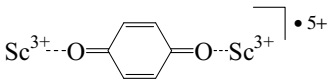
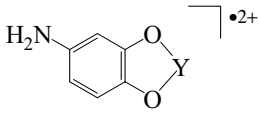
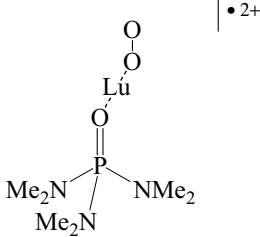
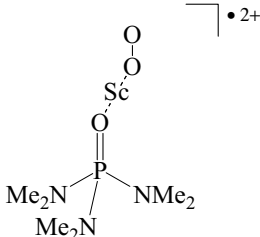
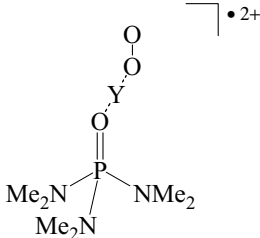
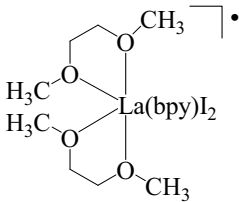
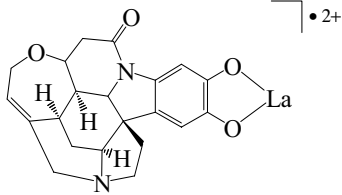
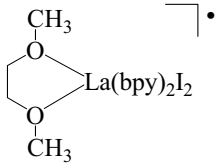
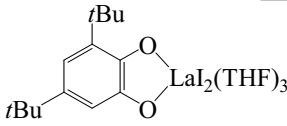
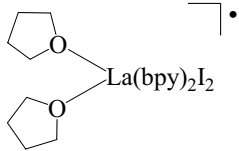


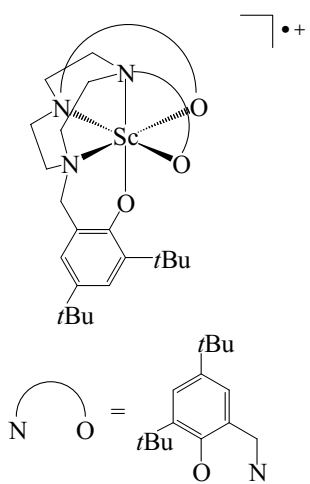
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
-----------	---	--	---------------------

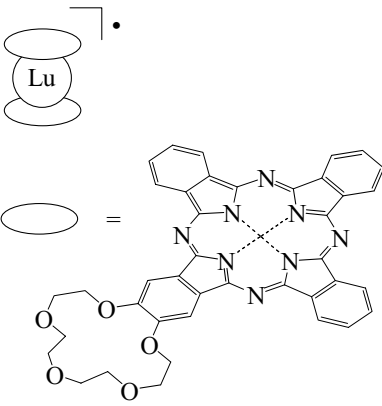
3.4 Complexes of group 3 (Sc, Y, La), lanthanides and actinides

[EuO ₂] ^{•2+}	chemical reaction acetonitrile ESR / 143	<i>g</i> _{zz} = 2.0362	00Fuk
[LaO ₂] ^{•2+}	chemical reaction acetonitrile ESR / 143	<i>g</i> _{zz} = 2.0365	00Fuk
[LuO ₂] ^{•2+}	chemical reaction acetonitrile ESR / 143	<i>g</i> _{zz} = 2.0358	00Fuk
[O ₂ Sc] ^{•2+}	chemical reaction acetonitrile ESR / 143 irradiation propionitrile ESR / < 243	<i>g</i> _{zz} = 2.0304 ⁴⁵ Sc: 0.426	00Fuk 99Fuk
[O ₂ Y] ^{•2+}	chemical reaction acetonitrile ESR / 143	<i>g</i> _{zz} = 2.0349	00Fuk
[O ₂ Yb] ^{•2+}	chemical reaction acetonitrile ESR / 143	<i>g</i> _{zz} = 2.0358	00Fuk
[C ₆ H ₄ O ₂ Sc ₂] ^{•5+} 	photoinduced electron transfer propionitrile ESR / 203	2.0034 ⁴⁵ Sc: 0.115 H: 0.115	97Yas

