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МОНГОЛЫН ЭМ ЗҮЙ, ЭМ СУДЛАЛ

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INFLUENCE BAA «BAIKALSKI - 7» ON CHRONIC TOCSIC EXPERIMENTAL GEPATITIS

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Introduction. Modern structure of hepatitides etiology and clinical course significantly changed. Prevalence of acute hepatitis tends to reduce, whilst number of patients with chronic hepatitis dramatically rises. Chronic hepatitis fraction is currently extended with mixed forms and lesions caused by toxic agents including drugs.Taking into account this issue, it is necessary to draw attention to the complimentary therapies supplemented with herbal medicines.

Our research is focused on measuring pharmacotherapeutic efficiency of«BAIKALSKI - 7» dietary supplement in experimental liver lesions in white rats.

Materials and Methods: Dietary supplement «BAIKALSKI - 7» consists of raw material of 7 medicinal plants: calendula flowers*(Calendula officinalis L.)*, rose hips (*Rosa majalisHerrm.*), thornapple fruits (*Grataegussanguinea L.*), elecampane rhizomes(*Inulahelenium L.),* immortelle flowers *(Helichrysum are-narium L.),*licorice roots(*Glicyrrhizaglabra L.)*and peppermint leaves(*Menthapiperita L.)*in equal portions. The composition is based on pharmacological attributes and designed in the Institute of General and Experimental Biology of Siberian Division of the Russian Academy of Sciences(SD RAS).

To determine features of «BAIKALSKI - 7» an experimental study in 90 rats of both genders with initial weight ranging from 160,0 to 200,0 was conducted.

Chronic toxic hepatitis model was created by subcutaneous injection of CCl4 50% oil solution 0,2ml per 100 g of animal's weight twice a week during 2 month. All rats were divided into 4 groups: I – intact rats, II –control group with chronicCCl4 – hepatitis, III - comparison group with chronic CCl4 – hepatitis received standard treatment drug Carsil(Silibinin50 mg/kg), IV - chronic CCl4 – hepatitis treated with «BAIKALSKI - 7» injected into rats' stomach.

«BAIKALSKI - 7» infusion was used in dosage of dry extract 0,3 g per kgof animal's weight once a day for 30 days after the 31st day of trials. II group animals received distilled water in equal volume.Functional condition of the liver was measured on 44th, 58th and 72ndday using approved biochemical methods. State of antioxidant defense was rated by means of serum antioxidant enzymes catalase, superoxide dismutases, and glutathione (GSH). Measuring of serum catalase activity is based on salts of ammonium molybdate ability to dye hydrogen peroxide. SOD activity was measured by inhibiting adrenaline autooxidationreaction(pH 10,2). Lipid peroxidation was tracked with malondialdehyde and conjugated dienes concentration in serum. Data is statistically approved for$p < 0,05$(Student t-test).

Results: After injecting hepatotoxic CCl4 model showed increasing cytolytic markers (AST, ALT), cholestasis markers (ALP, Я-lipoprotein, cholesterol) and signs of dysproteinemia(thymol test) comparing to I group. Chronic liver lesion had lead to lipid peroxidation,levels of diene conjugates and malonicdialdehyde elevated, activity of SOD and catalase decreased. In rats from group III after 2 weeks of Carsil use reliableattenuation of cytolytic processes was observed. Simultaneously in group treated with «BAIKALSKI - 7» concentration of MDA decreased by 27%, conjugated dienesby 21% compared with the control group. Carsil use had led to 14% and 19% reduction of peroxidation products.

Antioxidant defense comparison of groups received «BAIKALSKI - 7»(IV) and Carsil(III) demonstrated significantly higher activity of SOD and catalase in group IV. Catalase activity on 58th day of trials increased 2,1-2,4 times, SOD activity increased 1,2-1,5 times, concentration of peroxidation products significantly decreased.

Thus, in experimental conditions in the model of chronic toxic hepatitis was found that the use of «BAIKALSKI - 7» has provided multiple impact on the pathologic process affecting symptoms of cytolysis, cholestasis and dysproteinemia.Hepatoprotective activity included peroxidation processes reduction, decreasing concentration of MDA and conjugated dienes, increasing activity of SOD and catalase.

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DESIGN, SYNTHESES, AND BIOLOGICAL EVALUATION OF 14-N-SUBSTITUTED NALTREXONE DERIVATIVES AS OPIOID RECEPTOR LIGANDS

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Introduction: Morphine, the main active ingredient of opium, and other clinically useful opioid analgesics all mediate their effects by activating the mu opioid receptor (MOR). Studies involving MOR knockout mice have shown that the interaction with the MOR is also responsible for the many notorious side effects associated with these drugs including dependence and addiction [1]. Therefore, selective antagonists for the MOR are needed to study its function in drug abuse and addiction.

