Publications Template

#	Research Title	Field	Abstract	Year of Publication Publishing	Publishing Link "URL"
1	Vanadium improves brain acetylcholinesterase activity on early stage alloxan-diabetic rats	Brain and Diabetes	kinetic parameters of brain membrane-bound and soluble acetylcholinesterase (AChE) forms in alloxaninduced diabetic rats. The diabetic rats were treated with 300 mg/kg sodium orthovanadate orally for 45 days. While diabetes significantly decreased the brain specific activity (Vmax) of AChE soluble form by 42%, it caused a fivefold increase of the Km of the membrane-bound form. Furthermore, the activity of brain glutathione-S-transferase (GST) was significantly decreased and this was associated with a remarkable increase in brain lipid peroxidative parameter, thiobarbituric acid reactive substances (TBARS), as compared to sham control. The alterations of both AChE forms observed in diabetic state could be attributed to hyperglycemia and lipid peroxidation that triggered brain dysfunction by disturbing the neurotransmitter acetylcholine level. Administration of sodium orthovanadate reversed the diabetic conditions by lowering the blood glucose level and normalized the blood HbA1C level. It also normalized the levels of brain AChE, GST and TBARS as compared to diabetic state and control. Therefore, vanadate administration could protect against direct action of lipid peroxidation on brain AChE and in this way, it might be useful in the prevention of cholinergic neural dysfunction, which is one of the major complications in diabetes	**2008**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Vanadium+improves+brain+acetylcholinesterase+activity+on+early+stage+alloxan-diabetic+rats.&btnG=

2	**Propolis alleviates aluminium-induced lipid peroxidation and biochemical parameters in male rats**	**Aluminium** Toxicity	Aluminium is present in many manufactured foods and medicines and is also added to drinking water during purification purposes. Therefore, the present experiment was undertaken to determine the effectiveness of propolis in alleviating the toxicity of aluminium chloride (AlCl3) on biochemical parameters, antioxidant enzymes and lipid peroxidation of male Wistar Albino rats. Animals were assigned to 1 of 4 groups: control; 34 mg AlCl3/kg bw; 50 mg propolis/kg bw; AlCl3 (34 mg/kg bw) plus propolis (50 mg/kg bw), respectively. Rats were orally administered their respective doses daily for 70 days. The levels of thiobarbituric acid reactive substances (TBARS) was increased, and the activities of glutathione S-transferase, superoxide dismutase, catalase and glutathione peroxidase were decreased in liver, kidney and brain of rats treated with AlCl3. While, TBARS was decreased and the antioxidant enzymes were increased in rats treated with propolis alone. Plasma transaminases, lactate dehydrogenase, glucose, urea, creatinine, bilirubin, total lipid, cholesterol, triglyceride and LDL-c were increased, while total protein, albumin and high HDL-c were decreased due to AlCl3 administration. The presence of propolis with AlCl3 alleviated its toxic effects in rats treated with AlCl3. It can be concluded that propolis has beneficial influences and could be able to antagonize AlCl3 toxicity.	**2009**	https://pubmed.ncbi.nlm.nih.gov/19425229/
3	Efficacy of Natural Extracts of Ginkgo Biloba and Berberry and a Synthetic Derivative of Genistein (ipriflavone), as Acetylcholinester	Ginkgo Biloba, Berberry and Genistein Effect on Brain	Inhibition of acetylcholinesterase (AChE.3.1.1.7), the key enzyme in the breakdown of acetylcholine, is considered as a promising strategy for the treatment of neurological disorders such as Alzheimer's disease (AD). The brain AChE from female Egyptian Mediterranean buffalo (Bas Buballus) was purified by ammonium sulphate precipitation, Sephadex G-25, Sephadex G-100 and DEAE-cellulose. Finally, Polyacrylamide gel electrophoresis was carried out to clarify the enzyme purity. The effect of the natural extracts of Ginkgo biloba and berberry and a synthetic derivative of genistein; ipriflavone on the	**2010**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Efficacy+of++++++natural+extracts+of+Ginkgo+biloba+and++++berberry+and+a++++Synthetic+++++derivative+of+genistein+%28ipriflavone%29%2C+as+cetylcholine

