1-(Phenanthrolo[5,6-d]imidazol-2-yl)-3-(phenanthro[5,6-d]imidazol-2-yl)benzene

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2-(3-Formylphenyl)imidazo[4,5-f][1,10]phenanthroline was prepared by a previously published method [1]. A mixture of 2-(3-formylphenyl)imidazo[4,5-f][1,10]phenanthroline (0.15 g, 0.46 mmol), 9,10-phenanthrenequinone (0.104 g, 0.50 mmol), ammonium acetate (0.713 g, 9.3 mmol) and glacial acetic acid (20 cm³) was refluxed for about 2 h. The cooled solution was filtered, diluted with water (ca, 60 cm³) and neutralized with concentrated aqueous ammonia. The crude product was collected and purified by column chromatography on alumina with ethanol-toluene (1:4 v/v) as eluent to give the title compound as pale yellow powders. Yield 0.183 g, 77.5%.

1H NMR (500 MHz, d6-DMSO): 13.99 (s, 1H), 13.71 (s, 1H), 9.25 (s, 1H), 9.07 (dd, 2H, J = 2), 9.05 (d, 2H, J = 8.5), 8.88 (d, 2H, J = 8.5), 8.69 (d, 2H, J = 7.5), 8.45 (d, 1H, J = 8.0), 8.40 (d, 1H, J = 8.5), 7.88-7.84 (m, 3H), 7.78 (t, 2H, J = 7.5), 7.67 (t, 2H, J = 7.5).

13C NMR (125 MHz, d6-DMSO): 150.2, 148.7, 147.9, 143.8, 137.1, 135.8, 131.3, 130.8, 129.7, 127.9, 127.8, 127.6, 127.2, 126.9, 126.6, 125.5, 125.2, 124.2, 123.7, 123.1, 122.4, 122.1, 119.4.

IR (KBr, cm⁻¹): 3429.3, 1645, 1610, 1556, 1454, 1413, 1356, 1298, 1236, 1191, 1076, 954, 808, 756, 738, 710, 695, 672

UV-Vis (λ, nm, in ethanol): 260, 324, 361.


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References

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