Goal: Design and synthesis of a series of naltrexone derivatives and determination of their pharmacological profile at all three opioid receptors.

Material and methods: Based on the lead compound that was previously identified in our lab, a series of 14-N-substituted naltrexone derivatives were synthesized. Thebaine was used as the starting material and the naltrexone derivatives were synthesized in multiple steps using various organic synthesis methods. The final compounds were purified using column chromatography and characterized using IR, NMR, mass spectroscopy, HPLC, and melting point. The final compounds were then tested in a competitive radioligand binding assay at the mu, kappa, and delta opioid receptors using [^{3}H]naloxone, [^{3}H]diprenorphine, and [^{3}H]naltrindole to label the receptors respectively. The [^{35}S]GTPγS binding assay was employed to determine the relative efficacy of these compounds at the MOR.

Results: Competitive binding assay results showed that the naltrexone derivatives with amide linkage to various heterocyclic aromatic rings have a subnanomolar to nanomolar affinity for all three opioid receptors. The lead compound of the series was shown to be dually selective for the mu and kappa opioid receptors over the delta opioid receptor. Furthermore in the [^{35}S]GTPγS binding functional assay, the lead compound was determined to be an antagonist at both mu and kappa opioid receptors.

Conclusion: It is well established that MOR antagonists by themselves can be effective at treating various forms of drug addiction [2]. Furthermore, there is growing evidence that suggests KOR antagonists may be beneficial in lowering drug cravings and preventing relapse in addicts [3]. MOR-KOR dual-antagonists may find novel clinical utility as therapeutic agents in the treatment of opioid dependence.

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THE MEDICINAL PLANT RAW MATERIALS CONTAINING TANNINS

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Topicality: In recent years interest to biologically active preparations of a phytogenesis is considerably increased. Tannins are very widespread group of biologically active agents of the plants, having various pharmacological properties (astringent, styptic, anti-inflammatory), and causing their broad application in medicine.[1] Therefore the problem of determination of high quality of medicines and the medicinal plant raw materials containing this group of biologically active agents is very actual. The techniques, allowing to establish high quality of the raw materials containing tannins, were applied to raw materials of *Rhizomata Bergeniae crassifoliae* from an original derivative plant of a *Bergenia crassifolia* (L.) Fritsch, genus of *Bergenia*.

The purpose of this work: is to carry out a number of research works on studying of a chemical composition of the medicinal plant raw materials containing tannins, and to make a precise characteristic of these plants on the basis of the received results. According to a goal of this research the following **tasks** are defined:

1. To carry out the macroscopic and microscopical analysis of medicinal raw materials of Rhizomata Bergeniae crassifoliae ;

2. To define the main indicators of commodity research;

3. To define quality and quantity biologically active agents in these plants. For the solution of tasks the following

Methods: of the analysis were used: macroscopic, microscopical, phytochemical and histochemical analysis, thin-layer chromatography and spectophotometery. Powder of *Rhizomata Bergeniae crassifoliae* (Krasnogorseleksredstva ltd. production) and crumbled of *Rhizomata Bergeniae crassifoliae* (the manufacturer of Ivan-Chay ltd.) were used as samples for this analysis.

Results: According to pharmacopeia article " *Rhizomata Bergeniae crassifoliae* ", for the specified raw materials are established the following numerical indicators: quantity tannins not less than 20%; humidity no more than 14%; total ash no more than 4%; ashes, insoluble in 10% Acidum hydrochloricum solution, no more than 0,5%. [2] The analyzed raw materials correspond to these indicators. As a result of carrying out histochemical and phytochemical reactions in rhizomes of a bergenia the following biologically active agents were found: arbutin, tannins (catechol, EGCG), polysaccharides.

Conclusion: Medicinal plant raw materials of Krasnogorseleksredstva ltd. and Ivan-Chay ltd. correspond to the general pharmacopeia article "*Rhizomata Bergeniae crassifoliae*".

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A RETROSPECTIVE ANALYSIS OF INAPPROPRIATE PRESCRIBING PATTERN AMONG ELDERLY PATIENTS TREATED IN THE TERTIARY LEVEL HOSPITALS OF ULAANBAATAR

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Background: The main principles of pharmacotherapy are to provide pharmaceutical care with right medicine, right doses, in right time. If the treatment plan can be evidence based, it will improve treatment efficacy and safety, can prevent from drug related adverse event and reduce the health care costs. Assessing the drug related problems in elderly patients is a main health care and safety issue for the health care system.