	ase Inhibitors, Comparative Study with Aricept® effect		activity of pure AChE were carried out in an in vitro study. Ginkgo biloba ands berberry extracts inhibited AChE. The increase in the Km-values with no differences in the Vmaxvalues pointed toward competitive type of inhibition. On the other hand, ipriflavone could be accounted as non-competitive inhibitor to AChE, where it caused three fold decrease in Vmax – value and did not alter the Km-value. Moreover, AChE is inhibited in a mixed type of inhibition by Aricept ®. Interestingly, the inhibitory per cent of ipriflavone nearly equal to that of Aricept ® (70%). It is evident from the present study that ipriflavone is the strongest inhibitor		sterase++++inhibitors%2C+comparative+study+with+Aricept&btnG=
4	Toxic effects of lead exposure on the brain of rats: involvement of oxidative stress, inflammation, acetylcholinesterase and the beneficial role of flaxseed extract.	Flaxseed extract against toxicity lead to brain	The current study was carried out to investigate the effects of low level lead (Pb) exposure on brain tissue antioxidant enzymes activities and acetylcholinesterase (AChE), inflammatory markers (nitrites (NO) and TNF-α), and lipid profile. Furthermore, the possible effects of flaxseed extract to reverse PB-induced toxicity were examined. Female Sprague-Dawley rats were exposed to Pb (200 mg L^{-1} in drinking water) for three weeks followed by 21 days of orally administrated flaxseed extract (300 mg kg^{-1}). AChE activity increased by 64% and a significant decrease in glutathione (GSH) levels, total antioxidants capacity, glutathione-S-transferase (GST), superoxide dismutase (SOD), and catalase (CAT) activities after Pb exposure. Moreover, NO and α-TNF were increased by 166.5% and 400%, respectively. Finally, Pb exposure increased the brain cholesterol and triglycerides levels. Chronic treatment with flaxseed significantly attenuated cholinergic dysfunction, oxidative stress, and inflammation in the brain after a three week treatment period. Data showed the involvement of factors such as oxidative stress, inflammation, and high expression of AChE activity in Pb-induced neurotoxicity, and showed that flaxseed prevented these adverse effects.	**2010**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Toxic+effects+of+lead+exposure+on+the+brain+of+rats%3A++++involvement+of+oxidative+stress%2C+inflammation%2C+acetylcholinesterase++++++and+the+beneficial+role+of+flaxseed+extract.&btnG=

5	Ameliorated effects of garlic (*Allium sativum*) on blood biomarkers of subchronic acrylamide hepatotoxicity and brain toxicity in rats	Garlic effect against acrylamide Toxicty	Acrylamide (ACR) exerts its toxicity through stimulation of the oxidative stress; yet, its effect on neurotransmitter catabolic enzymes has not been elucidated. We investigated the effects of ACR exposure on brain and hepatic tissues antioxidant enzymes activities and different markers such as, acetylcholinesterase (AChE), nitric oxide (NO), monoamine oxidase (MAO), and lipid profile, and to evaluate the protective effects of garlic against ACR toxicity. Male Sprague-Dawley rats were exposed to ACR (1 mg kg^{-1} body weight) with or without diet containing 1.5% of garlic powder for 40 days. ACR administration showed a decrease in AChE activity associated with an increase in MAO activity in both brain and hepatic tissues. In addition, ACR administration increased the lipid peroxidation and NO levels of both tissues while decreased the activities of glutathione (GSH), superoxide dismutase, and glutathione-S-transferase (GST). On the other hand, the activities of glutathione peroxidase (GPx) and catalase activities increased as a consequence of GSH depletion after ACR exposure. Finally, ACR exposure increased the brain and liver lipid profile of cholesterol, triglycerides and total lipid, while phospholipids level was decreased. Coadministration of garlic powder with ACR significantly attenuated oxidative stress, MAO activity, and inflammation in brain and hepatic tissues but did not ameliorate AChE activity. In conclusion, our results emphasized the role of garlic as a potential adjuvant therapy to prevent ACR neurotoxicity and hepatotoxicity.	**2010**	https://www.tandfonline.com/doi/abs/10.1080/02772240903348187
6	Non-alcoholic fatty liver induces insulin resistance and metabolic disorders with	Fatty liver andinsulin resistance	In the present study we investigated the effect of the non-alcoholic fatty liver disease (NAFLD) on the alterations in the activity of neurotransmitters catabolizing enzymes and energy catabolising enzymes, prooxidants, endogenous antioxidants and proinflammatory cytokines in brain tissue of NAFLD rats. Rats were intraperitonealy injected with CCl4 solution at a dose of (0.021 mole/Kg, 20 µL, body	**2011**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Non-alcoholic+fatty+liver+induces+insulin+resistance++++and+metabolic+disord

