Figure S1. MALDI MS² spectrum of the bis-phosphorylated tetra-acylated lipid A species at m/z 1301.8 from *S. salinus* M19-40⁷ R-LPS. Fragments assignment is reported. The proposed structure for the tetra-acylated lipid A species is reported in the inset.
Figure S2. Section of the positive-ion MALDI mass spectrum of the lipid A from *S. salinus* M19-40^T^ R-LPS showing most of the lipid A species present with Na\(^+\) counterions.


**Figure S3.** Negative-ion MALDI mass spectrum of the lipid A from *S. salinus* M19-40^T^ R-LPS obtained from 10 % ammonium hydroxide hydrolysis. The proposed structures of the product are reported in the figure.