Ischemic heart disease (IHD) is one of major cause of mortality and one of the main diseases of morbidity in Mongolia and in the Worldwide.

Objective: Aim of this study was to conduct a retrospective study on inappropriate prescribing pattern among elderly patients with Ischemic heart disease who were treated in tertiary level hospitals of Ulaanbaatar.

Methods: Total of 438 patient's records who were treated with diagnosis of IHD during the 2011 – 2012, was collected randomly from main three state hospitals of Ulaanbaatar. A retrospective analysis of inappropriate drug prescription was used Beers criteria (2012).

Variables of study were patient's diagnosis, age, sex, names, doses and route of medications.

Results: The mean age of the participants was 67.38±0.24 and 54.6% of participants were male and 44.4% were female.

The trends of rational use of drug and number of drug and drug cost per patients were different in each tertiary level hospitals of Ulaanbaatar. In I state hospital, number and cost of drug per patients were higher than second and third state hospitals. The result were shown that in all three hospitals, more than 50 percent of total drugs per patients were injection, less than 50 percent of total used drug per patients were from standard therapeutic guideline.

The most common inappropriately used drugs were as follows: amiodarone (16% at the I state hospital; 10% at the II state hospital; 3% at the III state hospital), dipyridamole (51% at the I state hospital; 3% at the II state hospital), amitriptyline (29% at the I state hospital; 20% at the III state hospital), nifedipine (33% at the II state hospital).

The use of that are inappropriate with certain medical conditions were common in case of IHD patients with peptic ulcer comorbidity. Non-steroid anti-inflammatory drug + acetyl salicylic acid combination were used in 3% of patients at the I state hospital, in 4% of patients at the II state hospital and 1% of patients at the III state hospital.

Conclusion: Among the medications used for elderly patients with IHD, 15 medications were listed in potentially inappropriate medication in elderly (Beers criteria) independent of diagnosis. In I and II state hospitals, usage of potentially inappropriate medication were greater than III state hospital.

Key words: inappropriate drug, Beers criteria, ischemic heart disease, treatment guideline,

ANALYSIS OF OLEUM HIPPOPHAES

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Introduction: Hippophaes L.s is dioecious branched shrub or small tree with 1.5-3 m. height (Elaeagnaceae). Medicinal raw materials are Fructus Hippophaes from which we can get the Oleum Hippophaes. Hippophaes is widely used in traditional medicine as well as in the official medicine. Hippophaes oil is unique medication and natural concentrated product of bioactive substances. It is used for treatment gastrointestinal tract's and gynecological diseases, cancer and atherosclerosis. Also it stimulates reparative processes, inhibits the activity of gastric proteases, activates secretion and motor function of intestine, reduces the level of cholesterol and lipids, and it has antioxidant properties. Widespread use of Oleum Hippophaes has led to the increasing number of producers and simultaneous increasing of poor quality products.

The purpose of this work was to identify authenticity of conformity Oleum Hippophaes and to make quantitative analysis of carotenoids according to the Temporary Pharmacopeial monograph. The object of our analysis was Oleum Hippophaes (production of CJSC "Altayvitamines") [1].

To achieve this goal we had to make the following tasks: 1) to determine the refractive index and density of Oleum Hippophaes for qualitative analysis; 2) to make quantitative analysis of carotenoids in Oleum Hippophaes by spectrophotometry. In the course of this work we made qualitative and quantitative analysis of Oleum Hippophaes. We have set quality parameters such as refractive index and density. The refractive index amounted n_D^{20} = 1,472 (1,468 - 1,477), and density of Oleum Hippophaes was 0.919 g / ml (0.916 - 0.922 g / ml). According to the quantitative analysis the content of total carotenoids in Oleum Hippophaes was about 205 mg% (should be not less than 180 mg%) [2,3].

Thus, the qualitative and quantitative analysis of Oleum Hippophaes revealed conformity with basic parameters of the Temporary Pharmacopoeial monograph №42-1698-87.

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THE LEVEL OF FREE AND BIOAVAILABLE TESTOSTERONE IN MEN AGED ABOVE 40 YEARS OLD

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Introduction: With the average longevity in men and women, sexual health concerns have become more and more important and demands for help are far more common than in the past. The percentage of aging population is increasing also. A metabolic and hormonal change occurs in male during aging.

The level of total, free and bioavailable testosterone decline with aging and it leads to decrease in sexual activities, metabolism and also the life quality.

The aim of this initial study was the determination of free testosterone and bioavailable testosterone and it was the novelty of our study. Data obtained from our research can be used as basic information for hormone replacement therapy in late onset hypogonadism.

