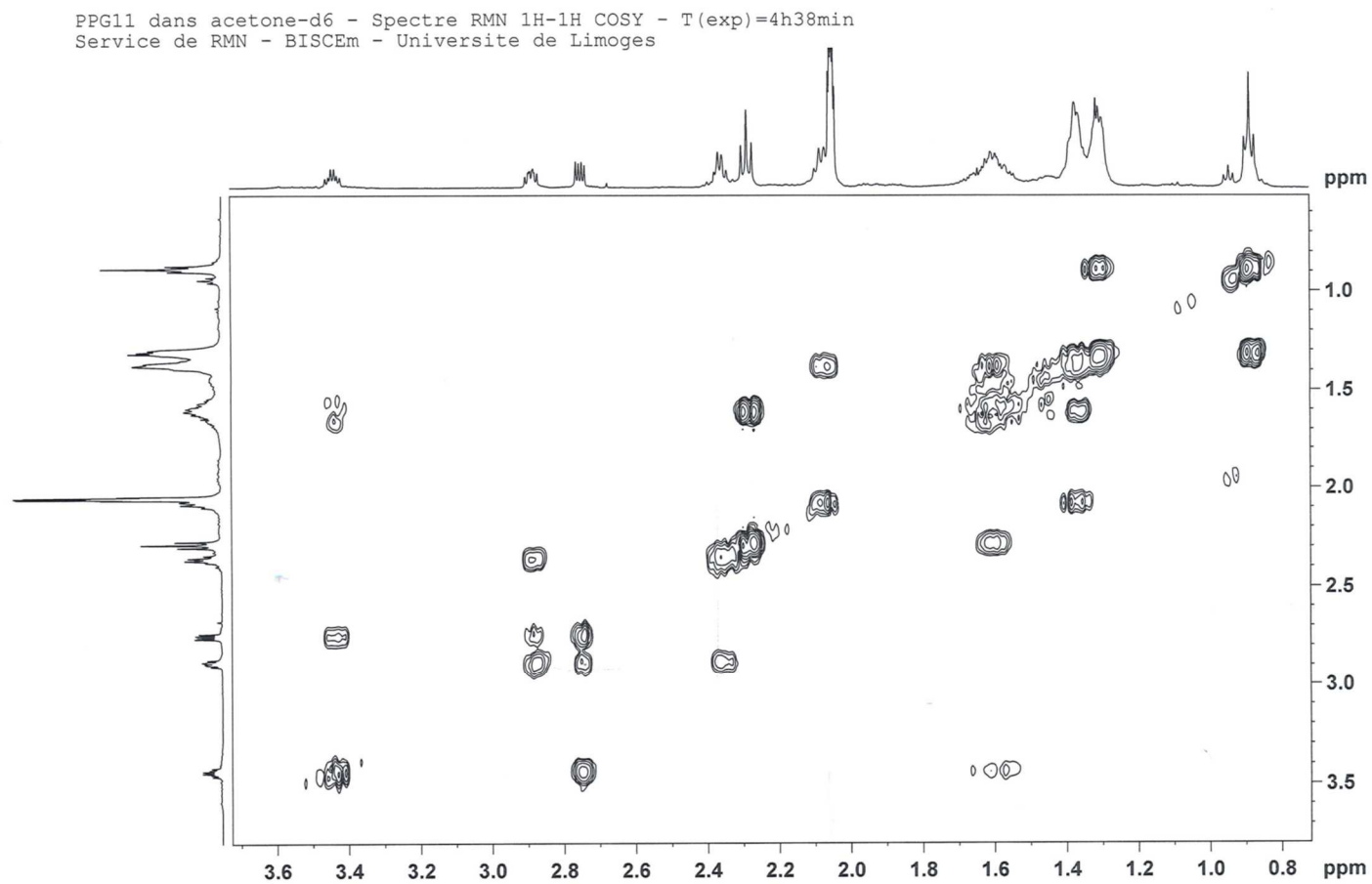
PPG11 dans acetone-d6 - Spectre RMN 13C  
Service de RMN - BISCEM - Université de Limoges