	development of brain damage and dysfunction.		weight) three times weekly for four weeks. Acetylcholine esterase (AChE), monoamine oxidase (MAO), prooxidant/ antioxidants status, ATPase, lipid profile and glucose level were estimated spectrophotometrically while inflammatory markers; interleukin 6 and tumor necrosis factor alpha (IL6 and TNF-α) and insulin were assessed by ELISA technique. Our results showed that the induced NAFLD and insulin resistance (IR) were accompanied with hyperglycemia and hyperlipidemia and lowered brain glucose level with elevated ATPase activity, prooxidant status (TBARS level, xanthine oxidase and cytochrome 2E1 activities), and inflammatory markers. Through the induction period AChE activity was significantly increased compared to control in blood, liver and brain tissues. Also, MAO activity was significantly increased in both brain and liver tissue but decreased in serum compared with control. These biochemical data were supported with pathophysiological analysis that showed severe neurodegeneration, pyknosis acuolations and cavitations. These observations warrant the reassessment of the conventional concept that the NAFLD with IR progression may induce disturbances in activities of neurotransmitters catabolising enzymes and energy production accompanied with oxidative stress and metabolic disorders, acting as relative risk factors for brain dysfunction and damage with the development of age-associated neurodegenerative diseases such as Alzheimer's disease.		ers+with+development+of+brain+damage+and++++dysfunction.&btnG=
7	Deleterious Effects of cypermethrin on liver and kidney: Protective role of sesame oil.	Protective role of sesame oil against cypermethrin on liver and kidney	The involvement of reactive oxygen species (ROS) has been implicated in the toxicity of various pesticides. Our study was designed to investigate the induction of oxidative stress by cypermethrin; a Type II pyrethroid in rat liver and kidney. In addition, the protective role of sesame oil against the toxicity of cypermethrin was investigated. Animals were divided into four equal groups; the first group used as control while groups 2, 3 and 4 were treated with	**2012**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Deleterious+effects+of++++cypermethrin+on+rat+liver+and+kidney%3A+Protective+++++r

			sesame oil (5 mL/kg b.w), cypermethrin (12 mg/kg b.w) and the combination of both sesame oil (5 mL/kg b.w) plus cypermethrin (12 mg/kg b.w), respectively. Rats were daily administered with their respective doses for 30 days by gavage. Repeated oral administration of cypermethrin was found to reduce the level of glutathione (GSH) and the activities of the antioxidant enzymes. While, the level of TBARS was elevated indicating the presence of oxidative stress. The activities of LDH, AST and ALT were decreased in the liver extract while increased in the plasma of the cypermethrin-treated group. Also, the levels of urea and creatinine were significantly increased after treatment with cypermethrin. Liver and kidney injury was confirmed by the histological changes. In conclusion, the administration of sesame oil provided significant protection against cypermethrin-induced oxidative stress, biochemical changes, histopathological damage and genomic DNA fragmentation.		ole+of+sesame+oil.&btnG=
8	Oxidative stress (OS) would induce idiopathic infertility in Egyptian males. African	Effect of Oxidative stress on Fertility	The most common cause of male infertility is idiopathic. Oxidative stress (OS) would play a vital role in etiology of idiopathic male infertility because of its targeting to spermatozoa plasma membrane rich in polyunsaturated fatty acids. To examine OS effect on Egyptian men fertility, sperm samples were obtained from infertile idiopathic patients (25 to 35 years old). The samples were categorized into 4 groups: fertile group (n = 20); azospermia's patients (n = 20); normospermic patients (n = 20) and oligospermic patients (n = 40). Induced OS was tracked by measuring the alteration in prooxidant level (TBARS) as well as activities of antioxidant enzymes superoxide dismutase (SOD), glutathione-Stransferase (GST), glutathione peroxide (GPX) and reduced glutathione (GSH). The TBARS levels were significantly high in infertile patients (within a range of 33.89 to 81.77%) compared to the healthy individuals. GST, SOD and GSH were significantly low in oligospermic patients by 33.33, 39.655 and	**2012**	https://www.ajol.info/index.php/ajb/article/view/100310