Research goal: To study the free testosterone and bioavailable testosterone level in aging males

Materials and Methods: This study is a part of study: "Androgen status of aging males" which was supported by Asian Research Center, Korean Foundation for Advanced Studies. The study was approved by IRB of MoH and written consent was obtained from all participants.

Fasting blood samples were collected in the morning between 8.00-10.00 AM. We used commercial ELISA kits from Magiwel CoLtd (USA) for determining the total testosterone, sex hormone binding globulin levels. Bromcresol green method was used in determination of serum albumin level. Bioavailable and free testosterone were calculated by Alex Vermeulen, Lieve Verdonk and M. Kaufman's formula, which was recommended by International Society for the Study of Aging Male.

We studied 114 healthy males aged above 40 years old, all undergone the General and Urological examination.

Result and discussion: The average age was 57.48±10.48 years in our study participants. In group of 40-49 years were 29% (n=33), in 50-59 age group 23% (n=26), in 60-69 age group 27% (n=38) and in age group over 70-s were 15% (n=17).

Mean total testosterone was 6.04±1.83 ng/ml, in 40-49 age group it was 6.14±1.65 ng/ml, in 50-59 age group 6.04±2.36 ng/ml, in 60-69 age group 6.05±1.80 ng/ml, and over 70's it was 5.85±1.43 ng/ml.

Mean sex hormone binding globulin was 50.22±29.97 nmol/l, in 40-49 age group 37.60±23.03 nmol/l, in 50-59 age group 47.08±29.61 nmol/l, in 60-69 age group 57.24±33.91 nmol/l, and over 70's it was 59.22±25.38 nmol/l.

Mean albumin was 40.86±6.89 g/l, in 40-49 age group 44.55±5.93 g/l, in 50-59 age group 41.85±6.93 g/l, in 60-69 age group 38.92±6.85 g/l, and over 70's was 36.55±4.77 g/l.

Mean free testosterone was 0.112±0.064 ng/ml, in 40-49 age group 0.124±0.058 ng/ml, in 50-59 age group 0.114±0.077 ng/ml, in 60-69 age group 0.107±0.072 ng/ml, and over 70's it was 0.097±0.044 ng/ml.

Mean bioavailable testosterone was 2.53±1.48 ng/ml, in 40-49 age group 2.76±1.37 ng/ml, in 50-59 age group 2.60±1.70 ng/ml, in 60-69 age group 2.51±1.56 ng/ml, and over 70's it was 2.04±1.05 ng/ml.

Conclusion:

1. In our participants aged above 40 years old, the average mean of free testosterone was 0.112±0.066 ng/ml, free testosterone index was 16.95±11.82. Free testosterone had inverse correlation with aging (r=-0.168, p=0.03) and had peer decline among aging groups.
2. The average mean of bioavailable testosterone was 2.53±1.48 ng/ml, and had age related inverse correlation (r=-0.169, p=0.037), which decline was deeper in men aged over 70 years.

Key words: Aging, total, free, bioavailable testosterone, free testosterone index

PHARMACOGNOSTICAL ANALYSIS OF *FOLIA FARFARAE OFFICINALIS*

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Topicality. Class polysaccharides take up a important position among biological active substances. Representatives of this class are compounds which have broad spectrum pharmacological properties. They are under in sphere attention of researchers. *Tussilago farfarae* L. (*Asteracea*) concerm to such plant. These is plants are grown in Europe and Asia. It is also a common plant in North America and South America where it has been introducted, most likely by settlers as a medical item. The plant is often found in waste and disturbed places and along roadsides and paths. In some areas it is considered an invasive species [1].

The purpose of this work is to pharmacognostical analysis *Folia Farfarae*. According to a goal of this research the following tasks are defined:

1. To carry out the macroscopic and microscopic analysis of materials.

2. To indentify major merchandising performances.

3. To define the amount of active ingredients on which the raw materials are standardized.

As samples for the analysis served: *Folia Farfarae officinalis* by “Ivan-Chai” were served as samples for the analysis.

For the solution of tasks the following methods of analysis were used: macroscopic,macroscopycal, phytochemical, histochemical, gravimetric analysis.

Results. According to pharmacopeia article “*Folia Farfarae*” (State Pharmacopeia Ed. XI,T.2,p.280), for the specified raw materials are established the following numeral indicators: Ashes in general (no more than 20%); ashes, nsoluble in 10% HCL (no more than 10%); humidity (no more than 13%) [2].

Conclusion: “*Folia Farfarae*” correspond to the general pharmacopeia article “Folia Farfarae”.

