

## Supporting data for

### Lipophilic arginine esters: The gateway to preservatives without side effects

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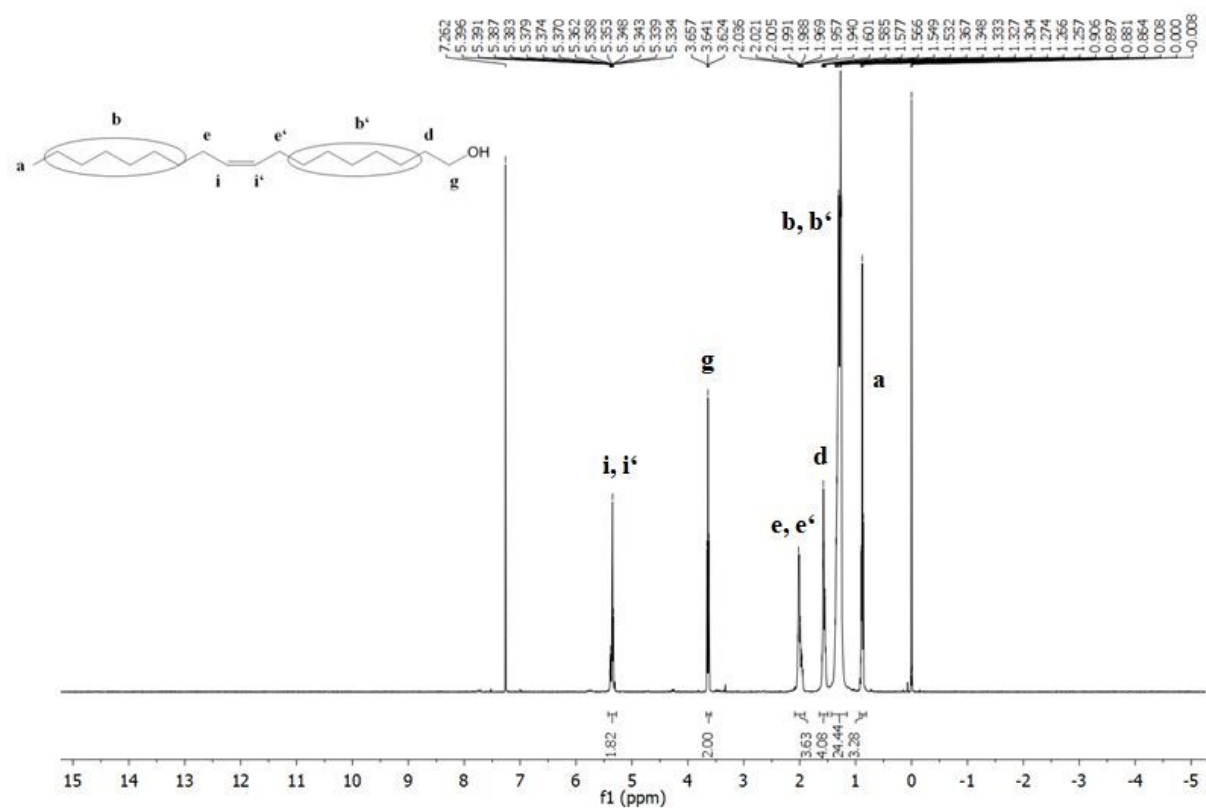