			53.16%, respectively while GPX was higher by 87.5%. In azospermic patients, GSH and SOD activities were lower by 50% while GPX reached its maximum activity (93.75%). For normospermic patients with high immotile sperm, SOD activity was higher by 62.06% while both GSH and GPX were lower by 36.54 and 70.31%, respectively compared to the healthy individuals. Our results obviously emphasize the association of OS level in seminal plasma with the incidence and progression of the idiopathic infertility in infertile patients. Thus, seminal reactive oxygen species (ROS) would be used as a specific and sensitive biomarker for idiopathic male infertility.		
9	Cypermethrin induced damage in genomic DNA and histopathological changes in brain and haematotoxicity in rats: The protective effect of sesame oil.	The Protective effect of sesame oil against Cypermethrin on brain	The protective effect of sesame oil against cypermethrin-induced brain toxicity was studied. Female rats were orally treated with cypermethrin, sesame oil and their combination for 30 consecutive days. The results showed that cypermethrin increased thiobarbituric acid-reactive substances (TBARS), and decreased glutathione (GSH) and the activities of the antioxidant enzymes. Brain injury was confirmed by histopathological changes and DNA damage. Also, the reduction in the activities of acetylcholinesterase and monoamine oxidase (AChE & MAO), total protein, albumin and body weight, and the induction in triacylglycerol and cholesterol have been observed due to cypermethrin toxicity. Animals treated with sesame oil and cypermethrin together showed that brain TBARS and plasma triacylglycerol and cholesterol returned to the control level which indicating a protective effect of sesame oil. Also, sesame oil was able to attenuate the decrease in total protein, albumin, triacylglycerol and cholesterol, GSH, AChE and antioxidant enzymes induced by cypermethrin. In addition, sesame oil protected the brain histological changes and fragmentation of genomic DNA in animals treated with cypermethrin. The present results showed a protective effect of sesame oil against the cypermethrin induced brain toxicity and this	**2013**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Cypermethrin+induced+damage+in+genomic+DNA+and+histopathological+++++changes+in+brain+and+haematotoxicity+in+rats%3A+The+protective+effect+of+++++sesame+oil.++&btnG=

