I. General Information

Reagents and solvents were used from Sigma-Aldrich, Oakwood Chemical, Fisher Chemical, and TCI America without further purification. All reactions were carried out under an ambient atmosphere unless otherwise noted, with reagent grade solvents and magnetic stirring. All yields refer to spectroscopically pure compounds. ^{1}H and ^{13}C NMR spectra were measured with a 400MHz or 500MHz JEOL spectrophotometer, and chemical shifts were reported on a δ-scale (ppm) downfield from TMS. Coupling constants were calculated in hertz. The solvent used was chloroform-*d* ($CDCl_3$), with an internal reference of 7.26 ppm for ^{1}H NMR and 77.16 ppm for ^{13}C NMR. Accurate mass spectrometry data was acquired on a Thermo Exactive Plus.

Biological Assays

For all biological assays, laboratory strains of methicillin-susceptible *Staphylococcus aureus* MSSA (SH1000), *Enterococcus faecalis* (OG1RF), *Escherichia coli* (MC4100), *Pseudomonas aeruginosa* (PAO1), community-acquired methicillin-resistant *Staphylococcus aureus* CA-MRSA (USA300-0114), and hospital-acquired methicillin-resistant *Staphylococcus aureus* HA-MRSA (ATCC 33591) were grown with shaking at 37 °C overnight from freezer stocks in 10mL of the indicated media: SH1000, OG1RF, MC4100, and PAO1 were grown in Mueller-Hinton media, whereas USA300-0114 and ATCC 33591were grown in THB media.

Minimum Inhibitory Concentration (MIC)

Compounds were serially diluted two-fold from stock solutions to yield twelve test concentrations. Overnight *S. aureus, E. faecalis, E. coli, P. aeruginosa*, USA300-0114 (CA-MRSA), and ATCC 33591 (HA-MRSA) cultures diluted to ca. 10^6 cfu/mL in MH or THB media and regrown to exponential phase as determined by optical density recorded at 600nm (OD^{600}). All cultures were diluted again to ca. 10^6 cfu/mL in MH media and 100 μL were inoculated into each well of a U-bottom 96-well plate (BD Biosciences, BD 351177) containing 100 μL of compound solution. Plates were incubated statically at 37°C for 72 hours upon which time wells were evaluated visually for bacterial growth. The MIC was determined as the lowest concentration of compound resulting in no bacterial growth visible to the naked eye, based on the majority of three independent experiments. Aqueous DMSO controls were conducted as appropriate for each compound.

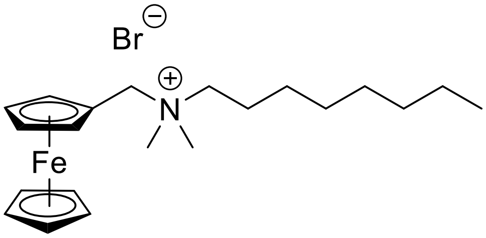
Red Blood Cell (RBC) Lysis Assay ($Lysis_{20}$)

RBC lysis assays were performed on mechanically defibrinated sheep blood (Hemostat Labs: DSB030). 1.5 mL of blood was placed into a microcentrifuge tube and centrifuged at 10,000 rpm for ten minutes. The supernatant was removed, and the cells were resuspended with 1 mL of phosphate-buffered saline (PBS). The suspension was centrifuged as described above, the supernatant was removed, and cells were resuspended two more times. The final cell suspension was diluted twentyfold with PBS. The twentyfold suspension dilution was then aliquoted into microcentrifuge tubes containing compound serially diluted in PBS. TritonX (1% by volume) served as a positive control (100% lysis marker) and sterile PBS served as a negative control (0%

lysis marker). Samples were then placed in an incubator at 37 °C and shaken at 200 rpm. After 1 hour, the samples were centrifuged at 10,000 rpm for ten minutes. The absorbance of the supernatant was measured with a UV spectrometer at a 540nm wavelength.

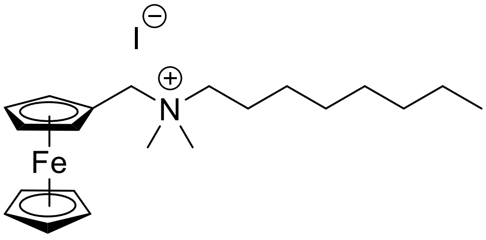
II. Synthesis of Compounds

Preparation of **Fe-8 Br**



To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-bromooctane (0.389 g, 2.01 mmol) and acetonitrile (4 mL). The solution was heated to reflux and stirred for 24 hours. After cooling to room temperature, cold 1:1 ether:hexanes (25 mL) was added and the flask was cooled at -25 °C for 18 hours. The resulting precipitate was isolated via vacuum filtration to afford **Fe-8 Br** as an orange-yellow powder (0.285 g, 64.6%); ^{1}H NMR (500 MHz, chloroform-*d*) δ 4.82 (s, 2H), 4.50 (s, 2H), 4.33 (s, 2H), 4.28 (s, 5H), 3.33 (br s, 2H), 3.24 (s, 6H), 1.72 (br s, 2H), 1.33–1.25 (m, 10H), 0.86 (t, *J* = 8.0 Hz, 3H); ^{13}C NMR (125.8 MHz, chloroform-*d*) δ 72.5, 72.2, 70.7, 69.8, 65.6, 63.3, 50.1, 31.7, 29.3, 29.1, 26.5, 23.0, 22.7, 14.2. HRMS (ES+): Found 354.20742, $C_{21}H_{34}N^{54}Fe$ [M-Br$^-$]$^+$ requires 354.20819.

