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Group 11 metal complexes of organoselenium ligands. Synthesis, structure and specific properties.

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Organoselenium compounds continue to attract a significant interest as valuable candidates in medicinal chemistry, catalysis and organic synthesis, or as key species for optoelectronic devices. A special attention was paid during last years to derivatives bearing organic groups with nitrogen or oxygen donor atoms, showing an increased thermal and hydrolytic stability and significantly enhanced specific properties.

Our recent studies were focused on new classes of homo- and heteroleptic diorganoselenium(II) compounds bearing organic groups with N or O donor atoms, as well as on their coordination behaviour towards late *d* metals.

We report here about compounds of type R^1R^2Se , where $R^1, R^2 = 2-XC_6H_4CH_2$ ($X = Br, Me$), $2-(R_2NCH_2)C_6H_4$ [$R = Me, Et$; $R_2 = (CH_2CH_2)_2O$], CH_2CH_2pz ($pz = pyrazole$), CH_2phtz ($phtz = phenylthiazole$), as well as upon the pyridine based derivatives $2,6-[[2'-(R_2NCH_2)C_6H_4]SeCH_2]_2C_5H_3N$ ($R = Me, Et$).

Their coordination behavior towards group 11 metals is discussed. Selected compounds were investigated for their biological properties, e.g. antiproliferative or antioxidant activity, as appropriate. Optical properties of selected metal complexes and of the corresponding free ligands are also presented.