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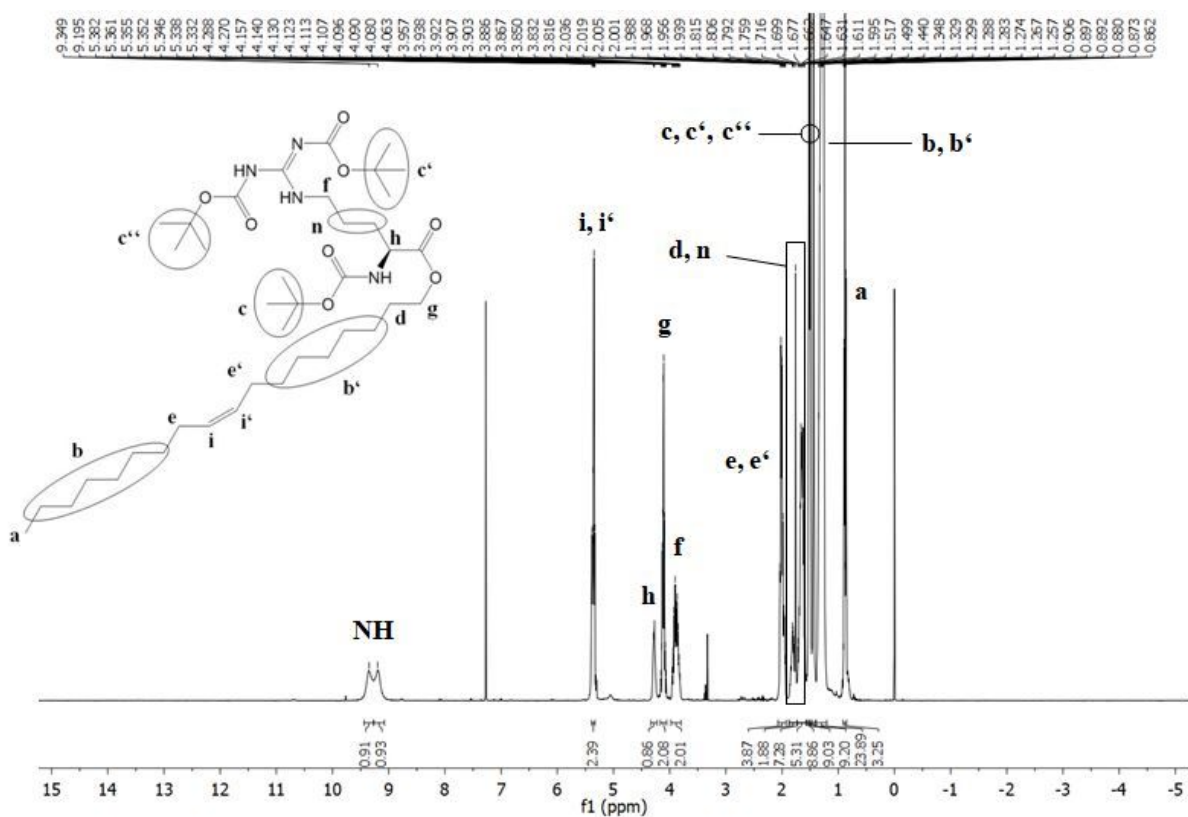
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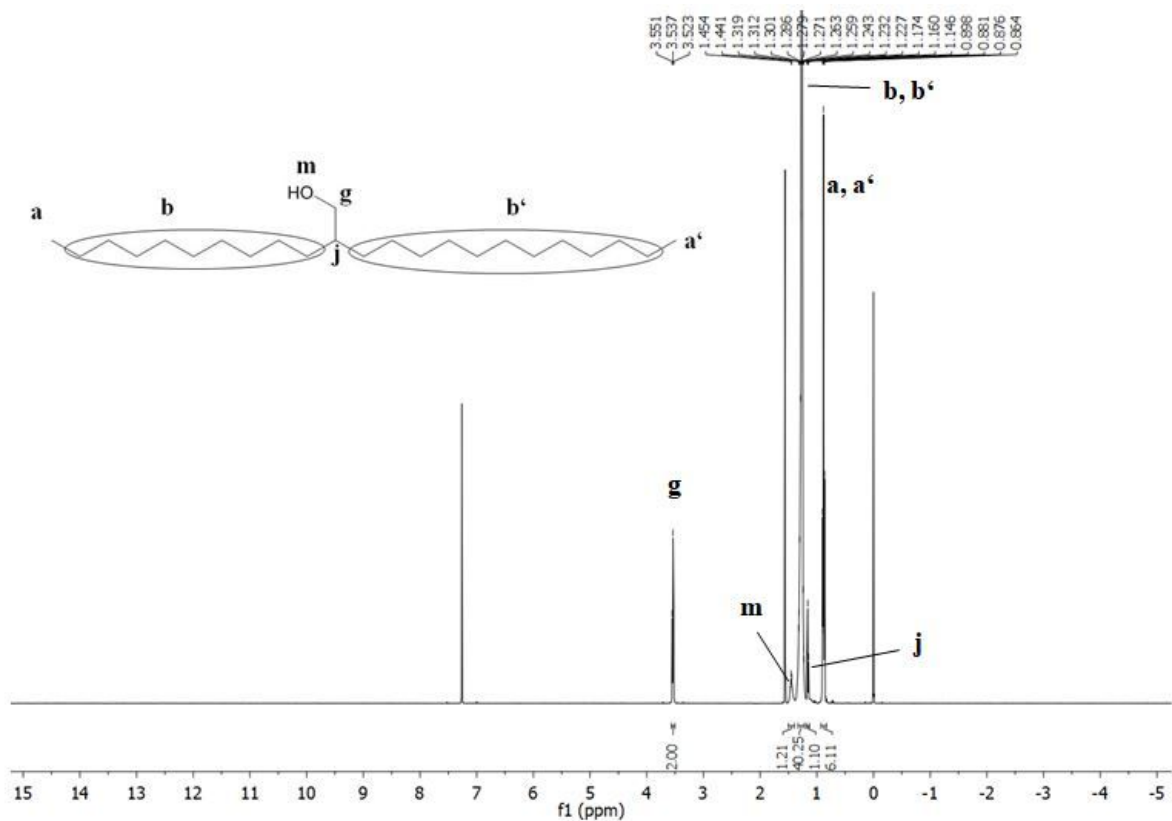
Tel: +43 512 507 58601, Fax: +43 512 507 58699



