

SUPPLEMENTARY MATERIAL 3
METAL COMPLEXES OF ISATIN AND DERIVATIVES

Ligand	Second ligand	Metal	Author	Reference
Bis(isatin-3-imines)	-	Ni, Cu, Co, Co	Black, D. St. C.	Ger. Offen. 2,533,808 04 Mar 1976, 53 p. (CA 85:3431b)
Isatin	Triphenylphosphine	Fe, Co, Ni	Al-Resayes, S.I.	<i>Spectrosc. Lett.</i> 1999 , 32, 315.
Isatin	β -Alanine Glycine 8-Hydroxyquinoline Isonitrosoacetophenone 2-Nitrophenol 1-Nitroso.-naphtol Picolinic acid	Li, Na, K	Banerjee, A.K., Prakash, D., Roy, S.K.	<i>J. Indian Chem. Soc.</i> 1978 , 55, 8.
Isatin	Triphenylphosphine	Pt	Clarke, D.A., Hunt, M.M., Kemmitt, R.D.W.	<i>J. Organomet. Chem.</i> 1979 , 175, 303.
Isatin	-	Ti, Sn	Deshpande, S.G., Jain, S.C.	<i>Indian J. Chem., Sect A</i> 1990 , 29A, 1215.
Isatin	Triphenylphosphine	Pt, Pd	Law, J.M., Henderson, W., Nicholson, B.K.	<i>J. Chem. Soc. Dalton Trans.</i> 1997 , 4587.
Isatin	Triphenylphosphine	Au	Lenz, A., Sunkel, K., Beck, W.	<i>Z. Naturforsch. B</i> 1996 , 51, 1639.
Isatin	Ph	As	Raj, P., Ranjan, A., Saxena, A.K.	<i>Indian J. Chem Sect. A</i> 1983 , 22A, 120.
Isatin	Ph	As	Raj, P., Aggarwal, A.K., Misra, N.	<i>Polyhedron</i> 1989 , 8, 581.

Isatin	Glycine, alanine, valine, ethylenediamine, bipyridyl	Co, Ni, Cu, Zn	Reddy, C.V.R., Reddy, M.G.R.	<i>J. Chem. Eng. Data</i> 1994 , 39, 723.
Isatin	Thioglycolic acid	Co, Ni, Zn	Reddy, C.V.R., Reddy, M.G.R.	<i>J. Indian Chem Soc.</i> 1995 , 72, 689.
Isatin	Glycine, alanine, valine, ethylenediamine, bipyridyl, oxalic acid, cathecol	Fe	Reddy, C.V.R., Reddy, M.G.R.	<i>Indian J. Chem. Sect. A</i> 1994 , 33, 233.
Isatin	-	Ph ₄ Sb	Singhal, K., Raj, P.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1993 , 23, 1011.
Isatin (ketyl radical)	carbonyl	Mn	Alberti, A., Camaggi, C.M.	<i>J. Organomet. Chem.</i> 1978 , 161, C63.
Isatin-3-carbohydrazide		Mn, Co, Ni, Cu, Zn, Cd, UO ₂	El-Reash, G.M.A., Ibrahim, K.M., Taha, F.I., Feteih, N.A.	<i>Bull. Soc. Chim. Fr.</i> 1991 , 846.
Isatin-3-dithiocarbazone	-	Co, Ni, Cd, Zn, Hg	El-Reash, G.M.A., Taha, F., Shallaby, A.M., El-Gamal, O.A.	<i>Indian J. Chem., Sect A</i> 1991 , 30A, 286.
Isatin-3-dithiocarbazone	-	Ni	Hassaan, A.M.A.	<i>Transition Met. Chem.</i> 1990 , 15, 283.
Isatin-3-hydrazones	-	Co, Cu, Fe, Mn, Ni, Zn	Atre, V., Raju, V.J.T., Ratnam, K.J., Ganorkar, M.C.	<i>Indian J. Chem., Sect A</i> 1984 , 23A, 691.
Isatin-3-hydrazones	-	Zn, Cd, Hg	Bahnasawy, R.M., Shereafy, E.E., Kashar, T.I.	<i>Egypt. J. Chem.</i> 1994 , 37, 333.