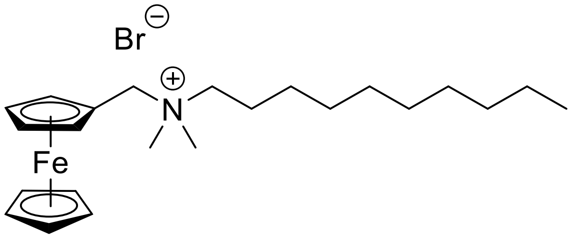
Preparation of **Fe-8 I**



To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-iodoooctane (0.303 g, 1.26 mmol) and acetonitrile (5 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting liquid was triturated with 1:1 acetone:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-8 I** as an orange-yellow powder (0.306 g, 62.6%); ^{1}H NMR (500 MHz, chloroform-*d*) δ 4.86 (s, 2H), 4.54

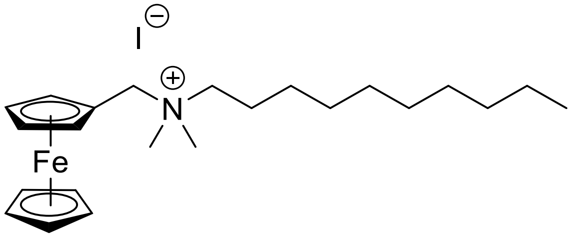
(s, 2H), 4.31 (s, 2H), 4.30 (s, 5H), 3.35 (s, 2H), 3.20 (s, 6H), 1.72 (br s, 2H), 1.32–1.23 (m, 10H), 0.85 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR (125.8 MHz, chloroform-*d*) δ 72.3, 72.1, 70.7, 69.8, 65.6, 63.4, 50.0, 31.7, 29.3, 29.1, 26.4, 23.0, 22.7, 14.2. HRMS (ES+): Found 354.20740, $C_{21}H_{34}N^{54}Fe$ $[M\text{-}I^-]^+$ requires 354.20819.

Preparation of **Fe-10 Br**



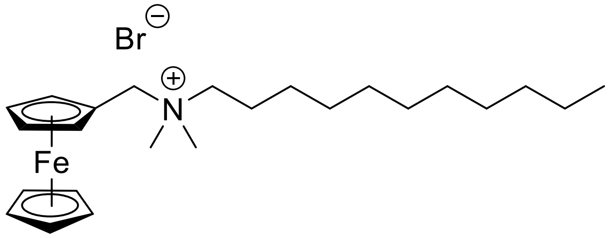
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-bromodecane (0.268 g, 1.21 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting liquid was triturated with 1:4 acetone:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-10 Br** as a dark-yellow powder (0.243 g, 51.9%); ^{1}H NMR (500 MHz, chloroform-*d*) δ 4.82 (s, 2H), 4.50 (s, 2H), 4.32 (s, 2H), 4.28 (s, 5H), 3.33 (s, 2H), 3.24 (s, 6H), 1.73 (s, 2H), 1.33–1.23 (m, 14H), 0.86 (t, *J* = 6.5 Hz, 3H); ^{13}C NMR (125.8 MHz, chloroform-*d*) δ 72.5, 72.3, 70.7, 69.8, 65.8, 63.4, 50.1, 31.9, 29.5, 29.4, 29.3, 26.5, 23.1, 22.7, 14.2. HRMS (ES+): Found 382.23867, $C_{23}H_{38}N^{54}Fe$ $[M\text{-}Br^-]^+$ requires 382.23949.

Preparation of **Fe-10 I**



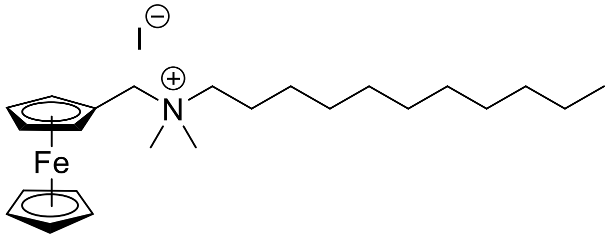
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-iododecane (0.338 g, 1.26 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting liquid was triturated with 1:1 ether:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-10 I** as a dark-yellow powder (0.368 g, 71.3%); ^{1}H NMR (400 MHz, chloroform-*d*) δ 4.85 (s, 2H), 4.54 (s, 2H), 4.29 (s, 7H), 3.34 (br s, 2H), 3.18 (s, 6H), 1.71 (br s, 2H), 1.31–1.21 (m, 14H), 0.84 (t, *J* = 6.6 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.3, 72.1, 70.7, 69.8, 65.6, 63.4, 50.0, 31.9, 29.5, 29.3, 26.4, 23.0, 22.7, 14.2. HRMS (ES+): Found 382.23874, $C_{23}H_{38}N^{54}Fe$ $[M\text{-}I^-]^+$ requires 382.23949.