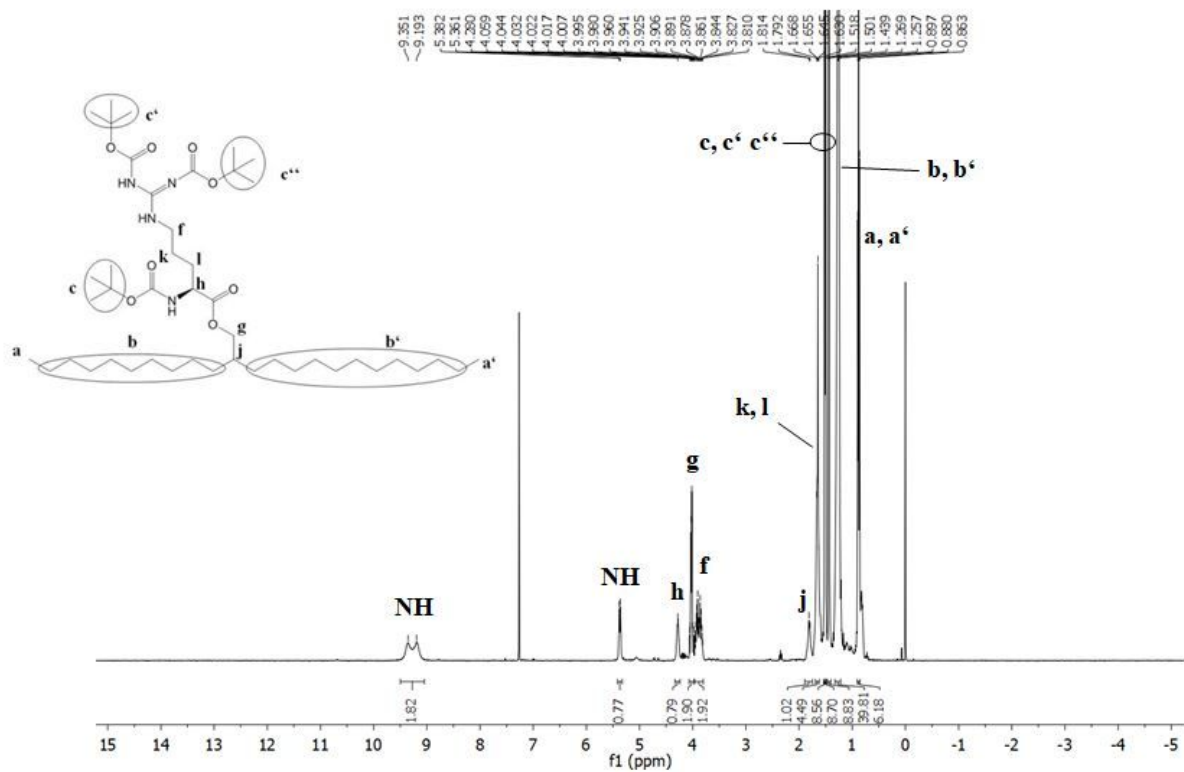
**Figure S-1:**  $^1\text{H}$ -NMR spectrum of OL (oleyl alcohol) in deuterated chloroform.