Isatin-3-hydrazones	-	Cr, Mn, Fe, Co, Ni, Cu	Bhardwaj, S., Ansari, M.N., Jain, M.C.	<i>Indian J. Chem., Sect A</i> 1989 , 28A, 81.
Isatin-3-hydrazones	-	Cu	Coda, A., Gatti, G., Coda, A.C., Desimoni, G., Riguetti, P.P., Tacconi, G.	<i>Gazz. Chim. Ital.</i> 1985 , 115, 549.
Isatin-3-hydrazones	-	Lanthanides	Dixit, R., Garg, B.S.	<i>Monatsch. Chem.</i> 1987 , 118, 1237.
Isatin-3-hydrazones	-	Zn, Cd, Hg	El-Bahnasawy, R.M., El-Shereafy, E., Kashar, T.I.	<i>J. Therm. Anal.</i> 1993 , 39, 65.
Isatin-3-hydrazones	-	Co, Ni, Cu	Garg, B.S., Singh, P.K., Garg, S.K.	<i>Indian J. Chem. Sect.A</i> 1991 , 30A, 979.
Isatin-3-hydrazones	-	Mn	Garg, B.S., Singh, P.K., Garg, S.K.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1992 , 22, 1517.
Isatin-3-hydrazones	-	Ni	Hassaan, A.M.A.	<i>Transition Met. Chem.</i> 1990 , 15, 283.
Isatin-3-hydrazones	-	Cu, Ni	Khulbe, R.C., Bhoon, Y.K., Singh, R.P.	<i>J. Indian Chem. Soc.</i> 1981 , 43, 840.
Isatin-3-hydrazones	-	Co, Ni, Cu	Khulbe, R.C., Singh, R.P., Bhoon, Y.K.	<i>Transit. Met. Chem.</i> 1983 , 8, 59.
Isatin-3-hydrazones	-	Co, Cu, Ni, Mn, Zn	Lakshmi, V.V., Sridhar, P., Polasa, H.	<i>Indian J. Pharm. Sci.</i> 1985 , 47, 202.
Isatin-3-hydrazones	-	Cr	Mostafa, M.A.	<i>Analisis</i> 1991 , 19, 363.
Isatin-3-hydrazones	-	Zn, Cu, Ni	Radovanovic, B.C.S., Andjekovic, S.S.	<i>J. Serb. Chem. Soc.</i> 1998 , 63, 379.
Isatin-3-hydrazones	-	Zn, Cu, Ni	Radovanovic, B.C.S., Andjekovic, S.S.	<i>Spectrosc. Lett.</i> 1998 , 31, 63.

Isatin-3-hydrazones	-	Co, Cu, Ni, Pd, Pt, Zn	Samus, N.M., Shlyakhov, E.N., Ketrush, P.M., Mianperem, T., Burdenko, T.A., Burlaku, N.Y., Osadchaya, E.K., Tsapkov, V.I.	<i>Khim.-Farm. Zh.</i> 1990 , 24, 58.
Isatin-3-hydrazones	-	Cu, Ni	Singh, N., Hingorani, S., Srivastava, J., Puri, V., Agarwala, B.V.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1992 , 22, 1283.
Isatin-3-hydrazones	-	Cu, Co, Ni	Tsapkov, V.I., D'erd, P., Samus, N.M.	<i>Russ. J. Gen. Chem.</i> 1993 , 63, 841.
Isatin-3-hydrazones	-	Cu, Co, Ni, Zn	Tsapkov, V.I., Mianperem, T., Samus, N.M.	<i>Russ. J. Gen. Chem.</i> 1993 , 63, 1425.
Isatin-3-hydrazones	-	Mn, Co, Ni, Zn	Tsapkov, V.I., Mianperem, T., Samus, N.M.	<i>Russ. J. Gen. Chem.</i> 1995 , 65, 320.
Isatin-3-imines	-	Co, Zn	Balakrishnan, K.P., Krishnan, V.	<i>Indian J. Chem. Sect. B</i> 1976 , 16A, 83.
Isatin-3-imines	-	Zn	Haensel, W.	<i>Justus Liebigs Ann. Chem.</i> 1976 , 1380.
Isatin-3-imines	-	Fe	Hassaan, A.M., Soliman, E.M.	<i>Afinidad</i> 1995 , 52, 324.
Isatin-3-imines	-	Ni, Co, Cu, Fe, Zn, Cd, La	Hassaan, A.M., Khalifa, M.A., Shehata, A.K.	<i>Bull. Soc. Chim. Belg.</i> 1995 , 104, 121.
Isatin-3-imines	-	Ni, Co, Cd, Mn	Hassaan, A.M., Taha, F., El-Roudi, A., Quenawy, M.T.A.	<i>J. Indian Chem. Soc.</i> 1996 , 73, 325.
Isatin-3-imines	-	Fe, Co, Ni, Cu	Hassaan, A.M.A.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1990 , 19, 773.
Isatin-3-imines	-	Fe	Hassaan, A.M.A.	<i>J. Chem. Soc. Pak.</i> 1992 , 14, 108.