Preparation of **Fe-11 Br**



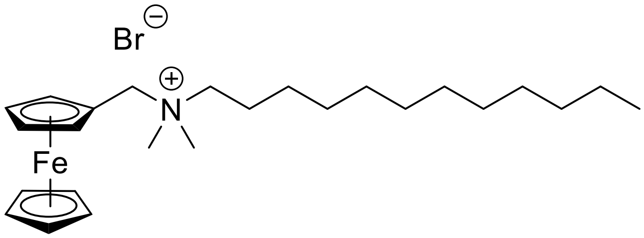
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-bromoundecane (0.296 g, 1.26 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting liquid was triturated with 1:1 ether:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-11 Br** as a yellow powder (0.345 g, 71.4%); ^{1}H NMR (400 MHz, chloroform-*d*) δ 4.79 (s, 2H), 4.49 (s, 2H), 4.29 (s, 2H), 4.26 (s, 5H), 3.33 (br s, 2H), 3.21 (s, 6H), 1.70 (br s, 2H), 1.30–1.20 (m, 16H), 0.83 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.34, 72.28, 70.7, 69.7, 65.6, 63.2, 50.1, 31.9, 29.59, 29.51, 29.48, 29.34, 26.5, 23.0, 22.7, 14.2. HRMS (ES+): Found 396.25437, $C_{24}H_{40}N^{54}Fe$ $[M\text{-}Br^-]^+$ requires 396.25514.

Preparation of **Fe-11 I**



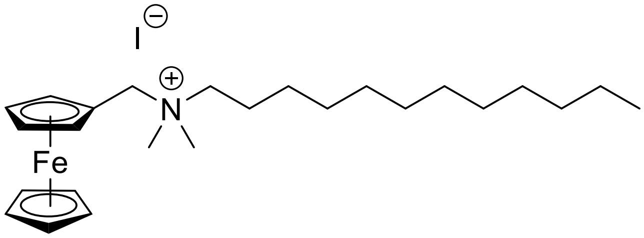
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-iodoundecane (0.355 g, 1.26 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting solid was triturated with 1:1 ether:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-11 I** as a yellow powder (0.412 g, 77.7%); ^{1}H NMR (400 MHz, chloroform-*d*) δ 4.86 (s, 2H), 4.54 (s, 2H), 4.30 (s, 2H), 4.29 (s, 5H), 3.35 (br s, 2H), 3.19 (s, 6H), 1.72 (br s, 2H), 1.31–1.22 (m, 16H), 0.85 (t, *J* = 7.0 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.3, 72.1, 70.7, 69.8, 65.7, 63.4, 50.1, 31.9, 29.62, 29.53, 29.49, 29.37, 29.33, 26.4, 23.0, 22.7, 14.2. HRMS (ES+): Found 396.25436, $C_{24}H_{40}N^{54}Fe$ $[M\text{-}I^{-}]^{+}$ requires 396.25514.

Preparation of **Fe-12 Br**



To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-bromododecane (0.315 g, 1.26 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting solid was triturated with 1:1 ether:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-12 Br** as an orange-yellow powder (0.365 g, 73.4%); ^{1}H NMR (400 MHz, chloroform-*d*) δ 4.75 (s, 2H), 4.46 (s, 2H), 4.24 (s, 2H), 4.21 (s, 5H), 3.31 (br s, 2H), 3.15 (s, 6H), 1.66 (br s, 2H), 1.26–1.16 (m, 18H), 0.79 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.4, 72.3, 70.6, 69.7, 65.5, 63.2, 50.0, 31.9, 29.6, 29.5, 29.3, 26.4, 23.0, 22.7, 14.1. HRMS (ES+): Found 410.26995, $C_{25}H_{42}N^{54}Fe$ $[M\text{-}Br^{-}]^{+}$ requires 410.27079.

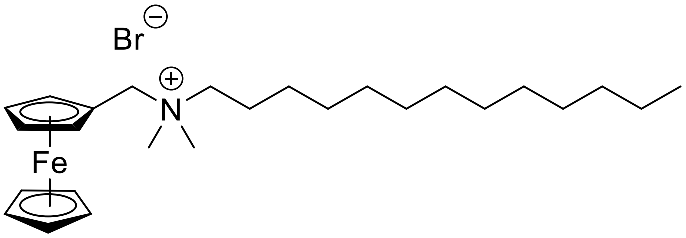
Preparation of **Fe-12 I**



To (dimethylaminomethyl)ferrocene (0.246g, 1.01 mmol) was added 1-iodododecane (0.374 g, 1.26 mmol) and acetonitrile (5 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation.

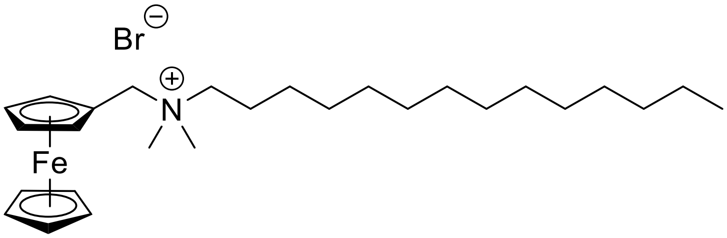
The resulting liquid was triturated with 1:1 ether:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-12 I** as a dark-yellow powder (0.399 g, 73.2%); ^{1}H NMR (400 MHz, chloroform-*d*) δ 4.81 (s, 2H), 4.51 (s, 2H), 4.24 (s, 7H), 3.32 (s, 2H), 3.13 (s, 6H), 1.67 (br s, 2H), 1.27–1.17 (m, 18H), 0.80 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.3, 72.2, 70.6, 69.7, 65.6, 63.4, 50.0, 31.9, 29.62, 29.50, 29.47, 29.36, 29.28, 26.3, 23.0, 22.7, 14.2. HRMS (ES+): Found 410.26997, $C_{25}H_{42}N^{54}Fe$ $[M\text{-}I^-]^+$ requires 410.27079.