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_6\text{H}_5\text{NO}_2\text{Y}]^{\bullet 2+}$ 	chemical reaction water, pH 6.6 ESR / 294	2.00349 ^{89}Y : 0.047 N: 0.373 H(3): 0.111 H(6): 0.047 H(5): 0.502 H(NH): 0.326 H(NH ¹): 0.341	88Pra
$[\text{C}_6\text{H}_{18}\text{LuN}_3\text{O}_3\text{P}]^{\bullet 2+}$ 	irradiation propionitrile ESR / 298	2.0218 $^{175,176}\text{Lu}$: 0.858	99Fuk
$[\text{C}_6\text{H}_{18}\text{N}_3\text{O}_3\text{PSc}]^{\bullet 2+}$ 	irradiation propionitrile ESR / 298 propionitrile ESR / 338 propionitrile ESR / 243	2.0165 ^{45}Sc : 0.382 ^{17}O : 2.1 ^{17}O : 1.4 2.0163 ^{45}Sc : 0.388 2.0168 ^{45}Sc : 0.377	99Fuk
$[\text{C}_6\text{H}_{18}\text{N}_3\text{O}_3\text{PY}]^{\bullet 2+}$ 	irradiation propionitrile ESR / 298	2.0202	99Fuk

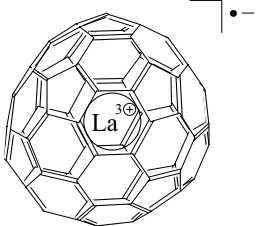
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{18}H_{28}I_2LaN_2O_4]^\bullet$ 	chemical reaction THF ESR / 293 IR spectroscopy	2.0015 ^{139}La : 0.7 $N(2 N)$: 0.26 $H(2 H)$: 0.26	96Boc1
$[C_{21}H_{22}LaN_2O_4]^{\bullet 2+}$ 	chemical reduction dimethylformamide ESR / 295 HMO calculations	2.0034 ^{139}La : 0.18	92Boc1
$[C_{24}H_{26}I_2LaN_4O_2]^\bullet$ 	chemical reaction 1,2-dimethoxyethane ESR / 293 crystal structure, IR spectroscopy, susceptibility	2.0031 ^{139}La : 0.74	96Boc1
$[C_{26}H_{44}I_2LaO_5]^\bullet$ 	chemical reaction THF ESR / 293 IR spectroscopy, susceptibility	2.0030 ^{139}La : 0.36 $H(1 H)$: 0.36	95Fed
$[C_{28}H_{32}I_2LaN_2O_2]^\bullet$ 	chemical reaction THF ESR / 293 THF ESR / 150 solid (after heating) ESR / 293 IR spectroscopy	2.0009 ^{139}La : 0.59 $N(4 N)$: 0.13 $H(4 H)$: 0.13 2.0030 ^{139}La : 0.87 g_1 : 2.0060 g_2 : 2.0028 g_3 : 2.004	96Boc1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{51}H_{78}ScN_3O_3]^{\bullet+}$ 	electrochemically generated acetonitrile ESR / 298 benzyl-deuterated (D_6)	2.0041 ^{45}Sc : 0.117 $H(3\ H)$: 0.207 ^{45}Sc : 0.117 $D(3\ D)$: 0.032	97Ada
$[C_{64}H_{32}EuN_{16}]^{\bullet}$ $[Eu(Pc)_2]^{\bullet}$	electrolysis <i>o</i> -dichlorobenzene ESR / 123 UV-VIS spectroscopy	2.0669	97Sho
$[C_{64}H_{32}LuN_{16}]^{\bullet}$ $[Lu(Pc)_2]^{\bullet}$	electrolysis <i>o</i> -dichlorobenzene ESR / 123 UV-VIS spectroscopy	2.0010	97Sho
$[C_{64}H_{32}N_{16}Th]^{\bullet+}$ $[Th(Pc)_2]^{\bullet+}$	chemical oxidation solid state, dichloromethane or pyridine ESR / 110 electrochemistry, UV-VIS spectroscopy	2.003	93Kad
$[C_{68}H_{60}N_{12}Th]^{\bullet+}$ $[Th(OEP)(Pc)]^{\bullet+}$ (continued)	chemical oxidation solid state, CH_2Cl_2 or pyridine ESR / 110	2.003	93Kad