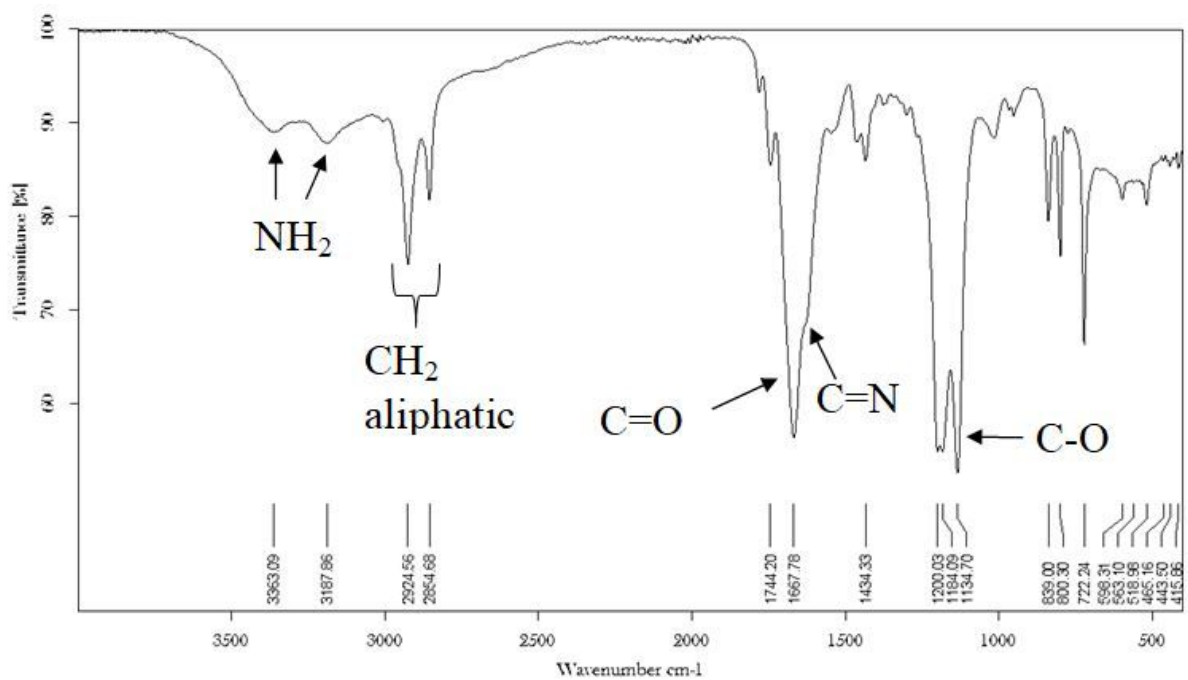
**Figure S-2:**  $^1\text{H}$ -NMR spectrum of Boc-Arg-OL (Boc-protected octadec-9-en-1-yl arginate) in deuterated chloroform.



