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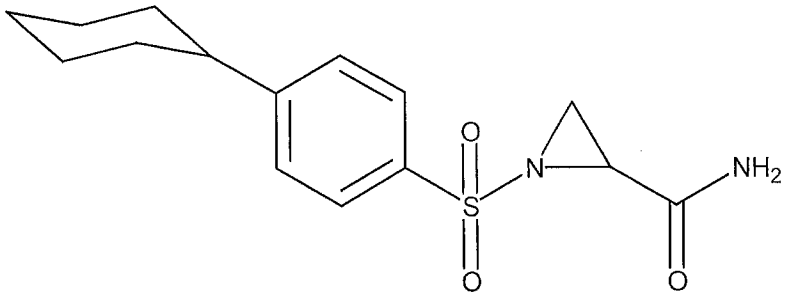
Certificate of Analysis

C-3741



1-((4-Cyclohexylphenyl)sulfonyl)aziridine-2-carboxamide

Molecular formula: $C_{15}H_{20}N_2O_3S$

Molecular weight: 308.40

Melting point: 70-72°C

^{1}H-NMR spectrum (400 MHz):
($CDCl_3$, HMDSO) δ: 7.84 (d, *J*=8.5 Hz, 2H), 7.40 (d, *J*=8.5 Hz, 2H), 6.17 (s, 1H), 5.84 (s, 1H), 3.25 (dd, *J*=7.7, 4.2 Hz, 1H), 2.78 (d, *J*=7.7 Hz, 1H), 2.55-2.65 (m, 1H), 2.43 (d, *J*=4.2 Hz, 1H), 1.81-1.94 (m, 4H), 1.72-1.81 (m, 1H), 1.33-1.49 (m, 4H), 1.20-1.33 (m, 1H)

^{13}C-NMR spectrum (100 MHz):
($CDCl_3$, HMDSO) δ: 168.6, 155.4, 133.5, 128.3, 128.0, 44.7, 37.6, 34.0, 33.2, 26.6, 25.9

LCMS ESI$^+$ (m/z): 309.3 $[M+H]^+$, **LCMS** purity 94.89%

Quantity: 0.018 g

Date: 16.07.2020

Prepared by: Dr.chem. V.Andrianovs

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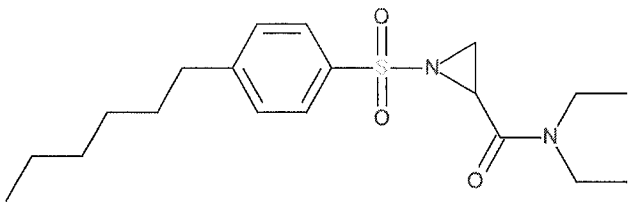
C-3546



N,N-Diethyl-1-(4-hexylphenyl)sulfonyl-aziridine-2-carboxamide

Molecular formula: $C_{19}H_{30}N_2O_3S$

Molecular weight: 366.52

Melting point: oil

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$, HMDSO) δ: 7.86 (d, *J*=8.4 Hz, 2H), 7.34 (d, *J*=8.4 Hz, 2H), 3.56 (dq, *J*=15.0, 7.2 Hz, 1H), 3.54 (dd, *J*=6.8, 4.2 Hz, 1H), 3.49 (dq, *J*=15.0, 7.2 Hz, 1H), 3.32-3.44 (m, 2H), 2.69 (d, *J*=4.2 Hz, 1H), 2.69 (t, *J*=7.9 Hz, 2H), 2.65 (d, *J*=6.9 Hz, 1H), 1.56-1.67 (m, 2H), 1.26-1.38 (m, 6H), 1.26 (t, *J*=7.2 Hz, 3H), 1.13 (t, *J*=7.2 Hz, 3H), 0.89 (t, *J*=7.0 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

($CDCl_3$, HMDSO) δ: 164.3, 150.0, 134.5, 129.2, 128.2, 42.1, 41.1, 36.0, 34.9, 32.5, 31.6, 31.0, 28.8, 22.6, 14.7, 14.1, 12.8