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ESTIMATION OF EXPENDITURES FOR OPEN HEART SURGERIES

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Introduction: Cardiovascular diseases are one of the leading causes of mortality and morbidity in Mongolia during last 10 years. Accordingly, increasing number of the procedures cardiac open heart surgeries in Mongolia.

The aim is to evaluate of the scientific literature related to estimation of expenditure for open heart surgeries.

Method: The literature search strategies were developed to identify published studies. The following literature databases were searched and collected individually: MEDLINE PubMed, Google and abstract books in Mongolian libraries.

Result: Analyzed the 28 published literatures which made in estimation of expenditures for open heart surgery. The most of the study were generally focused on the expenses of diagnosis and treatments of open heart surgery. Literature showed that for patients not covered by health insurance, valve replacement surgery typically costs from about $80,000 -$200,000 or more with an average, according to an American Heart Association report, of $164,238, not including the doctor fee. A surgeon fee can add $5,000 or more to the final bill. For example, Dartmouth-Hitchcock Medical Center in New Hampshire charges about $86,500, including doctor fee, after a 30% uninsured discount. St. Mary's Hospital in Wisconsin charges an average of $107,000, but costs can reach $200,000 or more. AndBaptist Memorial Health Care charges about $75,000 -$140,000, not including doctor fee, but cost can go up to more than $200,000 with major complications. In Russia, total 700,000 people take surgery on annual average each year and on which they spend 10 902 500 000$ annually, it has been stated on Bokeriya.L found that 464 637.840 ruble annually on cardiac surgery coronary angioplasty surgery, 792 237 ruble on coronary heart disease surgery and 9 522 ruble on congenital heart defect repairment surgery. Up to per 15 years old children, 24 288 ruble spend on average. Bokeria et all reported that, expenses of medicine through ABC/VEN analysis, 47 types of medicines of A group(13.1% of total medicines) takes 79.62% of total expenses, 71 types of medicines of B group(19.8% of total medicines) takes 15.36% of total expenses, 242 types of medicines of C group(67.1% of total medicines) takes 5.02% of total expenses. Out of this report, N group's portion of A group medicines takes 0.79% by VEN analysis. Approximate, all inclusive cost for open heart bypass surgery (CABG) vary between USD 5500 - USD 7800, depending on the facility & city you chose to get the procedure done in India. D.Tsegeenjav and D.Bat-Undral reported the expenses on open heart surgery in Mongolia, as a result showed that health insurance spend 56 422 656 ₮ (appx 39,100,093$) for 156 numbers of procedures. But real cost expenditure was 440 300 000.00₮. It means health insurance spent 12.6% of total expenditure for procedures. Also health insurance expenditure for CABG and one valve replacement per patient were same as 643 272.00₮, but real expenditures for CABG was 2 000 000.00₮, and for one valve replacement surgery per patient was 5 000 000.00 ₮.

Conclution: The scientific literatures showed that many studies related in estimation of expenditure for open heart surgery made in international countries such as Russia, USA, UK and India et all. But we didn't found the study for estimation of expenditures for open heart surgery by using ABC/VEN analysis in Mongolia.

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Key words: Open heart surgery, expenditure

PHARMACOGNOSTIC ANALYSIS OF *POLYGONUM AVICULARE* L.

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Introduction: Polygonum aviculare L. (Polygonaceae) is an annual plant. There are about 300 species of genus Polygonum. Polygonum aviculare is a weed plant which is widely spread in Russia and the Ukraine. All the aerial parts of plant can be used as a medicinal plant raw material. It is extensively used in traditional and official medicine for treatment of urinary diseases [1].

The aim of this work is to make Pharmacognostic analysis of Herba Polygoni avicularis and to identify the main biologically active substances. To achieve this goal we should make the following tasks: 1) to do macro- and microscopic analysis; 2) to make phytochemical analysis; 3) to identify a quantitative determination of the sum of flavonoids according to the State Pharmacopoeia of the USSR. Ed. XI (part 2).

As a plant raw material in this research we used Herba Polygoni avicularis of “LEK+” firm manufacturing.

During the work we found out the concordance of “general appearance” according to the macroscopic analysis, as there were pieces of caulis, leaves, blooms of different shapes with greenish-grey colour and faint odour. Also, during the microscopic analysis we identified the main anatomical diagnostic features which are straight cells on epidermis with thickened walls and brown contents, numerous crystals of calcium oxalate in mesophyll, the presence of mechanical fibers with curving outlines and thickened layers [2]. Moreover, we made purity tests and identified quantitative determination of flavonoids. The results: sum of flavonoids calculated as avicularin – 5,2% (should be not less than 0,5 %) by spectrophotometry (λ=410 nm); loss on drying (where we dried our raw material (t=107^{0}C) in a drying closet, weighed up and calculated) - 12% (not more than 13%); total ash (we burned out organics in an ash muffle) – 5,8% (not more than 13%), foreign organic matter – 0,3 % (not more than 2%) and mineral impurity – 0,5% (not more than 2%) [2]. We identified the presence of flavonoids, tannins, polysaccharides and saponins using standard identity tests [3].