Preparation of **Fe-13 Br**



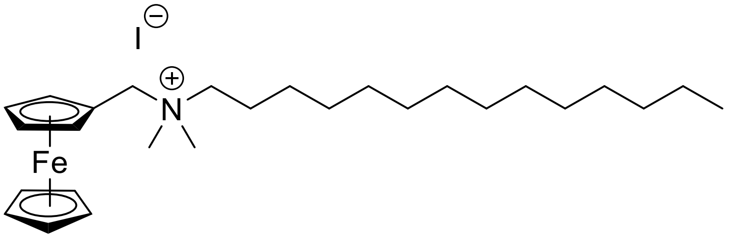
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-bromotridecane (0.332 g, 1.26 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting liquid was triturated with 1:4 acetone:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-13 Br** as a yellow powder (0.347 g, 67.8%); ^{1}H NMR (400 MHz, chloroform-*d*) δ 4.77 (s, 2H), 4.47 (s, 2H), 4.26 (s, 2H), 4.23 (s, 5H), 3.32 (br s, 2H), 3.17 (s, 6H), 1.67 (br s, 2H), 1.27–1.18 (m, 20H), 0.81 (t, *J* = 6.6 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.4, 72.3, 70.6, 69.7, 65.4, 63.2, 50.0, 31.9, 29.7, 29.62, 29.51, 29.48, 29.38, 29.32, 26.4, 23.0, 22.7, 14.2. HRMS (ES+): Found 424.28565, $C_{26}H_{44}N^{54}Fe$ $[M\text{-}Br^-]^+$ requires 424.28644.

Preparation of **Fe-14 Br**



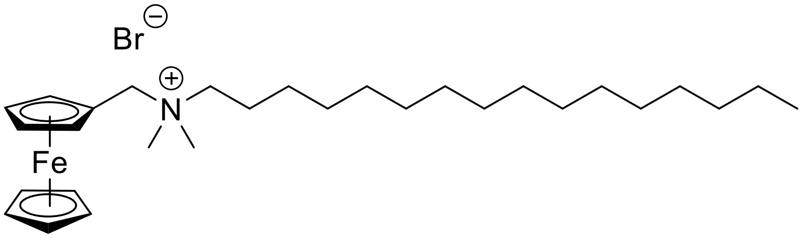
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-bromotetradecane (0.333 g, 1.20 mmol) and acetonitrile (5 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting liquid was triturated with 1:1 ether:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-14 Br** as a yellow powder (0.360 g, 68.4%); ^{1}H NMR (500 MHz, chloroform-*d*) δ 4.80 (s, 2H), 4.49 (s, 2H), 4.29 (s, 2H), 4.26 (s, 5H), 3.33 (br s, 2H), 3.22 (s, 6H), 1.71 (br s, 2H), 1.31–1.21 (m, 22H), 0.83 (t, *J* = 6.3 Hz, 3H); ^{13}C NMR (125.8 MHz, chloroform-*d*) δ 72.4, 72.3, 70.6, 69.7, 65.5, 63.2, 50.0, 32.0, 29.71, 29.68, 29.63, 29.51, 29.48, 29.39, 29.33, 26.4, 23.0, 22.7, 14.2. HRMS (ES+): Found 438.30148, $C_{27}H_{46}N^{54}Fe$ [M-Br$^-$]$^+$ requires 438.30209.

Preparation of **Fe-14 I**



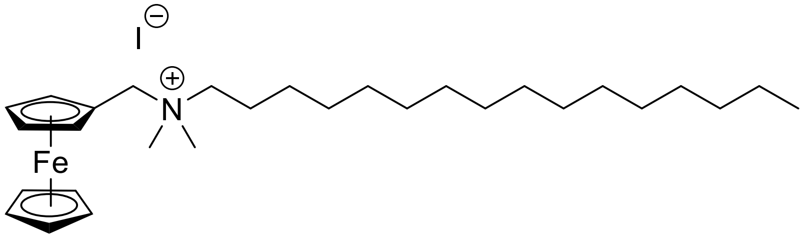
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-iodotetradecane (0.389 g, 1.20 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting solid was triturated with 1:4 acetone:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-14 I** as a yellow powder (0.349 g, 60.8 %); ^{1}H NMR (400 MHz, chloroform-*d*) δ 4.85 (s, 2H), 4.53 (s, 2H), 4.35 (s, 2H), 4.32 (s, 5H), 3.32 (br s, 2H), 3.21 (s, 6H), 1.74 (br s, 2H), 1.35–1.25 (m, 22H), 0.88 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.2, 72.0, 70.8, 69.8, 65.9, 63.5, 50.2, 32.0, 29.73, 29.68, 29.55, 29.49, 29.45, 29.3, 26.4, 23.0, 22.8, 14.2. HRMS (ES+): Found 438.30149, $C_{27}H_{46}N^{54}Fe$ [M-I$^-$]$^+$ requires 438.30209.