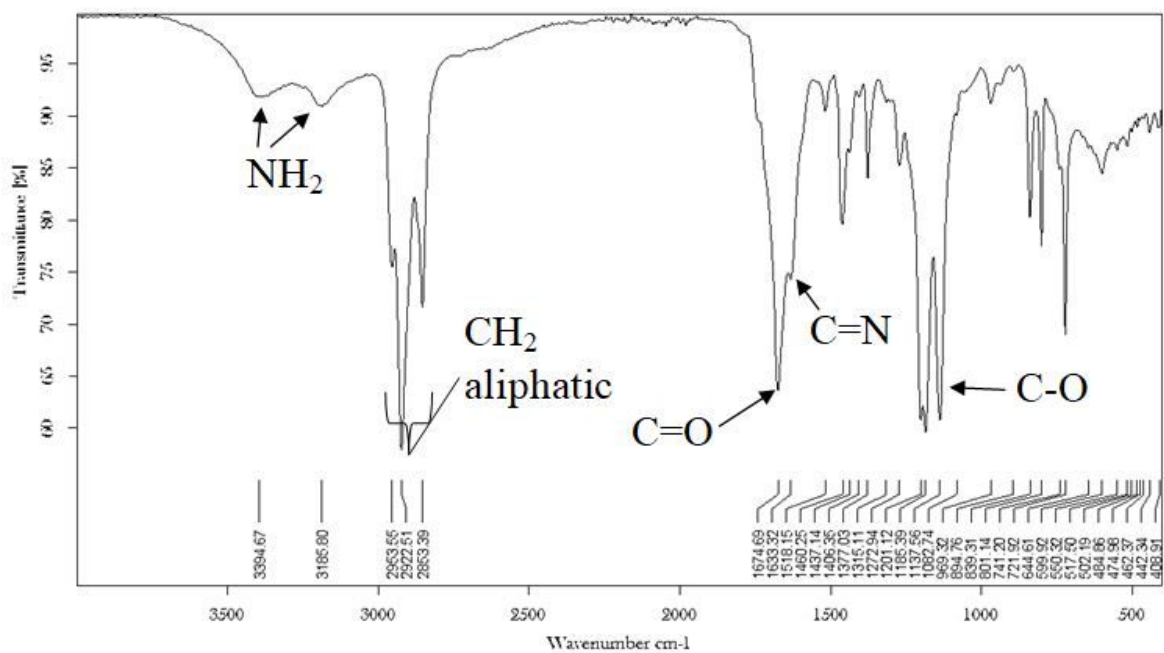
**Figure S-3:**  $^1\text{H-NMR}$  spectrum of DT (2-decyltetradecyl) in deuterated chloroform.



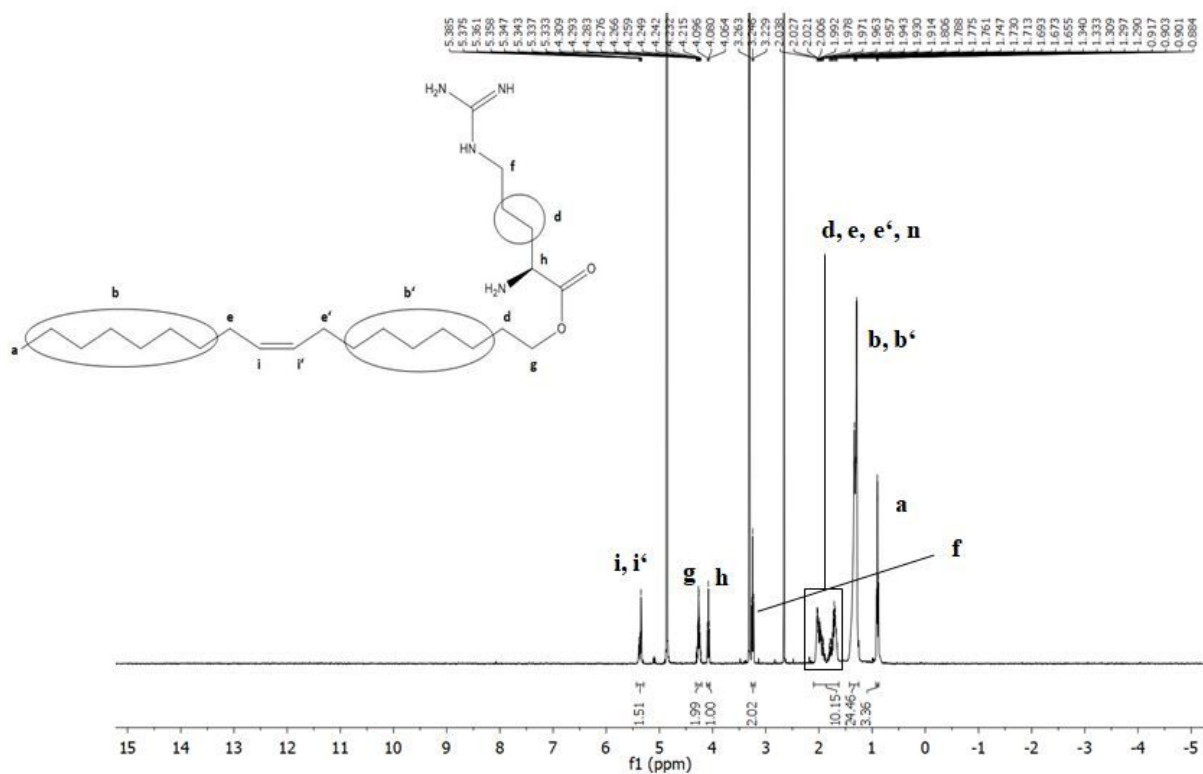
**Figure S-4:**  $^1\text{H-NMR}$  spectrum of Boc-Arg-DT (Boc-protected 2-decyltetradecyl arginine) in deuterated chloroform.