			could be associated mainly with the attenuation of the oxidative stress and the preservation in antioxidant enzymes.		
10	Cisplatin-induced renal toxicity via tumor necrosis factor-α, interleukin 6, tumor suppressor P53, DNA damage, xanthine oxidase, histological changes, oxidative stress and nitric oxide in rats: Protective effect of ginseng	Protective effect of ginseng against renal toxicity induced by cisplatin	Cisplatin is an effective chemotherapeutic agent successfully used in the treatment of a wide range of solid tumors, while its usage is limited due to its nephrotoxicity. The present study was undertaken to examine the effectiveness of ginseng to ameliorate the renal nephrotoxicity, damage in kidney genomic DNA, tumor necrosis factor-α, interleukin 6, tumor suppressor P53, histological changes and oxidative stress induced by cisplatin in rats. Cisplatin caused renal damage, including DNA fragmentation, upregulates gene expression of tumor suppressor protein p53 and tumor necrosis factor-α and IL-6. Cisplatin increased the levels of kidney TBARS, xanthine oxidase, nitric oxide, serum urea and creatinine. Cisplatin decreased the activities of antioxidant enzymes (GST, GPX, CAT and SOD), ATPase and the levels of GSH. A microscopic examination showed that cisplatin caused kidney damage including vacuolization, severe necrosis and degenerative changes. Ginseng co-treatment with cisplatin reduced its renal damage, oxidative stress, DNA fragmentation and induced DNA repair processes. Also, ginseng diminished p53 activation and improved renal cell apoptosis and nephrotoxicity. It can be concluded that, the protective effects of ginseng against cisplatin induced-renal damage was associated with the attenuation of oxidative stress and the preservation of antioxidant enzymes.	**2015**	https://www.sciencedirect.com/science/article/abs/pii/S0278691515000198
11	Synthesis, characterization and antioxidant evaluation of metal	Synthesis, characterization and antioxidant of some metal	The synthesis and characterization of *N*,*N*′-bis (1-naphthaldimine)-*p*-oxydianiline, H_2L, and its Zn(II), Cu(II), Ni(II) and Co(II) complexes are reported. Single crystal X-ray structural analysis showed that H_2L consists of two tautomers where the central diphenylether unit is flanked by either two ketoamino forms or by one ketoamino and one enolimino form. Physico-chemical data revealed the formation of non-	**2015**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Synthesis%2C+characterization+and+antioxidant+evaluation+of+

	complexes derived from a dianil ligand with a flexible linkage: anomalous magnetic behavior of the nickel complex	complexes	electrolytic $[M_2L_2(2H_2O)_n]\cdot mH_2O$ (n and m = 0–2) complexes with variable geometries. The nickel complex exhibited anomalous magnetic behavior compared to literature analogues. This result is attributed to molecular association and suggests the existence of both planar and octahedral forms in a conformational equilibrium. These complexes exhibit thermal stability up to 700 °C, except for the Ni(II) complex which degraded to its oxide. Antimicrobial screening data showed that H_2L had no efficacy against a panel of pathogenic microorganisms, whereas the Ni(II) complex exhibited potency both as an antibacterial and antifungal agent. The properties of the complexes with respect to DPPH radical scavenging, acetyl cholinesterase inhibition and antihemolytic activity were evaluated.		metal+++++++++complexes+&btnG=
12	Immunomodulatory effect of Berberis vulgaris extracts on murine splenocytes and enrichment of dendritic cells in vitro	Immunological Effect of Berberis vulgaris extracts	Dendritic cells (DCs) play a critical role in the immune system. DCs were used in several studies as a vaccine for diseases, characterized by a compromised cell-mediated immunity, such as hepatitis C virus and tuberculosis. The main problem that the researchers in this subject face is how to enrich and maturate the DCs. Therefore, the goal for this study was to investigate the modulating effect of Berberis vulgaris extract on splenocytes' and DCs' enrichment and maturation in vitro. First, water and ethanolic extracts of B. vulgaris, as well as berberine standard were added to splenocytes. The most effective extract and its appropriate concentration were chosen by determining its modulating effect on cytokines and cell viability. Our results showed that 100 mg/mL of all tested solutions had a maximum stimulatory effect on splenocytes. On the other hand, at this concentration, only ethanolic extract was found to induce interferon gamma (IFN-g) production at a protein level. The addition of ethanolic extract to splenocytes increased the cell viability. Also, CD11c became markedly increased. Finally, it shifted the matura	**2015**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Immunomodulatory+effect+of+Berberis+vulgaris+extracts+on++++++murine+splenocytes+and+enrichment+of+dendritic+cells+in+vitro+&btnG=