Preparation of **Fe-16 Br**



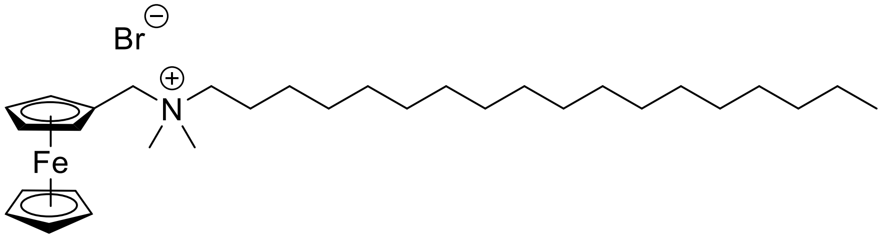
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-bromohexadecane (0.368 g, 1.21 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting solid was triturated with 1:4 acetone:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-16 Br** as a yellow powder (0.350 g, 63.3%); ^{1}H NMR (500 MHz, chloroform-*d*) δ 4.80 (s, 2H), 4.49 (s, 2H), 4.29 (s, 2H), 4.26 (s, 5H), 3.33 (br s, 2H), 3.22 (s, 6H), 1.70 (br s, 2H), 1.30–1.21 (m, 26H), 0.83 (t, *J* = 7.0 Hz, 3H); ^{13}C NMR (125.8 MHz, chloroform-*d*) δ 72.3, 72.2, 70.7, 69.7, 65.5, 63.2, 50.0, 32.0, 29.8, 29.71, 29.65, 29.53, 29.49, 29.4, 29.3, 26.4, 23.0, 22.7, 14.2. HRMS (ES+): Found 466.33276, $C_{29}H_{50}N^{54}Fe$ [M-Br$^-$]$^+$ requires 466.33339.

Preparation of **Fe-16 I**



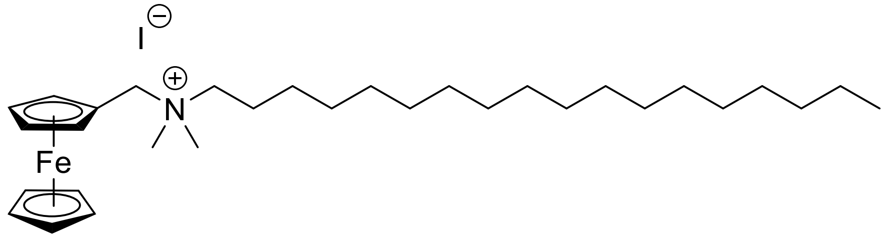
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-iodohexadecane (0.444 g, 1.26 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting solid was triturated with 1:4 acetone:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-16 I** as a yellow powder (0.356 g, 59.2%); ^{1}H NMR (500 MHz, chloroform-*d*) δ 4.87 (s, 2H), 4.54 (s, 2H), 4.31 (s, 2H), 4.30 (s, 5H), 3.32 (s, 2H), 3.20 (s, 6H), 1.72 (br s, 2H), 1.32–1.23 (m, 26H), 0.85 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR (125.8 MHz, chloroform-*d*) δ 72.3, 72.1, 70.7, 69.8, 65.6, 63.4, 50.0, 32.0, 29.78, 29.74, 29.69, 29.56, 29.51, 29.44, 29.33, 26.4, 23.0, 22.8, 14.2. HRMS (ES+): Found 466.33272, $C_{29}H_{50}N^{54}Fe$ [M-I$^-$]$^+$ requires 466.33339.

Preparation of **Fe-18 Br**



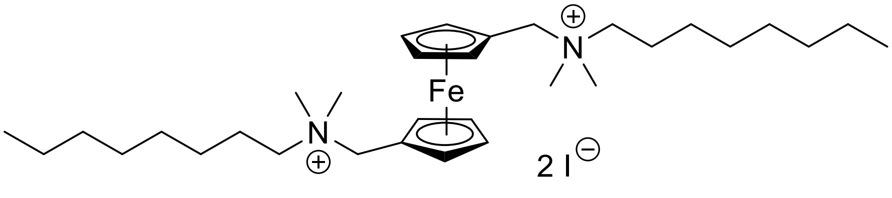
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-bromooctadecane (0.400 g, 1.20 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting solid was triturated with 1:4 acetone:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-18 Br** as a yellow powder (0.425 g, 72.9%); ^{1}H NMR (500 MHz, chloroform-*d*) δ 4.81 (s, 2H), 4.50 (s, 2H), 4.30 (s, 2H), 4.26 (s, 5H), 3.33 (br s, 2H), 3.22 (s, 6H), 1.70 (br s, 2H), 1.31–1.21 (m, 30H), 0.84 (t, *J* = 7.8 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.4, 72.2, 70.6, 69.6, 65.3, 63.2, 49.9, 32.0, 29.71, 29.67, 29.62, 29.50, 29.46, 29.37, 29.30, 26.4, 23.0, 22.7, 14.2. HRMS (ES+): Found 494.36406, $C_{31}H_{54}N^{54}Fe$ [M-Br$^-$]$^+$ requires 494.36469.