In general, during the Pharmacognostic analysis of Herba Polygoni avicularis we set up the correspondence of main characteristics to the general pharmacopeial monograph. We identified the presence of flavonoids, tannins, polysaccharides and saponins.

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STUDY RESULT OF DRUGS SUPPLY FOR PEPTIC ULCER

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Introduction: Structure and Function of the digestive organ diseases in that commonly occurred Ulcer Disease (PUD) is becoming one of the major diseases in the population furthermore it is tending to increase and peptic ulcer malignity is in the fourth leading tumor which causes to death.

80% of the patients who has Gastric ulcer, 80 % of the patient who has PUD, has helicobacter pylori infections.

Mongolian statistics data estimates that there are in total 355256 structures and function of the digestive organ diseases were registered in 2011. 25.2 % of stationary disease, 74.8% of is ambulatory diseases from them stationary disease of PUD are 3.74 %, ambulatory disease of PUD are 4.84%.

Purpose of the study: Indicate the substantial supply of essential drugs of PUD in the stationary and ambulatory treatment.

The study material and method: Diagnosis of PUD 2010-2012, The retrospective study has been done on the history of 393 stationary patients in the Gastroenterlogy Department of Orkhon, Uvur-Khangai, Khovd, Dornod's regional center for diagnosis and, State Central Clinical Hospital, Clinical Hospital-2, Hospital-3 named after Mr. Shastin, Hospitals in Songini Khairkhan District and Nalaikh Districtbut also 107 ambulatory patient's substantial supply of prescribed drug treatments were compiled by cross sectional studies which is specifically developed study card.

WHO advised the drug supply " Managing drug supply, the selection, the procurement, distribution and use of pharmaceuticals " method by Jonathan D. Quick, Jamas R. Rakin, Richard O.Laing, Ronald W.O'Connor, Hans V.Hogerzell, M.N.G.Dukes, Andrew and Кобзарь Л.В, Дрёмова Н.Б, Глембоцкая Г.Т Мнушко З.Н. Statistic was developed and implemented excel, SPSS 16.0 programme.

Result of the study: In the study 500 people were above 20 and average age is 48.36±14.44.

As a tertiary Level hospital 27, As a secondary Level hospital 18,Regional Center for Diagnosis 21, ambulatory treatment 22 kinds of drugs were used in PUD's treatment. Omeprazolum 380, Metronidazolum 242, Sylcoseryl 227 were used.

163380.15 tugrug **(**Mongolian currency**)** budget is required for Stationary treatment of Peptic Ulcer Disease (PUD) but 987540.95tugrug budget is required for ambulatory treatment.

Conclusion:

As a tertiary Level hospital 27, As a secondary Level hospital 18 and Regional Center for Diagnosis used 21 kinds of drugs for PUD.

22 kinds of tablets were used for Peptic Ulcer Disease in an ambulatory

As the result of the study 163380.15 tugrug for PUD's stationary treatment, 987540.95 are required for PUD's ambulatory treatment.

Key words: Peptic Ulcer Disease (PUD), drug supply, medicine usage, drug consumption, H.pylori,

PHARMACOGNOSTIC ANALYSIS OF *RHEUM PALMATUM* L. VAR *TANGUTICUM* MAXIM.

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Introduction: Rheum palmatum L. var. tanguticum Maxim. (Polygonaceae) is one of the well-known Pharmacopeial plants, which is widely used for treatment and prevention of diseases of the digestive system. It has a wide range of pharmacological activity: antiseptic, increasing appetite, hypotensive, astringent and laxative effects. The aim of this work is to make a Pharmacognostic analysis of radices Rhei tangutici. To achieve this goal we should make the following tasks: 1) to do macro- and microscopic analysis; 2) to make purity tests of plant material; 3)to identify the presence of main biologically active substances; 4) to make a chemical assay of anthracene derivatives in radices Rhei tangutici.

A homeland of Rheum tanguticum is Central China and northeastern Tibet. Radices rhei contain 2 - 6% of antraglikosides, a number of which increases with age. Also they contain tannins, resins, pectin substances and a lot of starch. Antraglikosides have a laxative effect which is caused mainly by emodin, rhein and chrysophanic acid (they irritate interoceptors of colon which causes the strengthening of vermicular movement) [1].