LCMS ESI$^+$ (m/z): 367.3 $[M+H]^+$, **LCMS** purity 100%

Quantity: 0.015 g

Date: 15.07.2020

Prepared by: Dr.chem. V.Andrianovs

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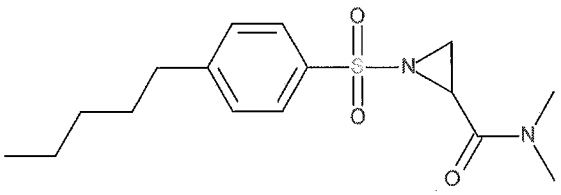
C-3368



N,N-Dimethyl-1-(4-pentylphenyl)sulfonyl-aziridine-2-carboxamide

Molecular formula: $C_{16}H_{24}N_2O_3S$

Molecular weight: 324.44

Melting point: oil

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$, HMDSO) δ: 7.85 (d, *J*=8.5 Hz, 2H), 7.30 (d, *J*=8.5 Hz, 2H), 3.59 (dd, *J*=6.9, 4.3 Hz, 1H), 3.21 (s, 3H), 2.97 (s, 3H), 2.68 (t, *J*=7.8 Hz, 2H), 2.68 (d, *J*=4.3 Hz, 1H), 2.65 (d, *J*=6.9 Hz, 1H), 1.63 (quintet, *J*=7.5 Hz, 2H), 1.23-1.39 (m, 4H), 0.89 (t, *J*=7.0 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

($CDCl_3$, HMDSO) δ: 164.9, 150.0, 134.4, 129.2, 128.2, 37.2, 36.0, 35.9, 35.2, 32.5, 31.3, 30.7, 22.4, 13.9

LCMS ESI$^+$ (m/z): 325.2 $[M+H]^+$, **LCMS** purity 100%

Quantity: 0.073 g

Date: 15.07.2020

Prepared by: Dr.chem. V.Andrianovs

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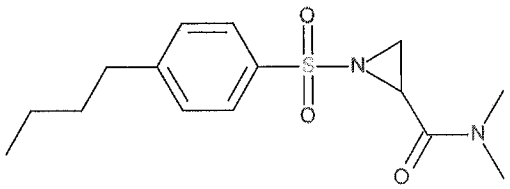
C-3362



1-(4-Butylphenyl)sulfonyl-N,N-dimethyl-aziridine-2-carboxamide

Molecular formula: $C_{15}H_{22}N_2O_3S$

Molecular weight: 310.41

Melting point: oil

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$, HMDSO) δ: 7.86 (d, *J*=8.4 Hz, 2H), 7.35 (d, *J*=8.4 Hz, 2H), 3.59 (dd, *J*=6.9, 4.2 Hz, 1H), 3.22 (s, 3H), 2.98 (s, 3H), 2.69 (t, *J*=7.6 Hz, 2H), 2.68 (d, *J*=4.2 Hz, 1H), 2.65 (d, *J*=6.9 Hz, 1H), 1.57-1.66 (m, 2H), 1.35 (sextet, *J*=7.5 Hz, 2H), 0.93 (d, *J*=7.4 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

($CDCl_3$, HMDSO) δ: 164.9, 150.0, 134.3, 129.2, 128.2, 37.2, 36.0, 35.6, 35.2, 33.1, 32.5, 22.2, 13.8

LCMS ESI$^+$ (m/z): 311.2 $[M+H]^+$, **LCMS** purity 100%

Quantity: 0.087 g

Date: 15.07.2020

Prepared by: Dr.chem. V.Andrianovs

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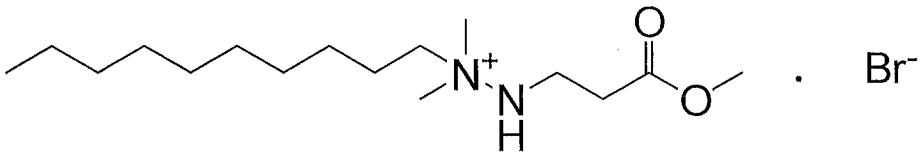
C-3743