Isatin-3-imines	-	Ni, Cu, Zn, Pb, UO ₂	Hassaan, A.M.A.	<i>Bull. Soc. Chim. Belg.</i> 1997 , 106, 73.
Isatin-3-imines	-	Ni, Co, Cu, Cr, Zn, Cd	Hassaan, A.M.A.	<i>Indian J. Chem. Sect. A</i> 1997 , 36, 241.
Isatin-3-imines	-	Ni, Co, Cu, Cr, Fe, Mn	Hassaan, A.M.A.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1997 , 27, 835.
Isatin-3-imines	-	Fe, Cr, Al	Hassaan, A.M.A.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1997 , 27, 855.
Isatin-3-imines	-	Ni, Co, Cu, Zn, Pb, UO ₂	Hassaan, A.M.A.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1997 , 27, 921.
Isatin-3-imines	-	Ni	Hassaan, A.M.A.	<i>Transition Met. Chem.</i> 1990 , 15, 283.
Isatin-3-imines	-	Cr, Mn, Co, Ni, Cu, Zn, Cd, Pb	Hassaan, A.M.A., Khalifa, M.A.	<i>Monatsh. Chem.</i> 1993 , 124, 803.
Isatin-3-imines	-	La, Ce, Th, Hg, Ag, UO ₂	Hassaan, A.M.A., Shehata, A.K.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1993 , 23, 815.
Isatin-3-imines	-		Hassaan, A.M.A., AlNasr, A.K.A., Khalifa, M.A.	<i>J. Indian Chem. Soc.</i> 1997 , 74, 496.
Isatin-3-imines	-	Co, Cu, Ni	Hassan, M.K., Ismail, M.I., Khalil, Z.H.	<i>Curr. Sci.</i> 1980 , 49, 935.
Isatin-3-imines	-	Co, Cu, Ni	Hassan, M.K., Ismail, M.I., Khalil, Z.H.	<i>Ann. Chim.</i> 1981 , 71, 337.
Isatin-3-imines	-	UO ₂ , VO, Th, Zn, Cd, Hg, Pb	Khalifa, M.A., Hassaan, A.M.	<i>Indian J. Chem Sect. A</i> 1985 , 34A, 580.
Isatin-3-imines	-	Ni, Co, Cu, Pd, Zn, Cd, Pb	Khalifa, M.A., Hassaan, A.M.	<i>J. Chem. Soc. Pak.</i> 1996 , 18, 115.
Isatin-3-imines	-	Co, Ni, Cu, Zn	Muneer, B., Laxmi, G.V., Seshikala, G.	<i>Proc. Indian Acad. Sci. - Chem. Sci.</i> 1997 , 109, 303.
Isatin-3-imines	H ₂ O	Cu	Samus, N.M., Tsapkov, V.I., Gunawardana, A.C., Kulemu, S.	<i>Sint. Fiz. Khimcheskoe Issled. Koord. Polim. Soedin.</i> 1986 , 8. (CA 107:69544d)