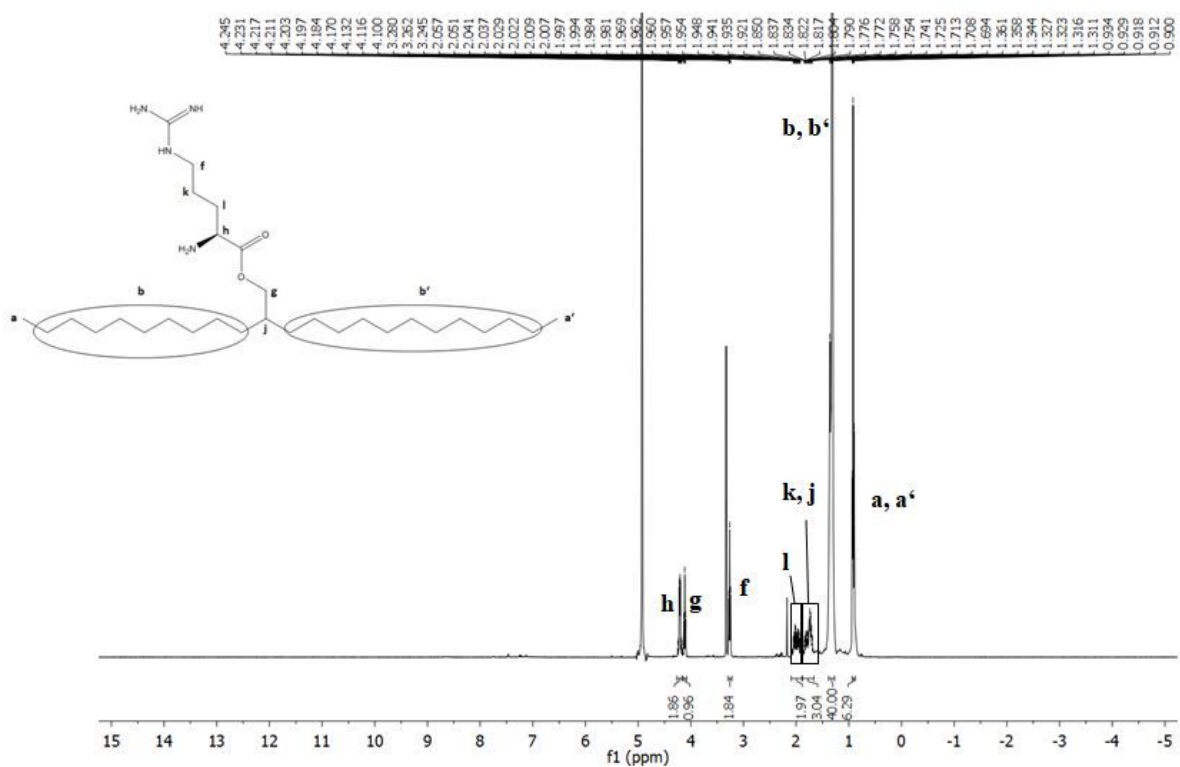
**Figure S-5:** IR spectrum of Arg-OL (octadec-9-en-1-yl arginate).