1-Decyl-2-(3-methoxy-3-oxopropyl)-1,1-dimethylhydrazin-1-ium bromide

Molecular formula: $C_{16}H_{35}BrN_2O_2$

Molecular weight: 367.19

Melting point: oil

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$, HMDSO) δ: 7.25 (t, *J*=7.7 Hz, 1H), 3.66 (s, 3H), 3.54-3.61 (m, 2H), 3.49 (s, 6H), 3.18 (q, *J*=7.0 Hz, 2H), 2.64 (d, *J*=6.5 Hz, 2H), 1.71-1.82 (m, 2H), 1.28-1.39 (m, 4H), 1.16-1.28 (m, 10H), 0.84 (t, *J*=6.9 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

($CDCl_3$, HMDSO) δ: 171.8, 65.8, 52.2, 52.0, 38.5, 31.8, 31.3, 29.4, 29.4, 29.2, 26.2, 22.7, 22.6, 14.1

Quantity: 0.017 g

Date: 19.08.2020

Prepared by: Dr.chem. V.Andrianovs

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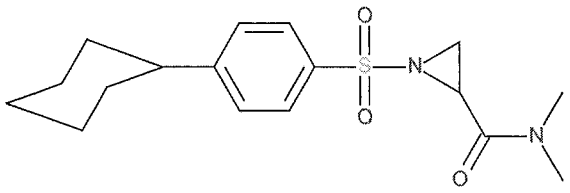
C-3384



1-(4-Cyclohexylphenyl)sulfonyl-N,N-dimethyl-aziridine-2-carboxamide

Molecular formula: $C_{17}H_{24}N_2O_3S$

Molecular weight: 336.45

Melting point: oil

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$, HMDSO) δ: 7.86 (d, *J*=8.5 Hz, 2H), 7.37 (d, *J*=8.5 Hz, 2H), 3.58 (dd, *J*=6.9, 4.3 Hz, 1H), 3.21 (s, 3H), 2.97 (s, 3H), 2.68 (d, *J*=4.3 Hz, 1H), 2.65 (d, *J*=6.9 Hz, 1H), 2.54-2.63 (m, 1H), 1.80-1.92 (m, 4H), 1.72-1.80 (m, 1H), 1.32-1.48 (m, 4H), 1.19-1.32 (m, 1H)

^{13}C-NMR spectrum (100 MHz):

($CDCl_3$, HMDSO) δ: 164.9, 154.9, 134.4, 128.2, 127.7, 44.6, 37.3, 36.0, 35.1, 34.0, 32.5, 26.6, 25.9

LCMS ESI$^+$ (m/z): 337.2 $[M+H]^+$, **LCMS** purity 95.84%

Quantity: 0.010 g

Date: 15.07.2020

Prepared by: Dr.chem. V.Andrianovs

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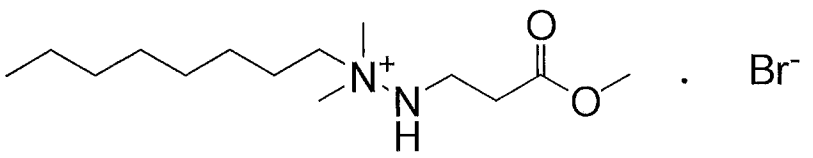
C-3744



2-(3-Methoxy-3-oxopropyl)-1,1-dimethyl-1-octylhydrazin-1-ium bromide

Molecular formula: $C_{14}H_{31}BrN_2O_2$

Molecular weight: 339.14

Melting point: oil

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$, HMDSO) δ: 7.23 (t, *J*=7.9 Hz, 1H), 3.66 (s, 3H), 3.54-3.61 (m, 2H), 3.49 (s, 6H), 3.19 (q, *J*=7.0 Hz, 2H), 2.64 (t, *J*=6.5 Hz, 2H), 1.71-1.82 (m, 2H), 1.29-1.39 (m, 4H), 1.18-1.28 (m, 6H), 0.84 (t, *J*=6.9 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

($CDCl_3$, HMDSO) δ: 171.8, 65.9, 52.2, 52.0, 38.6, 31.6, 31.3, 29.2, 29.0, 26.2, 22.7, 22.6, 14.1