13	Detection MicroRNA in Hepatic cirrhosis and Hepatocellular Carcinoma (HCC) in Hepatitis C genotype-4 in Egyptian patients	MicroRNA in Hepatic cirrhosis and Hepatocellular Carcinoma	In Egypt, the prevalence of chronic hepatitis C (CHC) infection is 13.8% of whole population and about 80% of the patients with hepatocellular carcinoma have underling hepatitis C. *Aim.* This study was designed to assess the diagnostic value of plasma miR-122 and miR-21 in patients with CHC, genotype-4, to detect fibrosis progression versus noninvasive indices and their diagnostic value in detection of early stages of hepatocellular carcinoma (HCC). *Methodology.* A prospective study that included 180 patients, divided into 3 groups: healthy controls (group I), CHC patients (group II), and hepatitis C patients with HCC (group III); all cases were subjected to thorough clinical, radiological, and laboratory investigations. Selected biomarkers were evaluated and correlated with degree of liver damage. Results revealed that miR-122 followed by miR-21 had the highest efficiency in prediction of liver cell damage. Also, miR-21 was strongly correlated with vascular endothelial growth factor (VEGF) and alpha fetoprotein (α-FP) in HCC patients. *Conclusions.* Plasma miR-122 and miR-21 had strong correlation with degree fibrosis in HCV genotype-4 patients; consequently they can be considered as potential biomarker for early detection of hepatic fibrosis. Moreover, miR-21 can be used as a potential biomarker, for early detection of HCC combined with VEGF and α-FP.	**2017**	https://onlinelibrary.wiley.com/doi/full/10.1155/2017/1806069
14	Neuroprotective effect of ipriflavone against scopolamine-induced memory impairment in rats.	Neuroprotective effect of ipriflavone against scopolamine-induced AD	**Background** Alzheimer's disease is an age-related neurodegenerative disorder characterized clinically by a progressive loss of memory and cognitive functions resulting in severe dementia. Ipriflavone (IPRI) is a non-hormonal, semi-synthetic isoflavone, clinically used in some countries for the treatment and prevention of postmenopausal osteoporosis. Moreover, ipriflavone is a non-peptidomimetic small molecule AChE inhibitor with an improved bioavailability after systemic	**2017**	https://link.springer.com/article/10.1007/s00213-017-4690-x

			administration, due to its efficient blood-brain barrier permeability in comparison with peptidomimetic inhibitors. **Objective** The present study aimed to evaluate the possible enhancing effects of IPRI on memory impairments caused by scopolamine administration. **Methods** Male rats were administered IPRI (50 mg/kg, oral) 2 h before scopolamine injection (2 mg/kg, intraperitoneally injected) daily for 4 weeks. Effects of IPRI on acetylcholinesterase activity, amyloid-β precursor processing, and neuroplasticity in the rats' hippocampus were investigated. **Results** Daily administration of IPRI reverted memory impairment caused by scopolamine as measured by the reduction of the escape latency. IPRI significantly alleviated the oxidative stress and restored the mRNA expression of both cAMP-response element-binding protein and brain-derived neurotrophic factor in the hippocampus. Furthermore, it significantly increased the expression of ADAM10 and ADAM17 (two putative α-secretase enzymes) and phosphorylated extracellular signal-regulated kinase 1/2 (pERK1/2) that associated with decreased expression of β-secretase (BACE) in the hippocampus. Finally, both the amyloid-β (Aβ) and Tau pathologies were reduced. **Conclusions** IPRI showed promising neuroprotective effects against scopolamine-induced memory dysfunction in rats. These findings contributed to the stimulation of α-secretase enzymes, the activation of MAPK/ERK1/2, and the alleviation of oxidative stress.		

