

Characterization data for quinoline ligands.

2-chloroquinoline-3-carbaldehyde (Compound L₁) :

Yield (73%). yellow pale solid. mp 148-149 °C. IR (KBr) ν , cm⁻¹: 3041 (C-H), 2870 (C-H), 1685 (C=O), 1550-1620 (C=C). GC-MS m/z 191.60 [M+H⁺]. ¹H-NMR (300 MHz, J Hz, CDCl₃) δ , ppm: 9.95 (s, 1H, CHO), 8.97 (s, 1H), 8.09 (d, J=7.6, 1H), 7.89 (d, J=7.85, 1H), 7.79 (dd, J₁=8.4, J₂=7.85, 1H), 7.55 (dd, J₁=8.4, J₂=7.6, 1H).

2-chloroquinoline-3-carboxylic acid (compound L₂) :

Yield 79%. yellow powder. mp 233-234 °C. IR (KBr) ν , cm⁻¹: 2900-3000 (C-H), 3000-3500 (O-H), 1655 (C=O), 1596 (C=N). GC-MS m/z 207.61 [M+H⁺]. ¹H-NMR (300 MHz, J Hz, CDCl₃) δ , ppm: 11.1 (s, 1H), 8.95 (s, 1H), 8.06 (d, J=8.6, 1H), 7.87 (d, J=7.86, 1H), 7.76 (dd, J₁=8.4, J₂=7.86, 1H), 7.55 (dd, J₁=8.4, J₂=8.6, 1H).

Ethyl 2-chloroquinoline-3-carboxylate (compound L₃) :

Yield 65%. white solid. mp 295-297 °C. IR (KBr) ν , cm⁻¹: 2950-3100 (C-H), 1655 (C=O), 1595 (C=N). GC-MS m/z: 235.1 [M+H⁺]. ¹H-NMR (300 MHz, J Hz, CDCl₃) δ , ppm: 9.64 (s, 1H), 8.32 (d, J=8.3, 1H), 8.08 (d, J=7.85, 1H), 7.85 (dd, J₁=8.4, J₂=7.85, 1H), 7.45 (dd, J₁=8.4, J₂=8.3, 1H), 4.1 (q, 2H), 1.26 (t, 3H).

2-chloroquinoline-3-carbohydrazide (compound L₄) :

Yield 86%. white solid. mp 288-290 °C. IR (KBr) ν , cm⁻¹: 3309-3409 (N-H), 1700 (C=O), 1611 (C=N). GC-MS m/z: 221.62 [M+H⁺]. ¹H-NMR (300 MHz, J Hz, CDCl₃) δ , ppm: 9.25 (s, 1H), 8.03 (m, 3H), 7.8 (dd, J₁=7.6, J₂=8.1, 1H), 7.55 (dd, J₁=8.1, J₂=7.85, 1H), 2.1 (d, J=5.4, 2H).

N'-benzylidene-2-chloroquinoline-3-carbohydrazide (compound L₅):

Yield 81%. Yellow solid. mp 265-267 °C. IR (KBr) ν , cm⁻¹: 3300-3400 (N-H), 1712 (C=O), 1604 (C=N). GC-MS m/z: 309.1 [M+H⁺]. ¹H NMR (300 MHz, J Hz, CDCl₃) δ , ppm: 9.18 (s, 1H), 8.64 (s, 1H), 8.1 (m, 3H), 7.78 (m, 2H), 7.55 (m, 5H).

2-oxo-1,2-dihydroquinoline-3-carbaldehyde (compound L₆):

Yield, 84%. white solid. mp 288-290 °C. IR (KBr) ν , cm⁻¹: 2950-3100 (C-H), 1656 (C=O), 1594 (C=N). GC-MS m/z: 173.03 [M+H⁺]. ¹H-NMR (300 MHz- CDCl₃) δ , ppm: 12.19 (s, 1H, NH), 10.22 (s, 1H, CHO), 8.50 (s, 1H, CH), 7.91 (d, 1H, CH), 7.64 (t, 1H, CH), 7.23 (t, 1H, CH), 7.32 (d, 1H, CH).

3-(2-chloroquinolin-3-yl)-1-phenylprop-2-en-1-one (compound L₇):

Yield (88%). Yellow solid. mp 169-171 °C. IR (KBr) ν , cm⁻¹: 1679 (C=O), 1666, 1596, 1574 (C=N). GC-MS m/z: 293.05 [M+H⁺]. ¹H-NMR (300 MHz, J Hz, CDCl₃) δ , ppm: 8.18 (s, 1H), 7.95 (d, ⁴J=9.25 Hz, 3H), 7.75 (d, ³J=8.1 Hz, 1H), 7.65 (m, 1H), 7.54 (m, 3H), 7.44 (m, 3H).