Quantity: 0.021 g

Date: 20.08.2020

Prepared by: Dr.chem. V.Andrianovs

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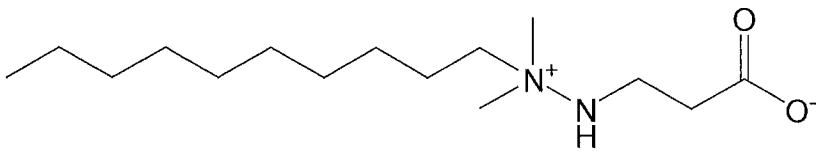
C-3745



3-(1-Decyl-1,1-dimethylhydrazin-1-ium-2-yl)propanoate

Molecular formula: $C_{15}H_{32}N_2O_2$

Molecular weight: 272.43

Melting point: 173-175°C

^{1}H-NMR spectrum (400 MHz):

(D_2O, HMDSO) δ: 3.43-3.56 (m, 2H), 3.30 (s, 6H), 3.15 (t, *J*=6.7 Hz, 2H), 2.37 (t, *J*=6.7 Hz, 2H), 1.74-1.86 (m, 2H), 1.35-1.43 (m, 4H), 1.23-1.35 (m, 10H), 0.90 (t, *J*=6.8 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

(D_2O, HMDSO) δ: 178.7, 65.2, 52.1, 39.8, 34.4, 31.7, 29.3, 29.2, 29.1, 28.9, 25.7, 22.4, 22.1, 13.8

Quantity: 0.023 g

Date: 21.08.2020

Prepared by: Dr.chem. V.Andrianovs

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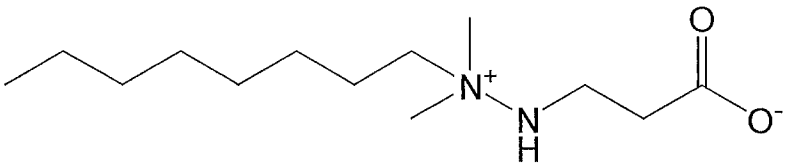
C-3746



3-(1,1-Dimethyl-1-octylhydrazin-1-ium-2-yl)propanoate

Molecular formula: $C_{13}H_{28}N_2O_2$

Molecular weight: 244.38

Melting point: 188-190°C

^{1}H-NMR spectrum (400 MHz):

(D_2O, HMDSO) δ: 3.45-3.54 (m, 2H), 3.27 (s, 6H), 3.16 (t, *J*=6.6 Hz, 2H), 2.38 (t, *J*=6.6 Hz, 2H), 1.74-1.85 (m, 2H), 1.34-1.42 (m, 4H), 1.24-1.34 (m, 6H), 0.87 (t, *J*=6.9 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

(D_2O, HMDSO) δ: 179.4, 65.1, 52.1, 39.6, 34.3, 31.0, 28.1, 25.2, 22.0, 22.7, 21.8, 13.4

Quantity: 0.023 g

Date: 25.08.2020

Prepared by: Dr.chem. V.Andrianovs

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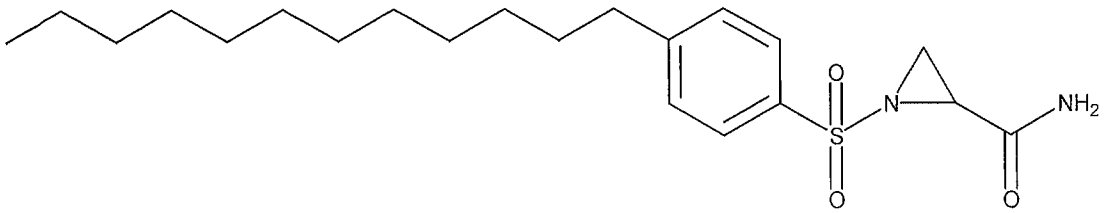
C-3742



1-((4-Dodecylphenyl)sulfonyl)aziridine-2-carboxamide

Molecular formula: $C_{21}H_{34}N_2O_3S$

Molecular weight: 394.23

Melting point: 66-68°C

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$, HMDSO) δ: 7.84 (d, *J*=8.4 Hz, 2H), 7.37 (d, *J*=8.4 Hz, 2H), 6.11 (s, 1H), 5.67 (s, 1H), 3.24 (dd, *J*=7.6, 4.6 Hz, 1H), 2.77 (d, *J*=7.6 Hz, 1H), 2.70 (t, *J*=7.7 Hz, 2H), 2.56 (d, *J*=4.6 Hz, 1H), 1.63 (quintet, *J*=7.5 Hz, 2H), 1.20-1.38 (m, 18H), 0.87 (t, *J*=6.9 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