15	Neuroprotective effect of berberine against environmental heavy metals-induced neurotoxicity and Alzheimer's-like disease in rats.	Neuroprotective effect of berberine against heavy metals-induced AD	Heavy metals are reported as neurodegenerative disorders progenitor. They play a role in the precipitation of abnormal β-amyloid protein and hyper-phosphorylated tau, the main hallmarks of Alzheimer's disease (AD). The present study aimed to validate the heavy metals-induced Alzheimer's-like disease in rats as an experimental model of AD and explore the therapeutic effect of berberine via tracking its effect on the oxidative stress-inflammatory pathway. Alzheimer's-like disease was induced in rats orally by a mixture of aluminium, cadmium and fluoride for three months, followed by berberine treatment for another one month. Berberine significantly improved the cognitive behaviors in Morris water maze test and offered a protective effect against heavy metals-induced memory impairment. Docking results showed that berberine inhibited AChE, COX-2 and TACE. Matching with *in silico* study, berberine downregulated the AChE expression and inhibited its activity in the brain tissues. Also, it normalized the production of TNF- α, IL-12, IL-6 and IL-1β. Moreover, it evoked the production of antioxidant Aβ40 and inhibited the formation of Aβ42, responsible for the aggregations of amyloid-β plaques. Histopathological examination confirmed the neuroprotective effect of berberine. The present data advocate the possible beneficial effect of berberine as therapeutic modality for Alzheimer's disease via its antiinflammatory/antioxidant mechanism.	**2018**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Neuroprotective+effect+of+berberine++++++against+environmental+heavy+metals-induced+neurotoxicity+and++++++++Alzheimer%27s-+like+disease+in+rats.&btnG=
16	An initial demonstration of polyester monomer coordination properties: Synthesis and biological activity	Synthesis and biological activity of metal complexes derived from a new	A part of a running research project directed to building coordinated polymers based on the rigid aromatic s-triazine, the researchers reported the synthesis, characterization, antimicrobial, antioxidant and anti-inflammatory activities of four new transition metal complexes derived from the nanosized diol monomer (H2L ligand) as early representatives of its nanosized o-naphthol-based polyester. The reaction of the new nanosized N2O2 donor diimine containing sulfone with zinc (II), copper (II), nickel (II) and cobalt (II) ions offered	**2019**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=An+initial+demonstration+of+polyester+monomer+coordination++++++++properties%3A+Synthesis+and+biological+activity+of+metal+com

	of metal complexes derived from a new nanosized diol.	nanosized diol.	nonconducting metal complexes. The SEM image showed the diol monomer was organized as well-defined nanosized rod-like morphology. Spectroscopic and magnetic susceptibility studies displayed the tetrahedral geometries for Zn (II), Co (II) and Ni (II) complexes while the Cu (II) complex had square planar geometry. The antioxidant and antiinflammatory activities were in the order [Cu2L2].4H2O > [Zn2L2] > [Ni (HL)2] > [Co2L2] > H2L. Despite the ligand, [Cu2L2].4H2O, [Zn2L2] and [Co2L2] complexes displayed no efficacy against the screened microbes, only the tetrahedral Ni (II) complex exhibited moderate activity. The reporting complexes possessed several notable advantages that render them as promising alternatives for the development of therapeutic agents. Selection of the rigid O-substituted naphthol ring as a source of Odonor ligands is expected to construct high dimensional frameworks and more easily contributing and controlling metallic topology.		plexes++++++++derived+from+a+new+nanosized+diol.&btnG=
17	Pharmacological implications of ipriflavone Against environmental metal–induced neurodegeneration and dementia in rats.	Ipriflavone against metal-induced dementia	Long-term exposure to environmental neurotoxic metals is implicated in the induction of dementia and cognitive decline. The present study aims to illustrate the therapeutic role of ipriflavone as a synthetic isoflavone against environmental metal–induced cognitive impairment in rats. Dementia was induced by a mixture of aluminum, cadmium, and fluoride for 90 days followed by ipriflavone for a further 30 days. Metal-treated animals exhibited abnormal behaviors in the Morris water maze task. Neuropathological biomarkers including oxidative stress (TBARS, NO, SOD, GPX, GST, and GSH), inflammation (TNF- α, IL-6, and IL-1β), neurotransmission (AChE and MAO), and insulin resistance (insulin, insulin receptor, and insulin-degrading enzyme) were altered, which consequently elevated the level of amyloid-β42 and tau protein in the hippocampus tissues inducing neuronal injury. Ipriflavone significantly ($P < 0.05$) ameliorated the neurobehavioral abnormalities and the cognitive	**2021**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Pharmacological+implications+of+ipriflavone++++++++++Against+environmental+metal%E2%80%93induced+neurodegeneration+and+++++++++dementia+in+rats.&btnG=