**Figure S25.** 2D NMR COSY Spectrum of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid

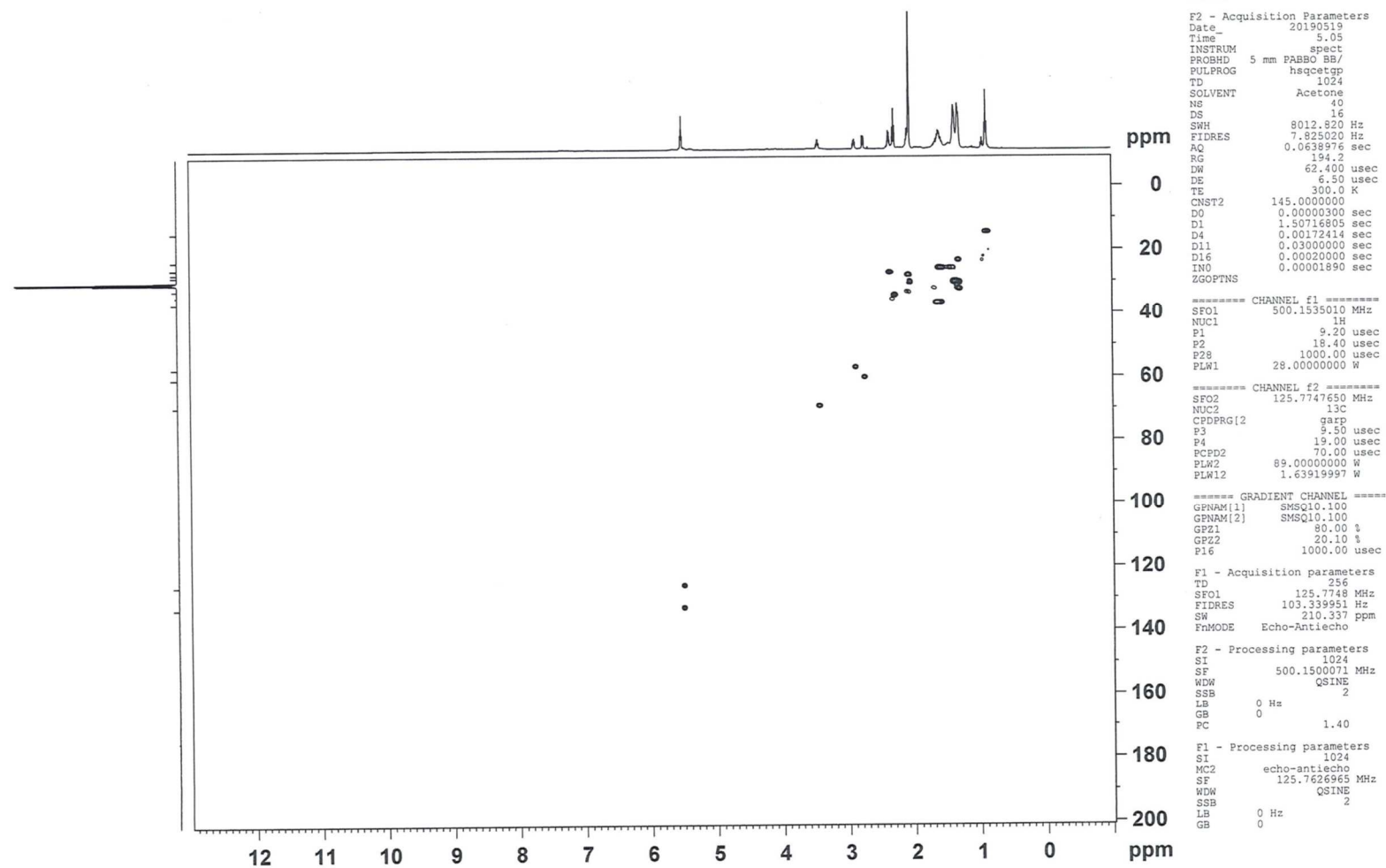


**Figure S26.** 2D NMR COSY Spectrum of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid



**Figure S27.