($CDCl_3$, HMDSO) δ: 168.4, 150.6, 133.5, 129.9, 129.5, 37.7, 35.0, 33.2, 31.9, 31.0, 29.7, 29.6, 29.5, 29.4, 29.4, 29.4, 29.3, 22.7, 14.1

LCMS ESI$^+$ (m/z): 395.4 $[M+H]^+$, **LCMS** purity 95.26%

Quantity: 0.019 g

Date: 16.07.2020

Prepared by: Dr.chem. V.Andrianovs

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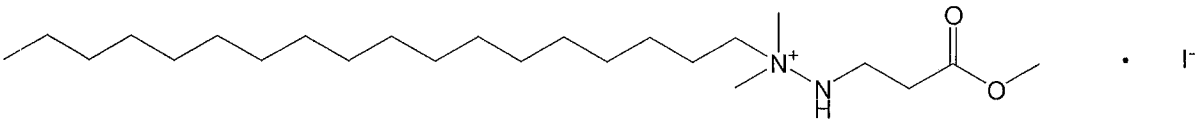
C-3762



2-(3-Methoxy-3-oxopropyl)-1,1-dimethyl-1-octadecylhydrazin-1-ium iodide

Molecular formula: $C_{24}H_{51}IN_2O_2$

Molecular weight: 526.59

Melting point: 57-59°C

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$, HMDSO) δ: 7.14 (t, *J*=7.7 Hz, 1H), 3.70 (s, 3H), 3.55-3.62 (m, 2H), 3.50 (s, 6H), 3.24 (q, *J*=7.0 Hz, 2H), 2.70 (t, *J*=6.4 Hz, 2H), 1.75-1.85 (m, 2H), 1.33-1.44 (m, 4H), 1.20-1.33 (m, 26H), 0.88 (t, *J*=6.9 Hz, 3H)

^{13}C-NMR spectrum (100 MHz):

($CDCl_3$, HMDSO) δ: 171.8, 66.3, 52.6, 52.1, 38.7, 31.9, 31.2, 29.7, 29.7, 29.6, 29.5, 29.4, 29.4, 29.6, 29.3 26.1, 22.7, 22.7, 14.1

Quantity: 0.035 g

Date: 29.09.2020

Prepared by: Dr.chem. V.Andrianovs

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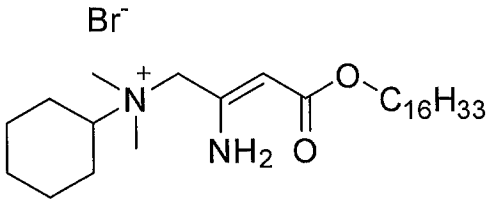
Z-4-11



(Z)-N-(2-Amino-4-(hexadecyloxy)-4-oxobut-2-en-1-yl)-N,N-dimethylcyclohexanaminium bromide

Molecular formula: $C_{28}H_{55}BrN_2O_2$

Molecular weight: 531.66

^{1}H-NMR spectrum (300 MHz):

($CDCl_3$) δ: 7.93-7.61 (br.s. 2H), 4.57 (s, 2H), 4.56 (s, 1H), 4.06 (t, *J*=6.8 MHz, 2H) 3.82-3.67 (m, 1H), 3.27 (s, 6H), 2.38-2.25 (m, 2H), 2.12-1.97 (m, 2H), 1.80-1.36 (m, 8H), 1.35-1.08 (m, 26H), 0.87 (t, *J*=7.0 MHz, 3H).