Preparation of **Fe-18 I**



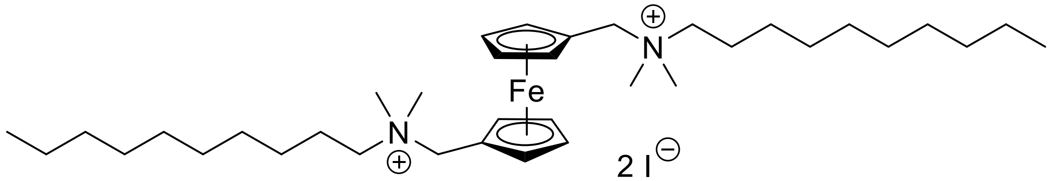
To (dimethylaminomethyl)ferrocene (0.246 g, 1.01 mmol) was added 1-iodooctadecane (0.480 g, 1.26 mmol) and acetonitrile (4 mL). The solution was stirred for 72 hours at room temperature under argon. The contents of the reaction flask were then concentrated using rotary evaporation. The resulting solid was triturated with 1:4 acetone:hexanes (25 mL) and cooled at -25 °C for 72 hours. The resulting precipitate was then isolated via vacuum filtration to afford **Fe-18 I** as a yellow powder (0.521 g, 82.7%); ^{1}H NMR (500 MHz, chloroform-*d*) δ 4.86 (s, 2H), 4.54 (s, 2H), 4.28 (s, 7H), 3.34 (s, 2H), 3.19 (s, 6H), 1.71 (br s, 2H), 1.30–1.21 (m, 30H), 0.84 (t, *J* = 8.8 Hz, 3H); ^{13}C NMR (100.6 MHz, chloroform-*d*) δ 72.3, 72.1, 70.7, 69.8, 65.6, 63.4, 50.1, 32.00, 29.79, 29.75, 29.69, 29.56, 29.51, 29.45, 29.33, 26.4, 23.0, 22.8, 14.2. HRMS (ES+): Found 494.36384, $C_{31}H_{54}N^{54}Fe$ [M-I$^-$]$^+$ requires 494.36469.

Preparation of Fe-8,8



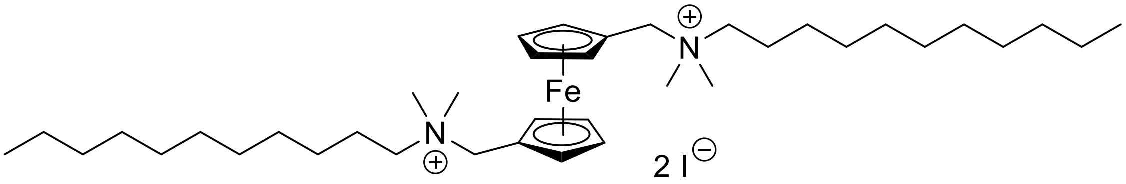
A mixture of 1,1'-bis(dimethylaminomethyl)ferrocene (0.202 g, 0.667 mmol) and 1-iodooctane (0.299 g, 1.66 mmol) was dissolved in acetone (3 mL). The resulting solution was heated to reflux and stirred for 24h. After cooling to room temperature, diethyl ether (10 mL) was added and the mixture was cooled to –20 °C overnight. The solution was decanted, and the resulting precipitate was dried under vacuum affording **Fe-8,8** as a brown wax (0.586 g, >99% yield). ^{1}H NMR (400 MHz, chloroform-*d*): δ 5.40 (s, 4H), 4.77 (s, 4H), 4.41 (s, 4H), 3.19 (m, 4H), 3.09 (s, 12H), 1.71 (br s, 4H), 1.29–1.20 (m, 20H), 0.81 (m, 6H). ^{13}C NMR (100.6 MHz, chloroform-*d*): δ 74.2, 73.7, 71.5, 64.7, 49.5, 31.6, 29.2, 29.1, 26.4, 23.1, 22.6, 14.1. HRMS (ES+): Found 651.30264, $C_{32}H_{58}N_2{}^{54}Fe^{127}I$ [M-I$^-$]$^+$ requires 651.30353.

Preparation of Fe-10,10



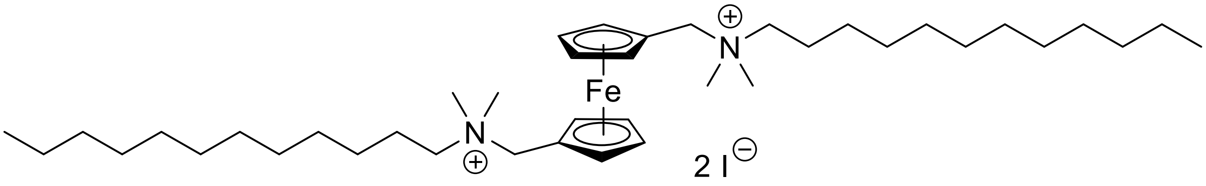
A mixture of 1,1'-bis(dimethylaminomethyl)ferrocene (0.202 g, 0.668 mmol) and 1-iododecane (0.147 g, 1.67 mmol) was dissolved in acetone (3 mL). The resulting solution was heated to reflux and stirred for 24h. After cooling to room temperature, diethyl ether (10 mL) was added and the mixture was cooled to –20 °C overnight. The solution was decanted, and the resulting precipitate was dried under vacuum affording **Fe-10,10** as a brown wax (0.489 g, 87.3% yield). ^{1}H NMR (400 MHz, chloroform-*d*): δ 5.48 (s, 4H), 4.81 (s, 4H), 4.41 (s, 4H), 3.29 (m, 4), 3.10 (s, 4H), 1.75 (br s, 4H), 1.31–1.21 (m, 28H), 0.84 (t, *J* = 6.6 Hz, 6H). ^{13}C NMR (100.6 MHz, chloroform-*d*): δ 74.2, 73.6, 71.4, 64.7, 49.4, 31.9, 29.5, 29.4, 29.31, 29.27, 26.5, 23.1, 22.8, 14.2. HRMS (ES+): Found 707.36484, $C_{36}H_{66}N_2{}^{54}Fe^{127}I$ [M-I$^-$]$^+$ requires 707.36613.

