

CORRECTION

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Correction to: Copper signalling: causes and consequences

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Following publication of the original article [1], the authors reported an error in Table 3. The correct version of Table 3 is shown below:

The publishers apologise for this error. The original article [1] has been corrected.

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Reference

1. Kardos J, et al. Copper signalling: causes and consequences. *Cell Commun Signal.* 2018;16:71 <https://doi.org/10.1186/s12964-018-0277-3>.

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Table 3 Copper chelating compounds with anticancer activities

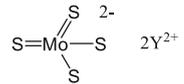
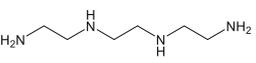
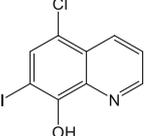
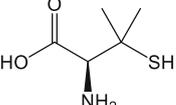
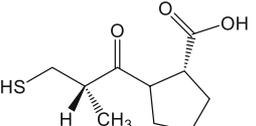
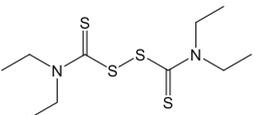
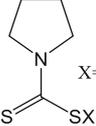
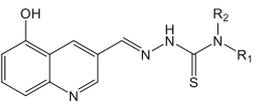
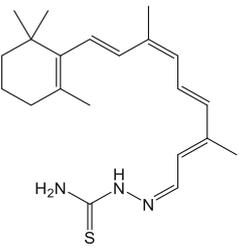
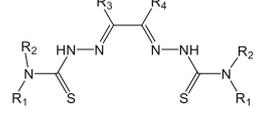
| Compound type (name) | Structure | Chemical name | Ligand type | Application |
|---|--|--|---------------------|---|
| TM |  <p>Y = NH₄⁺, (CH₃)₃N⁺CH₂CH₂OH</p> | Ammonium tetra-thiomolybdate Bis-Choline tetrathio molybdate | Bi-dentate | Breast, prostate, kidney cancer cells [208] |
| Trientine (TETA, Trien) |  | N,N'-Bis(2-aminoethyl) ethane-1,2-diamine | Tetra-dentate | Colorectal cancer cells [366] |
| Hydroxyquinoline (Clioquinol) |  | 5-Chloro-7-iodo-8-hydroxy quinoline | Bi-dentate | AD and human breast cancer cells [309,316] |
| D-pen |  | 3-Mercapto-D-valine | Bi-dentate | Human leukemia and breast cancer cells [319] |
| Captopril |  | D-3-Mercapto-2-methyl-propionyl-L-proline | - | Mammary ductal carcinoma cell line [367,368] |
| Dithiocarbamates | | | | |
| Disulfiram (DSF, Antabuse) |  | 1-(Diethylthio-carbamoyl-disulfanyl)-N,N-diethyl-methane-thioamide | - | Human breast, lung cancer cells [315,369] |
| Pyrrrolidine dithiocarbamate (PDTC) |  <p>X = H, NH₄⁺, metal</p> | Pyrrrolidine-1-carbodithioic acid | Bi-dentate | Human breast cancer cells [344] |
| Thiosemicarbazone | | | | |
| Hydroxyquinoline-carboxaldehyde-Thiosemicarbazone |  <p>R₁=R₂= H HQTS R₁=R₂= Me HQDMTS</p> | 8-Hydroxy-quinoline-2-carbox-aldehyde-thio-semicarbazone | R = H tetra-dentate | Prostate cancer cells [370] |
| Retinal thiosemicarbazone |  | 9-cis-Retinal thiosemi-carbazone | Bi-dentate | Human leukemic cell U937 [317] |
| 1,2-Bis(thiosemi-carbazones) |  <p>H₂gts: glyoxal-bis(thiosemi-carbazone) atsm: diacetyl-bis(4-methylthio-semicarbazone) ptsm: pyruvaldehyde-bis(4-methylthio-semicarbazone)</p> <p>H₂gts: R₁=R₂= H, R₃=R₄= H atsm: R₁= H, R₂= CH₃, R₃=R₄= CH₃ ptsm: R₁= H, R₂= CH₃, R₃=CH₃, R₄= H</p> | | Tetra-dentate | atsm: human colon cancer tumor cells ptsm: Ehrlich ascites and EMT6 tumour cells [371] |

Table 3 Copper chelating compounds with anticancer activities (*Continued*)

| Compound type (name) | Structure | Chemical name | Ligand type | Application |
|--|-----------|--|------------------|---|
| Elesclomol | | N ¹ ,N ³ -Dimethyl-N ¹ ,N ³ -bis(phenyl-carbonothioyl)propanedihydrazide | Tetra-dentate | Metastatic melanoma cells [320,331] |
| Schiff-bases | | | | |
| Salicylaldehyde-benzoylhydrazone (SBH) | | N ⁴ -[(2-Hydroxyphenyl) methylidene] benzohydrazide | Bi-dentate [372] | Human adenocarcinoma cell line [373] |
| Salicylaldehyde-pyrazole-hydrazone (SPH) | | (E)- N ⁴ -(2-Hydroxy-benzylidene)-1-benzyl-3-phenyl-1H-pyrazole-5-carbohydrazide | – | Lung carcinoma cells [321] |
| Pyridine-carboxaldehyde-phenylpyrimidyl-hydrazone (Pyimpy) | | 1-Phenyl-1-(pyridin-2-yl)-2-(pyridin-2-yl)methylene)hydrazine | Tri-dentate | Rat breast tumor cells [322] |
| Hydroxy naphthaldehyde imine (HL) | | 1-(((2-(2-Hydroxy-propyl)amino) ethyl)imino) methyl) naphthalene-2-ol) | Tri-dentate | Human cervical and liver hepatocellular carcinoma cells [318] |