

Table S1. Structures of the cyclic compounds of PA 12.

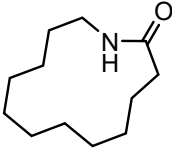
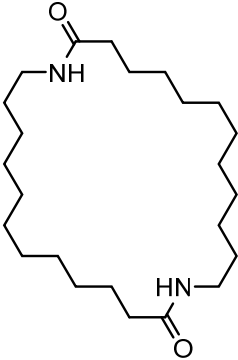
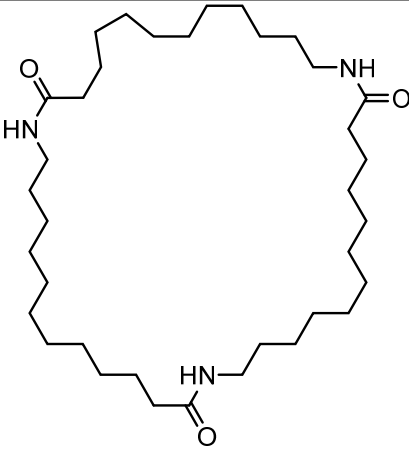
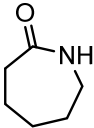
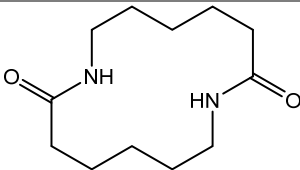
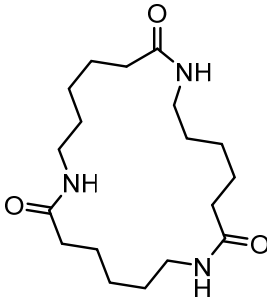
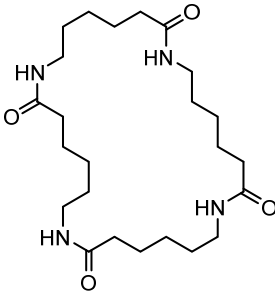
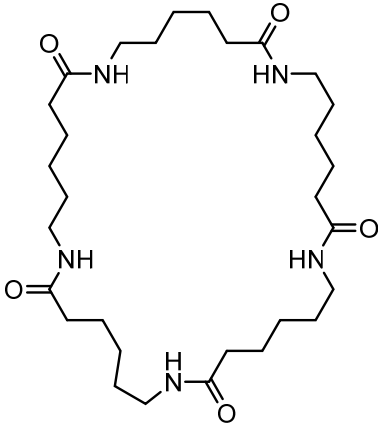
Name	Chemical formula	theoretical m/z	chemical structure
lauro lactam, Azacyclotridecane-2-one	$C_{12}H_{23}NO$	198.1858	
1,14-diazacyclohexacosane- 2,15-dione	$C_{24}H_{46}N_2O_2$	395.3638	
1,14,27- triazacyclononatriacontane- 2,15,28-trione	$C_{36}H_{69}N_3O_3$	592.5417	

Table S2. Structures of the cyclic compounds of PA 6.

Name	Chemical formula	theoretical m/z	chemical structure
ϵ -caprolactam, Azepan-2-one	C ₆ H ₁₁ NO	114.0919	
caprolactam cyclic dimer, 1,8-Diazacyclotetradecane-2,9-dione	C ₁₂ H ₂₂ N ₂ O ₂	227.1760	
caprolactam cyclic trimer, 1,8,15-Triazacycloheneicosane-2,9,16-trione	C ₁₈ H ₃₃ N ₃ O ₃	340.2600	
caprolactam cyclic tetramer, 1,8,15,22-Tetraazacyclooctacosane-2,9,16,23-tetrone	C ₂₄ H ₄₄ N ₄ O ₄	453.3441	
caprolactam cyclic pentamer, 1,8,15,22,29-Pentaazacyclopentatriacontane-2,9,16,23,30-pentone	C ₃₀ H ₅₅ N ₅ O ₅	566.3890	

caprolactam cyclic
hexamer,
1,8,15,22,29,36-
Hexaazacyclodotetracont
ane-2,9,16,23,30,37-hexone

$C_{36}H_{66}N_6O_6$ 679.4339

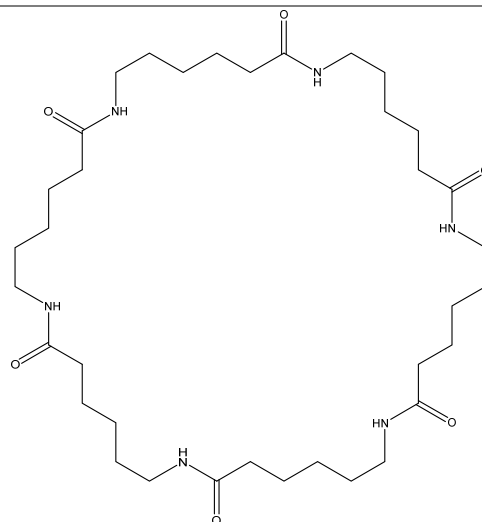
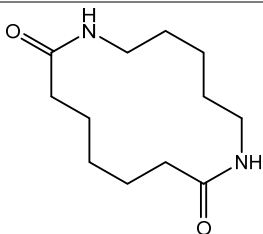
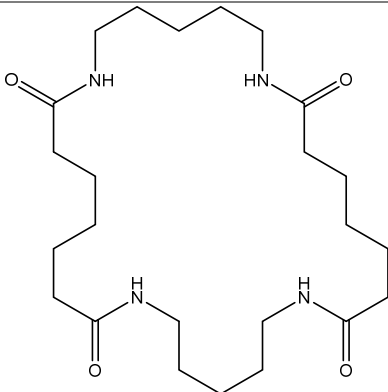


Table S3. Structures of the cyclic compounds of PA 6.6.

Name	Chemical formula	theoretical m/z	chemical structure
1,7-Diazacyclotetradecane-8,14-dione	$C_{12}H_{22}N_2O_2$	227.1760	
1,7,15,21-Tetraazacyclooctacosane-8,14,22,28-tetrone	$C_{24}H_{44}N_4O_4$	453.3441	
1,7,15,21,29,35-Hexaazacyclodotetracontane-8,14,22,28,36,42-hexone	$C_{36}H_{66}N_6O_6$	679.4339	