Preparation of Fe-11,11



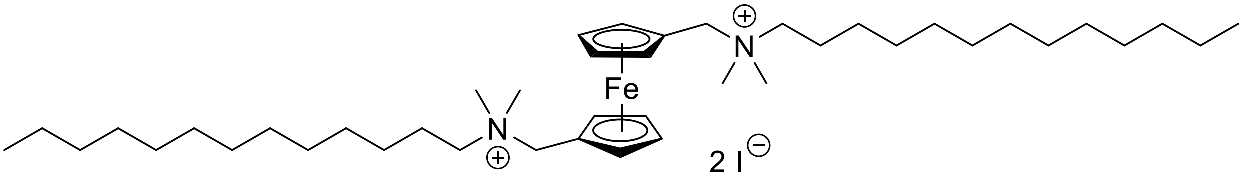
A mixture of 1,1'-bis(dimethylaminomethyl)ferrocene (0.189 g, 0.612 mmol) and 1-iodoundecane (0.535 g, 1.97 mmol) was dissolved in acetone (3 mL). The resulting solution was heated to reflux and stirred for 24h. After cooling to room temperature, diethyl ether (10 mL) was added and the mixture was cooled to –20 °C overnight. The solution was decanted, and the resulting precipitate was dried under vacuum affording **Fe-11,11** as a brown wax (0.511 g, 96.4% yield). ^{1}H NMR (400 MHz, chloroform-*d*): δ 5.44 (s, 4H), 4.78 (s, 4H), 4.41 (s, 4H), 3.29 (br s, 4H), 3.09 (s, 12H), 1.79 (br s, 4H), 1.29–1.20 (m, 32H), 0.83 (m, 6H). ^{13}C NMR (100.6 MHz, chloroform-*d*): δ 74.2, 73.6, 71.5, 69.7, 63.7, 49.4, 31.9, 29.6, 29.5, 29.4, 29.3, 26.4, 23.1, 22.7, 14.2. HRMS (ES+): Found 735.3958, $C_{38}H_{70}N_2{}^{54}Fe^{127}I$ [M-I$^-$]$^+$ requires 735.39743.

Preparation of Fe-12,12



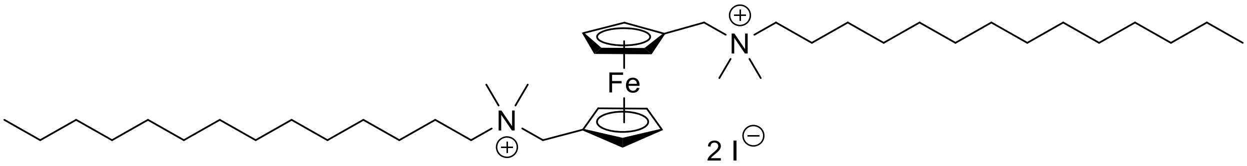
A mixture of 1,1'-bis(dimethylaminomethyl)ferrocene (0.173 g, 0.573 mmol) and 1-iodododecane (0.472 g, 1.59 mmol) was dissolved in acetone (3 mL). The resulting solution was heated to reflux and stirred for 24h. After cooling to room temperature, diethyl ether (10 mL) was added and the mixture was cooled to –20 °C overnight. The solution was decanted, and the resulting precipitate was dried under vacuum affording **Fe-12,12** as a brown wax (0.511 g, 94.6% yield). ^{1}H NMR (400 MHz, chloroform-*d*): δ 5.41 (s, 4H), 4.78 (s, 4H), 4.02 (s, 4H), 3.29 (br s, 4H), 3.09 (s, 12H), 1.73 (br s, 4H), 1.28–1.19 (m, 36H), 0.82 (br s, 6H). ^{13}C NMR (100.6 MHz, chloroform-*d*): δ 74.2, 73.6, 71.4, 64.8, 63.7, 49.4, 32.0, 29.7, 29.5, 29.4, 29.3, 26.4, 23.1, 22.7, 14.2. HRMS (ES+): Found 763.42728, $C_{40}H_{74}N_2{}^{54}Fe^{127}I$ [M-I$^-$]$^+$ requires 763.42873.

Preparation of Fe-13,13



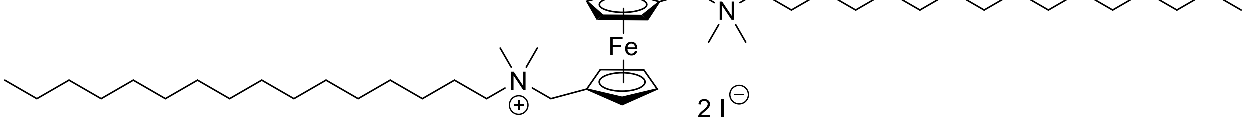
A mixture of 1,1'-bis(dimethylaminomethyl)ferrocene (0.165 g, 0.543 mmol) and 1-iodotridecane (0.922 g, 1.36 mmol) was dissolved in acetone (3 mL). The resulting solution was heated to reflux and stirred for 24h. After cooling to room temperature, diethyl ether (10 mL) was added and the mixture was cooled to –20 °C overnight. The solution was decanted, and the resulting precipitate was dried under vacuum affording **Fe-14,14** as a brown waxy solid (0.131 g, 24.9% yield). ^{1}H NMR (400 MHz, chloroform-*d*): δ 5.44 (s, 4H), 4.78 (s, 4H), 4.40 (s, 4H), 3.28 (br m, 4H), 3.09 (s, 12H), 1.74 (br s, 4H), 1.28–1.19 (m, 36H), 0.82 (t, *J* = 6.8 Hz, 6H). ^{13}C NMR (100.6 MHz, chloroform-*d*): δ 74.2, 73.6, 71.5, 64.7, 64.0, 49.4, 32.0, 29.7, 29.5, 29.4, 29.3, 26.5, 23.1, 22.7, 14.2. HRMS (ES+): Found 791.45829, $C_{42}H_{78}N_2{}^{54}Fe^{127}I$ $[M\text{-}I^-]^+$ requires 791.46003.