Elemental analysis:

Found, %:	C 63.64, H 10.52, N 5.09
Calculated, %:	C 63.26, H 10.43, N 5.27

Quantity: 0.022 g

Date: 02.11.2020

Prepared by: M.Sc. Anda Sipola

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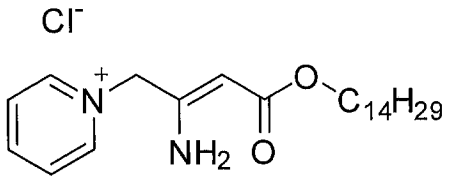
Z-3-35



(Z)-1-(2-Amino-4-oxo-4-(tetradecyloxy)but-2-en-1-yl)pyridin-1-ium chloride

Molecular formula: $C_{23}H_{39}ClN_2O_2$

Molecular weight: 411.03

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$) δ: 9.67 (d, *J*=6.4 MHz, 2H), 8.46 (t, *J*=7.7 MHz, 1H), 8.04 (t, *J*=6.4 MHz, 2H), 7.99-7.72 (br.s. 2H), 5.70 (s, 2H), 4.78 (s, 1H), 4.06 (t, *J*=6.8 MHz, 2H), 1.65-1.48 (m, 2H), 1.38-1.19 (m, 22H), 0.88 (t, *J*=7.0 MHz, 3H)

Elemental analysis:

Found, %:	C 67.29, H 9.74, N 7.01
Calculated, %:	C 67.21, H 9.56, N 6.82

Quantity: 0.025 g

Date: 05.11.2020

Prepared by: M.Sc. Anda Sipola

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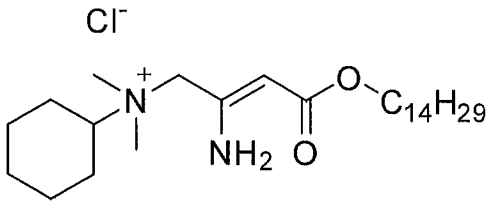
Z-3-1



(Z)-N-(2-Amino-4-oxo-4-(tetradecyloxy)but-2-en-1-yl)-N,N-dimethylcyclohexanaminium chloride

Molecular formula: $C_{26}H_{51}ClN_2O_2$

Molecular weight: 459.16

^{1}H-NMR spectrum (300 MHz):

($CDCl_3$) δ: 7.93-7.61 (br.s. 2H), 4.57 (s, 2H), 4.56 (s, 1H), 4.06 (t, *J*=6.8 MHz, 2H) 3.82-3.67 (m, 1H), 3.27 (s, 6H), 2.38-2.25 (m, 2H), 2.12-1.97 (m, 2H), 1.80-1.36 (m, 8H), 1.35-1.08 (m, 22H), 0.87 (t, *J*=7.0 MHz, 3H).

Elemental analysis:

Found, %:	C 67.77, H 11.43, N 5.97
Calculated, %:	C 68.01, H 11.20, N 6.10

Quantity: 0.027 g

Date: 02.11.2020

Prepared by: M.Sc. Anda Sipola

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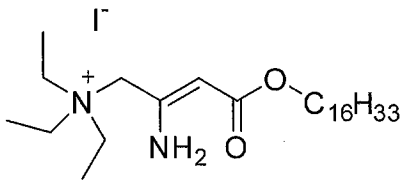
Certificate of Analysis

Z-2-67k



(Z)-2-Amino-N,N,N-triethyl-4-(hexadecyloxy)-4-oxobut-2-en-1-aminium iodide

Molecular formula: $C_{26}H_{53}IN_2O_2$

Molecular weight: 552.63

Melting point: 163-165 °C

^{1}H-NMR spectrum (400 MHz):

($CDCl_3$) δ: 7.74-7.32 (br.s. 2H), 4.66 (s, 1H), 4.52 (s, 2H), 4.06 (t, *J*=6.8 MHz, 2H), 3.62 (q, *J*=7.2 MHz, 6H), 1.67-1.56 (m, 2H), 1.48 (t, *J*=7.2 MHz, 9H), 1.37-1.20 (m, 26H), 0.88 (t, *J*=7.0 MHz, 3H)

Elemental analysis:

Found, %:	C 56.05, H 9.54, N 4.68
Calculated, %:	C 56.51, H 9.67, N 5.07

Quantity: 0.028 g

Date: 03.11.2020

Prepared by: M.Sc. Anda Sipola