**Synthesis, catalysis, antimicrobial activity and DNA interactions of new Cu(II)-Schiff base complexes**

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**Supplementary data**

**Table S1.** IR spectral data of the Schiff base amino acid ligands[28,31] and their corresponding ternary Cu(II)-complexes.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Comp. | ph(OH)/H2O | s(C=N) | As(COO) | sy(COO) | ph(C―O) | (M―N) | (M―O) |
| MST | 3438 (br m) | 1634 (s) | 1589 (m) | 1410 (m) | 1259 (m) | - | - |
| MSTDPCu | 3574 (br s) | 1626 (s) | 1542 (m) | 1364 (s) | 1242 (s) | 734 (s) | 506 (m) |
| MSP | 3389 (br m) | 1651 (s) | 1588 (w) | 1362 (m) | 1293 (m) | - | - |
| MSPDPCu | 3403 (br s) | 1627 (s) | 1546 (w) | 1345 (m) | 1218 (s) | 737 (s) | 535 (w) |
| DSP | 3441 (br m) | 1632 (s) | 1573 (s) | 1405 (s) | 1235 (s) | - | - |
| DSPDPCu | 3475 (br s) | 1604 (s) | 1537 (s) | 1392 (m) | 1182 (s) | 706 (w) | 558 (w) |
| DST | 3414 (br m) | 1628 (s) | 1599 (m) | 1443 (m) | 1240 (m) | - | - |
| DSTDPCu | 3470 (br s) | 1595 (s) | 1514 (m) | 1344 (m) | 1140 (m) | 739 (s) | 507 (w) |
| DSH | 3438 (br m) | 1640 (s) | 1588 (w) | 1430 (m) | 1280 (m) | - | - |
| DSHDPCu | 3441 (br s) | 1588 (s) | 1572 (s) | 1373 (m) | 1248 (s) | 702 (m) | 529 (w) |

br = broad band, s = strong, m = medium, w = weak, ph = phenolic, As = symmetric, sy = symmetric, st = stretching

**Table S2** Results of antibacterial bioassay of the prepared Schiff base amino acid and their ternary complexes in DMSO.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Inhibition zone (mm) | | | | | |
| Comp. | *B. subtilis* | | *E. coli* | | M. *luteus* | |
| Conc. (mg/ml) | 15 | 30 | 15 | 30 | 15 | 30 |
| DST | 5 | 10 | 5 | 10 | 8 | 12 |
| DSTDPCu | 16 | 27 | 11 | 22 | 16 | 34 |
| DSP | 4 | 9 | 3 | 8 | 6 | 11 |
| DSPDPCu | 15 | 26 | 9 | 20 | 18 | 30 |
| DSH | 5 | 9 | 4 | 8 | 6 | 10 |
| DSHDPCu | 17 | 29 | 11 | 24 | 19 | 37 |
| MST | 4 | 9 | 3 | 8 | 6 | 11 |
| MSTDPCu | 17 | 28 | 10 | 22 | 17 | 35 |
| MSP | 4 | 8 | 3 | 7 | 5 | 12 |
| MSPDPCu | 16 | 28 | 10 | 23 | 18 | 36 |
| Ciproﬂoxacin | 19 | 33 | 13 | 28 | 24 | 42 |

B. subtilis: *Bacillus subtilis*, E. coli: *Escherichia coli*, M. luteus: *Micrococcus luteus*

**Table S3** Results of antifungal bioassay of the prepared Cu(II)-Schiff base amino acid ligands and their ternary complexes in DMSO.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Inhibition zone (mm) | | | | | |
| Comp. | *B. subtilis* | | *E. coli* | | M. *luteus* | |
| Conc. (mg/ml) | 15 | 30 | 15 | 30 | 15 | 30 |
| DST | 6 | 10 | 5 | 8 | 6 | 10 |
| DSTDPCu | 15 | 26 | 8 | 16 | 13 | 20 |
| DSP | 4 | 8 | 3 | 7 | 5 | 8 |
| DSPDPCu | 14 | 25 | 9 | 14 | 12 | 19 |
| DSH | 5 | 9 | 3 | 8 | 5 | 8 |
| DSHDPCu | 13 | 26 | 10 | 14 | 13 | 18 |
| MST | 5 | 10 | 3 | 7 | 5 | 8 |
| MSTDPCu | 15 | 27 | 9 | 14 | 12 | 19 |
| MSP | 3 | 11 | 2 | 6 | 4 | 9 |
| MSPDPCu | 15 | 27 | 9 | 16 | 13 | 19 |
| Amphotricine B | 16 | 29 | 11 | 17 | 14 | 23 |

A. niger: *Asperagillus niger*, C. glabarta: *Candida Glabarta*, S. cerevisiae: *Saccharomyces cerevisiae*



**Fig. S1**. Molecular electronic spectral scans of all ternary Cu(II)-complexes in an ethanolic solution at [DSHDPCu] = [DSPDPCu] = 2.5 × 10-3 mol dm-3, [DSTDPCu] = [MSTDPCu] = 1.0 × 10-3 mol dm-3 and [MSPDPCu] = 1.3 × 10-3 mol dm-3 and 25 ºC.



**Fig. S2**. pH Profile of the ternary Cu(II)-complexes where [MSTDPCu] = [MSPDPCu] = 1 × 10-2 mol dm-3 and [DSPDPCu] = [DSTDPCu] = [DSHDPCu] = 1 × 10-3 mol dm-3 and 25 °C.