Results: A significant increase ($P < 0.05$) in feed consumption, body weight gain, relative weights of testis and epididymis and intratesticular cholesterol level, follicle stimulating hormone (FSH), luteinizing hormone (LH), and prolactin was found in rats received dimethoate. On the other side, a significant decrease ($P < 0.05$) in absolute weight of testes and epididymis, serum cholesterol and testosterone levels, serum acetylcholine esterase (AChE) activity ,total sperm count, motility and fertility index was observed compared with the control group. Histopathologic results also indicated enlargement of interstitial space, inhibition of spermatogenesis, and variable degrees of degenerative changes in the seminiferous tubules up to total cellular destruction.
Conclusion: Our results proved that dimethoate, could act as neuroendocrine disruptor via inhibition of AChE activity and increase of acetylcholine level in brain. This effect might be linked to the suppression of the brain's release of hormones that stimulate the gonadotrophic hormones (LH and FSH). So we have to be aware that dimethoate has detrimental effects on the male rat reproductive system.
Disclosure of Interest: None declared.

PP238—SYNTHESIS OF THE FIVE BANGLADESHI UNANI MEDICINES DERIVATIVES: IN VITRO STUDIES OF THEIR PHARMACOLOGICAL ACTIVITIES

M.A.H. Mollik*
Biological Sciences, Peoples Integrated Alliance, Bogra, Bangladesh

Introduction: The art of herbal healing has very deep roots in Bangladeshi culture and folklore. Unani medicines serve as a major source of primary health care for Bangladeshi people. The reasons for their use range from easy access, affordability, beliefs in traditional systems, and long-term safety. Unani medicines have been used to treat individuals infected with human immunodeficiency virus (HIV) and therefore need scientific validation, a view supported by the herbalists.
Patients (or Materials) and Methods: The studies aimed to evaluates the in vitro cytotoxicity, immune-modulatory, and anti-HIV activities of traditional multiple herbal preparations from the herbalists. Triphola, Mohasudarshan, Doshomula, Sarasvati, and Hingoshtak medicines were supplied by the herbalists.
Results: Changes in adenosine triphosphate and glutathione over 36 hours were measured using luminometry. Changes in 13 cytokines were assayed using an enzyme-linked immunosorbent assay–based absorbance assay. Protective effects against HIV killing of metallothionein-IV cells were tested using the cell proliferation kit assay, and antiviral activities was measured using an HIV-1 viral load assay. Cyclosporine and azidothymidine were used as positive controls. Mohasudarshan, Doshomula, and Sarasvati induced a dose-dependent toxicity on treated peripheral blood mononuclear cells by reducing adenosine triphosphate, and glutathione at high doses ($P < 0.001$). These remedial preparations, along with Triphola, showed immunomodulatory activities by significantly ($P < 0.001$) changing the secretion of pro-inflammatory cytokines. Hingoshtak stimulated the levels of adenosine triphosphate, and glutathione in treated peripheral blood mononuclear cells at all doses however this remedial did not show any immunomodulatory activities on cytokine secretion when compared with control cells. Doshomula, Mohasudarshan, and Triphola showed promising anti-HIV activities relative to azidothymidine ($P < 0.01$).
Conclusion: The studies have exposed that some of these traditional remedial preparations have at least 1 or all the properties of immunostimulation, immunomodulation otherwise antiretroviral effects. Proper scientific studies conducted on these preparations may lead to discovery of more effective drugs than in use at present.
Disclosure of Interest: None declared.

PP239—SUSCEPTIBILITY OF LEPTOSPIRA TO XANTHONES AND SYNERGISTIC EFFECTS WITH ANTIBIOTICS

C. Mekseepralard[1*]; W. Seesom[2]; S. Suksumran[3]; P. Ratananukul[4]; T. Kammee[3]; and W. Sukhumsirichart[2]
[1]Department of Microbiology; [2]Department of Biochemistry, Faculty of Medicine, Srinakharinwirot University; [3]Department of Chemistry, Faculty of Science; and [4]Office of Higher Education Commission, Ministry of Education, Bangkok, Thailand

Introduction: Leptospirosis has emerged as a globally spread infectious disease that is caused by spirochete bacteria of the genus *Leptospira*. Xanthones from pericarp of *Garcinia mangostana* and their analogs widely used as medicinal agents against several infectious diseases were examined for inhibitory activity and investigated for synergistic effects with antibiotics against *Leptospira* spp.
Patients (or Materials) and Methods: The minimal inhibitory concentrations (MIC) of 5 purified xanthones and 8 xanthone analogs were determined against 1 nonpathogenic *L biflexa* serovar Patoc and four pathogenic *L. interrogans* serovars Bataviae, Autumnalis, Javanica, and Saigon by using broth microdilution test. The synergistic effects with penicillin G or ampicillin were evaluated by calculating the fractional inhibitory concentration (FIC) index.
Results: The 2 xanthones from mangosteen, γ-mangostin and garcinone C, and the 2 xanthone analogs, 1,3,8-trihydroxyxanthone and 1,3-dihydroxythioxanthone, showed the highest antileptospiral activities with the MIC varying from 100 to ≥800 μg/mL. Combinations of γ-mangostin with penicillin G and 1,3,8-trihydroxyxanthone with ampicillin generated synergistic effects at the FIC index of 0.05 to 0.75 and 0.51 to 0.75, respectively. However, antagonistic activity against *L interrogans* serovar Saigon was observed when combining γ-mangostin with penicillin G.
Conclusion: The results demonstrated that the xanthones from *G magostana* and hydroxyxanthone analog inhibited growth of leptospires and there were synergistic effects between these xanthones and antibiotics, which could enhance the efficacy of both drugs for the treatment of leptospirosis.
Disclosure of Interest: None declared.

PP240—PHARMACEUTICAL QUALITY OF GENERIC LEVODOPA/BENSERAZIDE PRODUCTS

G.L. Vital-Durand[1]; I. Arnet[2*]; U.E. Gasser[3]; and A. Fischer[4]
[1]Mature Products, Hoffmann–La Roche; [2]PHARMAZEUTISCHE WISSENSCHAFTEN, Pharmazentrum, Basle; [3]ClinResearch, Aesch; and [4]Quality Control, Hoffmann–La Roche, Basle, Switzerland

Introduction: *Objective*: To compare the pharmaceutical quality of 7 generic levodopa/benserazide combination products marketed in Germany with the original product (Madopar® / Prolopa®). Madopar® / Prolopa®is a combination of levodopa (L-Dopa), the precursor of dopamine (DA), and benserazide, a dopamine decarboxylase inhibitor (DDCI). It is indicated in the treatmentof Parkinson's disease, dopamine-responsive dystonia, and restless legs syndrome.
Patients (or Materials) and Methods: Madopar®/Prolopa®125 tablets and capsules were used as reference materials. The generic products tested (all 100 mg/25 mg formulations) included 4 tablet formulations (ie, Levodopa/Benserazid beta [Betapharm], Levodopa/Benserazid-CT [CT Arzneimittel], dopadura B [Mylan dura], and Levodopa/Benserazid ratiopharm [ratiopharm]) and 3 capsulated