** 2D NMR HSQC Spectrum of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid

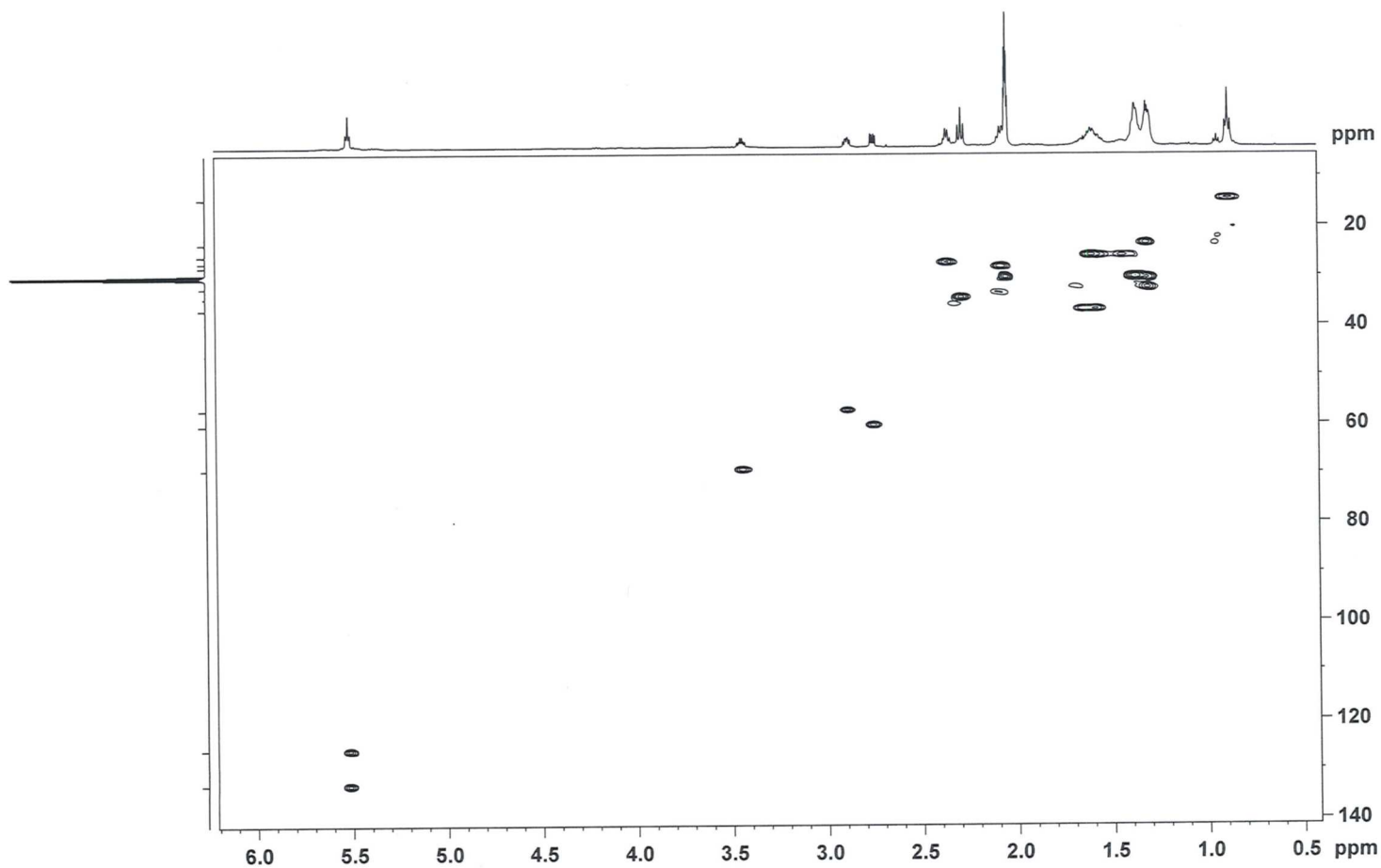
PPG11 dans acetone-d6 - Spectre RMN 1H-13C HSQC  
Service de RMN - BISCEM - Université de Limoges