For the research we used radices Rhei tangutici which were collected in Mongolia in 2012. A plant material is pieces of roots and rhizomes with cylindrical, slightly curved forms and a laterally-savoyed surface; the color is dark brown (on a cleavage - yellow-brown), with characteristic aromatic odour. Microscopic analysis revealed that the main diagnostic features are medullarry rays, 2–4 cells in width; phloem consists of thin-walled cells with round containers with slime, parenchyma possess cluster crystals of calcium oxalate and starch grains. Also we made purity tests and identified moisture - 7% (should be not more than 12%), total ash – 7,8% (not more than 8%), 10% chlorohydric acid-insoluble ash – 0,9% (not more than 1%), roots which discolored to black - 2% (not more than 5%), foreign organic matter 0.1% (not more than 0.5%) and 0.1% of mineral impurity (not more than 0.5%) [2]. In this material we found out the presence of anthracene derivatives (emodin and chrysophanic acid), polysaccharides, tannins and flavonoids using standard identity tests [3]. According to the quantitative analysis of anthracene derivatives in radices Rhei tangutici, performed by spectrophotometry, it contains 2.8 - 3.03% calculated as istizin (should be not less than 2%) [2].

Thus, the main Pharmacognostic analysis' characteristics of radices Rhei tangutici, which grows in Mongolia, conform to the pharmacopeial article № 68 (State Pharmacopoeia of the USSR, ed.11, part 2).

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THE PHYTOCHEMICAL INVESTIGATION SPECIES OF UPPER PART OF THE LAND *DIANTHUS SUPERBUS*

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Introduction: Perennial plant 15-60 cm high with slim creeper strong roots[1-4]. *Dianthus superbus* usually grows in a larch and Siberian Pine forest, in its meadow, edge and glade, bank of the river and thick bushes forests covering Khuvsgul, Khentii, mountainous and fertile pastures, Mountain range, Khovd and Mongol Altaic Mountain range[1,2,4]. The study of biological activity and bioactive compounds of plants, used in Mongolian and Tibetan traditional medicine such as *Dianthus superbus* and further enrichment of Mongolia's drug foundation by natural drugs which have low toxic and toxicity effects, are one of the important goals of scientist. Upper part of the land is used for liver blood fever, blood pneumonia, menopause, kidney diseases, cystitis, nephritis and edema Mongolian traditional medical treatment and uterus muscle tightening action[3,4].

Goal: The aim is to study the phytochemical properties of *Dianthus superbus* upper part of the land.

Materials and Methods: We performed the research taking material assistance of pharmacognozy laboratories in Monos university from 2012-2013. The quantitative and qualitative analyses of plant bioactive compounds were evaluated by *Russian XI Pharmacopeia and the method according to Mongolian National Standard[5].* Result of the study was developed by SPSS 16 and End note programme.

Result: The quantitative and qualitative analyses of plant bioactive compounds of *Dianthus superbus* upper part of the land were evaluated by Russian XI Pharmacopeia and the method according to Mongolian National Standard and tannin, coumarin, flavonoid and naturally active substances were found.

Conclution: It was carried out phytochemical investigation of the *Dianthus superbus* using spectrophotometer as a result we determined that if contains 10.5 % of sum flavonoid, 7.45 % coumarin. Amount of biological active compound-tannins was 4.24 %.

QUANTITATIVE ANALYSIS OF THE SUM OF FLAVONOIDS IN *ARTEMISIA SIEVERSIANA* WILLD. AND *ARTEMISIA ABSINTHIUM* L.

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Introduction: Genus of Artemisia L. is one of the largest (Asteraceae). There are about 84 species in Siberian flora [1]. Artemisia absinthium L. and Artemisia vulgaris L. are mostly used in medical practice. A.vulgaris L. is widely spread in Buryatia as a weed plant and A.absinthium L.grows only in Kabansky district. One of the Absinthium DC section is A. Sieversiana Willd. which also grows in Buryatia. It is known that pharmacological activities of genus Artemisia plants occur due to the essential oils and sesquiterpene lactones. Speaking from the perspective of efficient use of medical plant materials, it is interesting to explore another group of biologically active substances, including flavonoids.

The main aim of this work is to identify the presence of flavonoids, and make chemical assay of them in Herba A. absinthii и A. Sieversianae. To achieve this goal we should make the following tasks: 1) to reveal main anatomical diagnostic features of Herba A. absinthii and A. Sieversianae; 2) to make phytochemical analysis; 3) to identify the presence of flavonoids using thin layer chromatography (TLC); 4) to make quantitative determination of flavonoids by spectrophotometry.