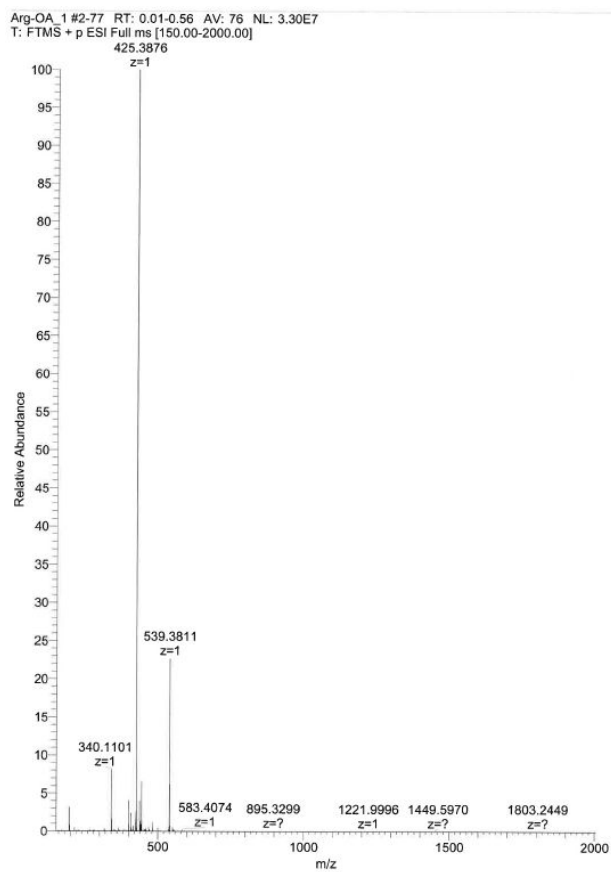
**Figure S-6:** IR-spectrum of Arg-DT (2-decyltetradecyl arginate).



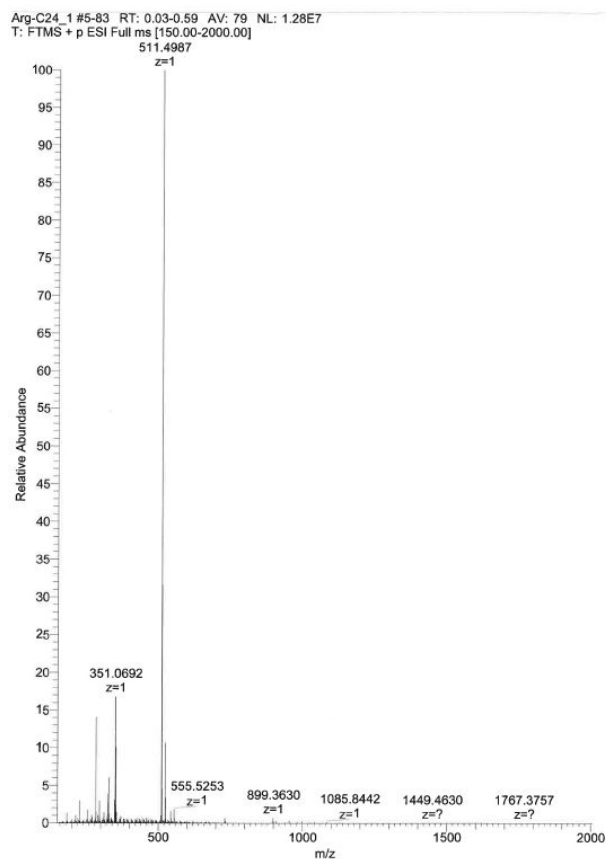
**Figure S-7:** <sup>1</sup>H-NMR spectrum of Arg-OL (octadec-9-en-1-yl arginate) in deuterated methanol.



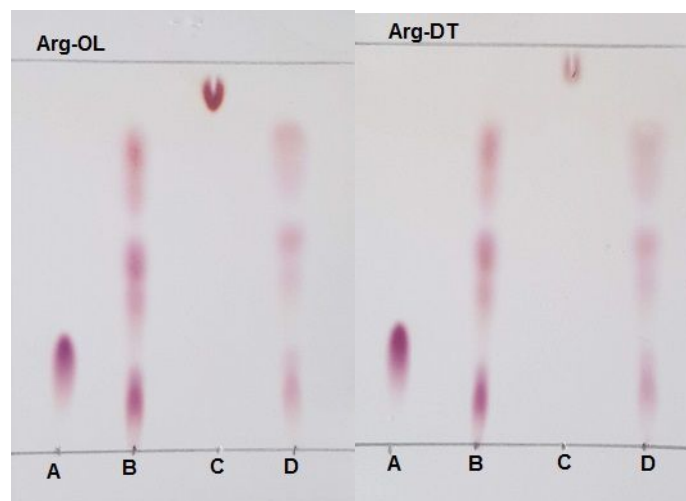
**Figure S-8:** <sup>1</sup>H-NMR spectrum of Arg-DT (2-decyltetradecyl arginate) in deuterated methanol.