			dysfunction biomarkers via antioxidant/anti-inflammatory mechanism. Moreover, ipriflavone downregulated the mRNA expression level of amyloid precursor protein and tau protein, preventing amyloid plaques and neurofibrillary tangle aggregation at $P < 0.05$. A molecular docking study revealed that ipriflavone has a potent binding affinity towards AChE more than donepezil and acts as a strong AChE inhibitor. Our data concluded that the therapeutic potential of ipriflavone against dementia could provide a new strategy in AD treatment.		
18	Impact of ginseng on neurotoxicity induced by cisplatin	Neuroprotective of ginseng against cisplatin	Over the years, many researches have shown the potential protective effects of ginseng for preventing and treating neurological damage and their related diseases. Neuronal disturbance is one of the most common serious effects of cisplatin chemotherapy that triggers memory impairment and cognitive disability. Based on the hypothesis that mechanistic pathways of ginseng against the neurological and biochemical disturbance remain unclear, therefore, this study was designed to investigate the neuroprotective effect of ginseng extract against neurological and behavior abnormality induced by cisplatin in male rats. Animals were divided into 4 groups. Group 1 served as a control, group 2 was orally administrated with ginseng (100 mg/kg BW) daily for 90 days, group 3 was injected intraperitoneally with cisplatin (4 mg/kg BW) once a week for 90 days, and group 4 received ginseng and cisplatin. Cisplatin induced a learning and memory dysfunction in the Morris water maze task and locomotor disability in the rotarod test. In addition, cisplatin disrupted the oxidant/antioxidant systems, neuroinflammatory molecules (TNF-α, IL-6, IL-12, and IL-1β), neurotransmitters, and apoptotic (caspase-3, P53, and Bax) and dementia markers (amyloid-β40 and amyloid-β 42). Co-treatment with ginseng extracts successfully ameliorated the cognitive behaviors and intramuscular strength and presented a good protective agent against	**2022**	https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Impact+of+ginseng+on+++++++++neurotoxicity+induced+by+cisplatin+in+rats&btnG=

			neurological damage. Histopathological and histochemical studies proved the neuroprotective effect of ginseng. Our data showed that ginseng capable to counteract the memory dysfunction is induced by cisplatin via reducing oxidative stress and neuroinflammation restoring the neurological efficiency.		
19	Green synthesis of nanosized N, N'-bis (1-naphthylidene)-4, 4'-diaminodiphenyl methane and its metal (II) complexes and evaluation of their biological activity.	Biological activity of synthesized nanosized N, N'-bis (1-naphthylidene)-4, 4'-diaminodiphenylmethane and its metal (II) complexes.	Condensation of ecofriendly synthesized 4,4'-methanedianiline with 2-hydroxy-1-naphthaldehyde produced a (1:1) octopus-like Schif base mixed ligand. Reaction with Co(OAc)2·H2O, NiCl2·6H2O, Cu(OAc)2·H2O and Zn(OAc)2·2H2O metals furnished their complexes in high yield and purity. All new structures were fully characterized by various spectroscopic and spectrometric measurements. The complexes exhibited high thermal stability up to 700 °C, leaving nearly 40% of their mass as residues. Antimicrobial screening results exhibited moderate activities towards all studied microbes. Antioxidant screening was concentration dependent, and their activities were in the order Ni(II)>Zn(II) >Cu(II) >Co(II) complexes. The NO inhibitory efect revealed that the nickel complex exhibited the highest activity, whereas the cobalt complex showed the lowest inhibition. All compounds showed a signifcant lipid peroxidation inhibitory efect against oxidative stress. The complexes signifcantly diminished the TBARS level, and the nickel complex exhibited the highest inhibition at $p < 0.01$. Antioxidants stress the oxidative damage induced by iron, indicating that the nickel complex has the highest reducing activity. The inhibitory efect against acetylcholine esterase showed that the copper complex has the highest activity. Membrane stabilization activities clearly indicated that most compounds can improve the integrity of the cells and stability of their membrane, and this result may be related to their antioxidant capacity to protect against cytotoxicity. The nickel complex exhibited a stronger total antioxidant capacity than the other complexes. The	**2022**	https://www.nature.com/articles/s41598-022-25650-z.pdf

			biological and antioxidant capacities of these complexes may make them promising candidates in pharmaceutical applications.		