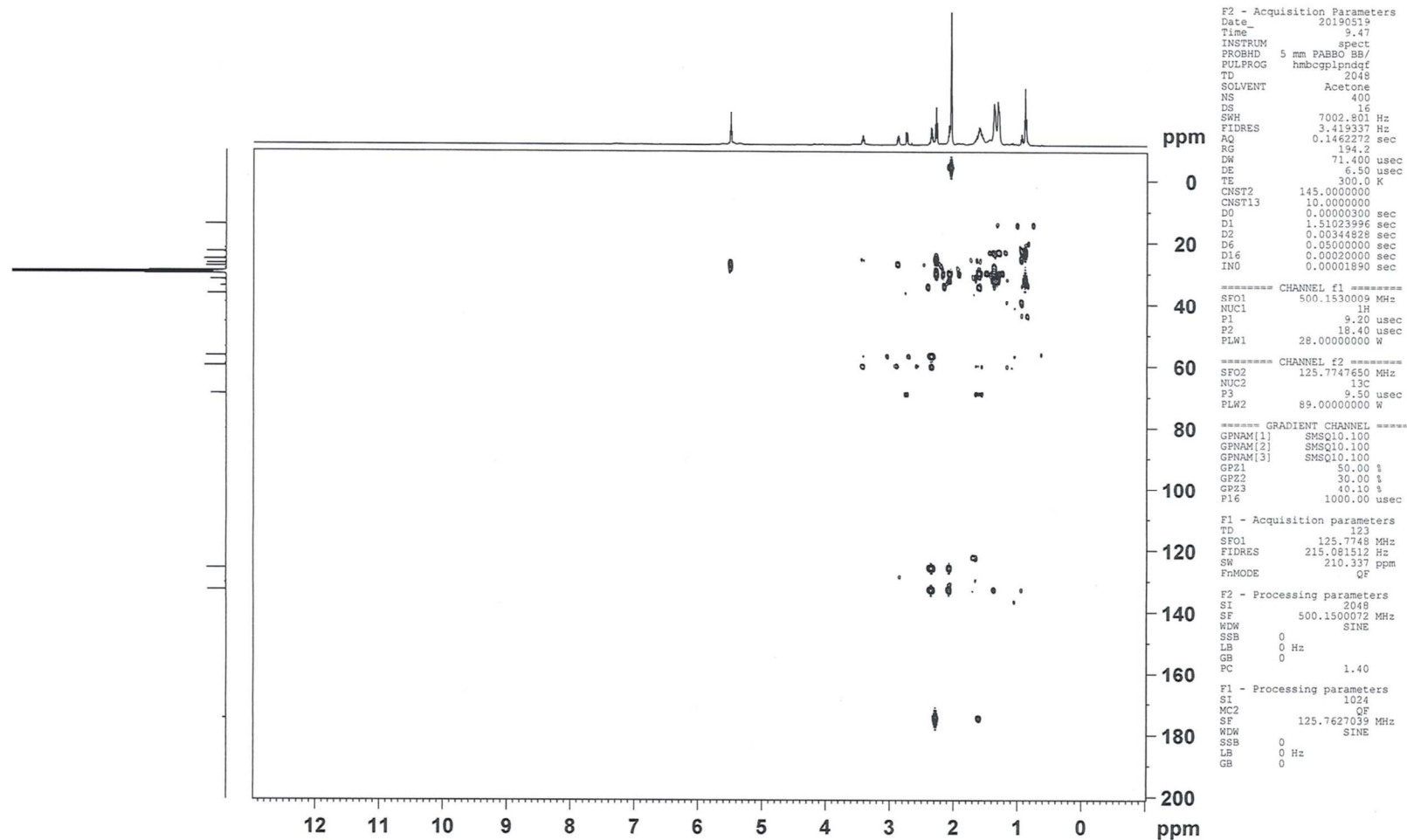
**Figure S28.** 2D NMR HSQC Spectrum of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid

PPG11 dans acetone-d6 - Spectre RMN 1H-13C HSQC  
Service de RMN - BISCEM - Universite de Limoges



**Figure S29.** 2D NMR HMBC Spectrum of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid

PPG11 dans acetone-d6 - Spectre RMN 1H-13C HMBC  
Service de RMN - BISCEm - Universite de Limoges



**Figure S30.** 2D NMR HMBC Spectrum of compound 8Z-5,6-epoxy-4-hydroxy-octadec-8-enoic acid

PPG11 dans acetone-d6 - Spectre RMN 1H-13C HMBC  
Service de RMN - BISCEM - Université de Limoges