Preparation of Fe-14,14



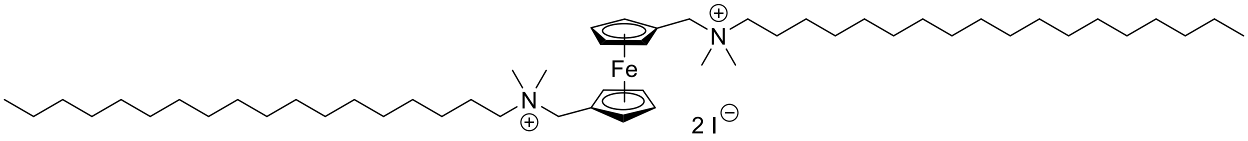
A mixture of 1,1'-bis(dimethylaminomethyl)ferrocene (0.203 g, 0.672 mmol) and 1-iodotetradecane (0.469 g, 1.43 mmol) was dissolved in acetone (3 mL). The resulting solution was heated to reflux and stirred for 24h. After cooling to room temperature, diethyl ether (10 mL) was added and the mixture was cooled to –20 °C overnight. The solution was decanted, and the resulting precipitate was dried under vacuum affording **Fe-14,14** as a brown waxy solid (0.609 g, 94.4% yield). ^{1}H NMR (400 MHz, chloroform-*d*): δ 5.49 (s, 4H), 4.82 (s, 4H), 4.41 (s, 4H), 3.29 (s, 4H), 3.29 (m, 4H), 3.10 (s, 12H), 1.75 (br s, 4H), 1.30–1.22 (m, 44H), 0.84 (t, *J* = 6.8 Hz, 6H). ^{13}C NMR (100.6 MHz, chloroform-*d*): δ 74.2, 73.6, 71.4, 64.8, 63.7, 49.4, 32.0, 29.8, 29.7, 29.6, 29.4, 29.3, 26.5, 23.1, 22.8, 14.2. HRMS (ES+): Found 819.48967, $C_{44}H_{82}N_2{}^{54}Fe^{127}I$ $[M\text{-}I^-]^+$ requires 819.49133.

Preparation of Fe-16,16



A mixture of 1,1’-bis(dimethylaminomethyl)ferrocene (0.193 g, 0.638 mmol) and 1-iodohexadecane (0.562 g, 1.43 mmol) was dissolved in acetone (3 mL). The resulting solution was heated to reflux and stirred for 24h. After cooling to room temperature, 1:2 ether:hexane (30 mL) was added and the mixture was cooled to –20 °C overnight. The solution was decanted, and the resulting precipitate was collected by vacuum filtration affording **Fe-16,16** as a yellow solid (0.293 g, 45.6% yield). ^{1}H NMR (400 MHz, chloroform-*d*): δ 5.46 (s, 4H), 2.85 (s, 4H), 4.41 (s, 4H), 3.28 (m, 4H), 3.10 (s, 12H), 1.77 (br s, 4H), 1.29–1.21 (m, 52H), 0.83 (t, J = 6.8 Hz, 6H). ^{13}C NMR (100.6 MHz, chloroform-*d*): δ 74.2, 73.6, 71.4, 64.7, 63.7, 49.4, 33.6, 32.0, 30.6, 29.71, 29.67, 29.6, 29.5, 29.4, 29.3, 28.6, 26.5, 23.1, 22.7, 14.2. HRMS (ES+): Found 875.55216, $C_{48}H_{90}N_{2}{}^{54}Fe^{127}I$ [M-I^{-}]$^{+}$ requires 875.55394.

Preparation of Fe-18,18



To a solution of 1,1’-bis(dimethylaminomethyl)ferrocene (0.153 g, 0.506 mmol) in acetonitrile (3 mL) was added 1-iodooctadecane (0.480 g, 1.30 mmol). The mixture was heated to reflux are stirred for 24 h. After 24h, the mixture was cooled to room temperature and the acetonitrile was removed under vacuum. The resulting precipitate was triturated with diethyl ether, then collected via vacuum filtration affording **Fe-18,18** as a yellow solid (0.371 g, 68.9%). ^{1}H NMR (400 MHz, chloroform-*d*): δ 5.45 (s, 4H), 4.80 (s, 4H), 4.41 (s, 4H), 3.29 (m, 4H), 3.10 (s, 12H), 1.74 (br s, 4H), 1.29–1.21 (m, 60H), 0.83 (m, 6H). ^{13}C NMR (100.6 MHz, chloroform-*d*): δ 74.2, 73.6, 71.5, 64.7, 63.7, 49.4, 32.0, 29.8, 29.7, 29.6, 29.5, 29.4, 29.3, 23.1, 22.8, 14.2. HRMS (ES+): Found 931.6145, $C_{52}H_{98}N_{2}{}^{54}Fe^{127}I$ [M-I^{-}]$^{+}$ requires 931.61654.