**Figure S-9:** Mass spectrum of Arg-OL (octadec-9-en-1-yl arginate).





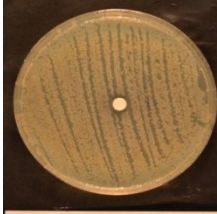

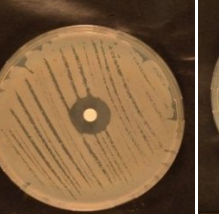




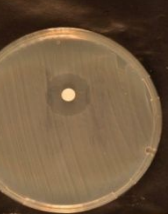
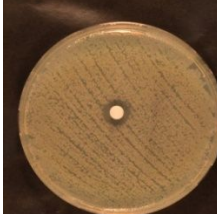



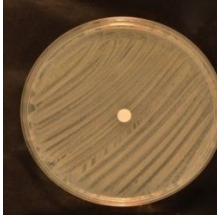

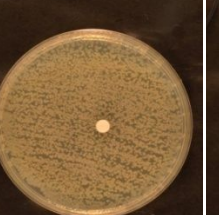



**Figure S-10:** Mass spectrum of Arg-DT (2-decyltetradecyl arginate).



**Figure S-11.** Biodegradation of Arg-esters by lipase. On each TLC: A=L-arginine, B=lipase, C= Arg-ester before lipase addition and D= Arg-ester after incubation with lipase for 3 h. As shown by TLC, there is no ester spot after 3 h and only lipase spots are visible.

**Table S-1. Zones of inhibition against indicated bacteria**

Test compound	Observed zones of inhibition			
<p><b>Arg-OL</b> (10 mg mL<sup>-1</sup>)</p>	 <p>C18ES u.o.3. <i>E. coli</i> Ø 9mm</p>	 <p>C18ES u.o.3. <i>S. aureus</i> Ø 19mm</p>	 <p>C18ES u.o.3. <i>B. subtilis</i> Ø 16mm</p>	 <p>C18ES u.o.3. <i>E. faecalis</i> Ø 18mm</p>
<p><b>Arg-DT</b> (10 mg mL<sup>-1</sup>)</p>	 <p>C24ES u.o.3. <i>E. coli</i> Ø 9mm</p>	 <p>C24ES u.o.3. <i>S. aureus</i> Ø 16mm</p>	 <p>C24ES u.o.3. <i>B. subtilis</i> Ø 18mm</p>	 <p>C24ES u.o.3. <i>E. faecalis</i> Ø 16mm</p>
<p><b>BAC</b> (10 mg mL<sup>-1</sup>)</p>	 <p>BAC Sample ③ u.o.3. <i>E. coli</i> Ø 19mm</p>	 <p>BAC Sample ③ u.o.3. <i>S. aureus</i> Ø 21mm</p>	 <p>BAC Sample ③ u.o.3. <i>B. subtilis</i> Ø 22-23mm</p>	 <p>BAC Sample ③ u.o.3. <i>E. faecalis</i> Ø 20mm</p>
<p><b>Cetrimide</b> (10 mg mL<sup>-1</sup>)</p>	 <p>Cetrimide Sample ④ u.o.3. <i>E. coli</i> Ø 12mm</p>	 <p>Cetrimide Sample ④ u.o.3. <i>S. aureus</i> Ø 19mm</p>	 <p>Cetrimide Sample ④ u.o.3. <i>B. subtilis</i> Ø 19mm</p>	 <p>Cetrimide Sample ④ u.o.3. <i>E. faecalis</i> Ø 19mm</p>
<p><b>Negative control</b> (water with 10% v/v DMSO)</p>	 <p>⊖ u.o.3. <i>S. aureus</i> Ø -</p>	 <p>⊖ u.o.3. <i>E. faecalis</i> Ø -</p>	 <p>⊖ u.o.3. <i>E. coli</i> Ø -</p>	 <p>⊖ u.o.3. <i>B. subtilis</i> Ø -</p>