Isatin-3-imines	-	Co, Ni, Cu, Zn	Tsapkov, V.I., Al-Nabgali, N., Stan, V.V., Samus, N.M.	<i>Russ. J. Gen. Chem.</i> 1994 , 64, 1604.
Isatin-3-oxime	-	Co	Peshkova, V.M., Barbalat, Y.A., Polenova, T.V.	<i>Zh. Neorg. Khim.</i> 1976 , 21, 2149.
Isatin-3-semicarbazones	-	Cu	Akinchan, N.T., Akinchan, R., West, D.X., Yang, Y.H.	<i>Transit. Met. Chem.</i> 1994 , 19, 135.
Isatin-3-semicarbazones	-	Cr	Mostafa, MA	<i>Analisis</i> 1991 , 19, 363.
Isatin-3-semicarbazones	-	D-elements	Samus, N.M., Tsapkov, V.I., Zyuong, K.F.	<i>Zh. Neorg. Khim.</i> 1986 , 31, 101.
Isatin-3-semicarbazones	-	UO ₂	Singh, K, Agarwala, B.V., Naganagowda, G.A.	<i>Indian J. Chem Sect. A</i> 1996 , 35A, 66.
Isatin-3-thiosemicarbazone	-	Ni	Hassaan, A.M.A.	<i>Transition Met. Chem.</i> 1990 , 15, 283.
Isatin-3-thiosemicarbazone	-	Cu, Zn	Heinisch, L., Tresselt, D.	<i>Pharmazie</i> 1977 , 32, 582.
Isatin-3-thiosemicarbazones	-	Cu	Bain, G.A., West, D.X., Krejci, J., Valdes Martinez, J., Hernandez Ortega, S., Toscano, R.A.	<i>Polyhedron</i> 1997 , 855.
Isatin-3-thiosemicarbazones	-	Cu	Bhoon, Y.K.	<i>Indian J. Chem., Sect A</i> 1983 , 22A, 430.
Isatin-3-thiosemicarbazones	-	Co, Ni, Cu, Zn, Cd, UO ₂	El-Reash, G.M.A., Khattab, M.A. Elayaan, U.I.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1992 , 22, 1417.
Isatin-3-thiosemicarbazones	-	Co, Ni, Cu, Zn, Hg, Fe	Gupta, R.P., Srivastava, A.K.	<i>Synth. React. Inorganic Met.-Org. Chem.</i> 1985 , 15, 117.

Isatin-3-thiosemicarbazones	-	Ni, Pd, Cu, Cd	Ibrahim, K.M.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1993 , 23, 1351.
Isatin-3-thiosemicarbazones	-	Co, Ni, Cu	Ibrahim, K.M., El-Asmy, A.A., Bekheit, M.M., Mostafa, M.M.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1985 , 15, 1247.
Isatin-3-thiosemicarbazones		Cu	Ivanov, V.E., Tukhomirova, N.G., Tomchin, A.B.	<i>J. Gen. Chem. USSR (Engl. Transl.)</i> 1988 , 58, 2436.
Isatin-3-thiosemicarbazones		Cu	Ivanov, V.E., Tikhomirova, N.G., Tomchin, A.B., Razukrantova, N.V.	<i>Pharm. Chem. J.</i> 1989 , 23, 413.
Isatin-3-thiosemicarbazones	-	Cr	Mostafa, M.A.	<i>Analisis</i> 1991 , 19, 363.
Isatin-3-thiosemicarbazones	-		Osman, M.M., Amer, M.	<i>Egypt. J. Chem.</i> 1983 , 26, 99.
Isatin-3-thiosemicarbazones	-	Co, Ni, Cu	Patel, S.P., Ray, A., Patel, R.P.	<i>Synth. React. Inorg. Met.-Org. Chem.</i> 1987 , 17, 419.
Isatin-3-thiosemicarbazones	-	Bivalent metal ions	Pathak, R.N., Mishra, L.K.	<i>J. Indian Chem. Soc.</i> 1988 , 65, 119.
Isatin-3-thiosemicarbazones		Ni	Rodriguez-Arguelles, M.C., Sanchez, A., Ferrari, M.B., Fava, G.G., Pelizzi, C., Pelosi, G., Albertini, R., Lunghi, P., Pinelli, S.	<i>J. Inorg. Biochem.</i> 1999 , 73, 7.
Isatin-3-thiosemicarbazones	-	Cu	Rohde, W., Shafer, R., Idriss, J., Levinson, W.	<i>Talanta</i> 1979 , 26, 373.

Isatin-3-thiosemicarbazones		Co, Cu, Ni, Cd, Hg, Zn	Shallaby, A.M., El-Reash, G.M.A., Moussa, M.N.H., Khattab, M.A.	<i>Bull. Soc. Chim. Fr.</i> 1989 , 776.
Isatin-3-thiosemicarbazones	-	Zn, Fe, Cu	Stunzi, H.	<i>Aust. J. Chem.</i> 1982 , 35, 1145.
Isatin-3-thiosemicarbazones	-	Cu	Stunzi, H.	<i>Aust. J. Chem.</i> 1981 , 34, 2549.
Isatin-3-thiosemicarbazones	-	Co, Ni, Cu	West, D.X., El-Sawaf, A.K., Bain, G.A.	<i>Transit. Metal Chem.</i> 1998 , 23, 1.