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_{68}\text{H}_{60}\text{N}_{12}\text{Th}]^{\bullet+}$ (<i>continued</i>)	dichloromethane ESR / 110 pyridine ESR / 110 electrochemistry, UV-VIS spectroscopy	2.002 $D = 38.8 \times 10^4 \text{ cm}^{-1}$ triplet state through aggregation 2.002 $D = 37.5 \times 10^4 \text{ cm}^{-1}$ triplet state through aggregation	
$[\text{C}_{72}\text{H}_{46}\text{LuN}_{16}\text{O}_8]^{\bullet}$ 	chemical reaction chloroform ESR / 77 chloroform / methanol 2:1; potassium acetate ESR / 77	2.0024 $D = 27 \times 10^4 \text{ cm}^{-1}$ triplet state through aggregation	98Ish
$[\text{C}_{72}\text{H}_{88}\text{EuN}_8]^{\bullet}$ $[\text{Eu}(\text{OEP})_2]^{\bullet}$	chemical reaction toluene ESR / 200–20 crystal structure, magnetic data, UV-VIS, mass and NMR spectroscopy	2.0 unresolved hfs observable at 58 K	88Buc2
$[\text{C}_{72}\text{H}_{88}\text{LaN}_8]^{\bullet}$ $[\text{La}(\text{OEP})_2]^{\bullet}$	chemical reaction toluene ESR / 260	2.000(9) ^{139}La : 0.078	92Buc
$[\text{C}_{72}\text{H}_{88}\text{LuN}_8]^{\bullet}$ $[\text{Lu}(\text{OEP})_2]^{\bullet}$	chemical reaction toluene ESR / 298	2.0017(8)	92Buc

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_{72}\text{H}_{88}\text{N}_8\text{Th}]^{\bullet+}$ $[\text{Th}(\text{OEP})_2]^{\bullet+}$	chemical oxidation solid state, dichloromethane or pyridine ESR / 110 electrochemistry, UV-VIS spectroscopy	2.003	93Kad
$[\text{C}_{72}\text{H}_{88}\text{N}_8\text{Y}]^\bullet$ $[\text{Y}(\text{OEP})_2]^\bullet$	chemical reaction toluene ESR / 290–4.2 ENDOR UV-VIS, mass and NMR spectroscopy	2.002(4) H(CH ₂): 0.45 MHz H(CH): 2.64 MHz broad feature at 1.1 to 2 MHz (⁸⁹ Y ?)	88Buc1
$[\text{C}_{76}\text{H}_{44}\text{N}_{12}\text{Th}]^{\bullet+}$ $[\text{Th}(\text{TPP})(\text{Pc})]^{\bullet+}$	chemical oxidation solid state, dichloromethane or pyridine ESR / 110 dichloromethane ESR / 110 electrochemistry, UV-VIS spectroscopy	2.003 2.003 $D = 36.5 \times 10^4 \text{ cm}^{-1}$ triplet state through aggregation	93Kad
$[\text{C}_{80}\text{H}_{72}\text{N}_8\text{Th}]^{\bullet+}$ $[\text{Th}(\text{OEP})(\text{TPP})]^{\bullet+}$	chemical oxidation solid state, dichloromethane or pyridine ESR / 110 electrochemistry, UV-VIS spectroscopy chemical oxidation solid state ESR / 298	2.002 2.011	93Kad 94Gir

(continued)

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_{80}\text{H}_{72}\text{N}_8\text{Th}]^{\bullet+}$ (<i>continued</i>)	solid state ESR / 110 electrochemistry, UV-VIS, IR and NMR spectroscopy, susceptibility	2.010	
$[\text{C}_{82}\text{La}]^{\bullet 2+}$ 	chemical reaction 1,1,2,2-tetrachloroethane ESR / 293	2.0010 ^{139}La : 0.125	92Joh
$[\text{C}_{88}\text{H}_{56}\text{N}_8\text{Th}]^{\bullet+}$ $[\text{Th}(\text{TPP})_2]^{\bullet+}$	chemical oxidation solid state, dichloromethane or pyridine ESR / 110 dichloromethane or pyridine ESR / 110 electrochemistry, UV-VIS spectroscopy chemical oxidation solid state ESR / 298 solid state ESR / 80 crystal structure, electrochemistry, UV-VIS, IR and NMR spectroscopy, susceptibility	2.003 2.001 2.0029 2.0016	93Kad 94Gir