As a plant material in this research we used Herba A. Sieversianae which was collected in the Republic of Buryatia (Ivolginsky district), in Tomsky region (suburbs of Tomsk) and in Mongolia (suburbs of Ulan-Bator) in 2011-2012 during the flowering period; and Herba A. absinthii of “Health” Firm manufacturing. To make these tasks we used the next methods: 1) microscopic analysis for revealing main anatomical diagnostic features; 2) phytochemical analysis for identification of biologically active substances; 3) TLC to identify the presence of flavonoids; 4) spectrophotometry for quantitative determination.

We made microscopic analysis according to the established article “Technique of microscopic analysis” [2]. The main anatomical diagnostic features of Herba A. absinthii are flaxuose walls on upper epidermis, anamocytic stomata, numerous T-shaped fuzzes; on both surfaces of epidermis there are large oval trichomes with essential-oi [2]. For Herba A. Sieversiana they are: cells with curving walls on epidermis; narrow elongate stomata; specific T-shaped fuzzes; it is seen the places of fuzzes’ fixture on epidermis and large trichomes with essential-oil [3]. The identification of flavonoids was made by TLC plates “Sorbfil” with aluminium substrates in solvent system chloroform – ethanol – water (26:14:3) using standard technique [4]. Then these chromatograms should be faced with ammonia gas. There are spots of rutin which coloured into dark-brown in UV spectrum (Rf 0,73). We identified essential oils, flavonoids, coumarins and polysaccharides using standard identity tests [5]. And quantitative content of flavonoids calculated as rutin was determined by spectrophotometry (λ=410 nm), and the results: in plant raw material from “Health” Firm manufacturing – 0,03%, raw material which was collected in the Republic of Buryatia – 0,85%, in Tomsky region – 0,39% and in Mongolia – 0,52%. For making extract we used 70% ethanol (proportion of raw material and extraction fluid 1:20) [6].

In general, we identified the main anatomical diagnostic features of Herba A. absinthii and A. Sieversianae, made phytochemical analysis and quantitative determination of the sum of flavonoids calculated as rutin.

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SOME CHEMICAL COMPOSITION OF SEABUCKTHORN WASTE RESIDUE

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Introduction: In last years, many farmers, manufacturers and reserchers have paid attention to the seabuckthorn cultivation, production and investigation due to seabuckthorn berry's value and possitive effect on human body. As is known, the fruits of seabuckthorn are used for the production of oil and juice [1,2] in Mongolia. Thereby, the large volume of waste residue material from seabuckthorn, such as pulp, skin and seed residues from juice and oil extraction, could be developed into a biologically activity product.

We studied some chemical composition of seabuckthorn waste residue. Waste residue was sampled from Monos Food Co.,Ltd. Moisture content was determined by gravimetric method, the ash content was determined by incinerating in a muffle furnance at 550^0C, vitamin C and total carotinoid were determined by method of Mongolian National Pharmacopeia [3]. Moisture was 71.65%, total mineral element (ash) was 4%, acidity was 0.26%, Vitamin C was 0.03 mg% and total carotinoid was 0.02 mg%. Our next study will utilize seabuckthorn waste to develop bioactive product and food additive.

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ANALYSIS FRUITS OF CARUM CARVI

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Introduction: Carum carvi L.s l. is a biennial herbaceous plant of the genus Carum (Umbelliferae/ Apiaceae). *Carum carvi* seeds are medicinal raw material. Today *Carum carvi* is widely used in folk medicine and sometimes is used in official medicine of different countries [1]. Widespread use of fruits of *Carum carvi* has increased the number of manufacturers. Unfortunately, at the same time the number of cases of the poor quality of raw materials was increased.

The aim of this work is to make the Pharmacognostic analysis of fruits *Carum carvi* and to find out the quality of essential oil extracted from the fruits of *Carum carvi.* To achieve this goal we should make the following tasks: 1) to make Pharmacognostic analysis; 2) according to the State Pharmacopoeia of the USSR. Ed 11 (part 2) to make quantitative assay of the sum of essential oils in the fruits; 3) to do phytochemical analysis; 4) to determine the quality of essential oil in the fruits of *Carum carvi.*

A plant material of our research is fruits of *Carum carvi* production of CJSC “Ivan tea”.

During the work we found out the concordance of “general appearance”. It is the presence of two mericarps, five longitudinal ribs, matching the size of the seed and the organoleptic characteristics which are described in pharmacopeial monograph on the fruits of *Carum carvi* [2]. We also identified the main anatomical diagnostic features which are essential-oil tubules located between ribs; thickened walls of the endosperm. We identified moisture - 6% (should be not more than 12%); damaged, immature fruits of *Carum carvi* and other parts of the plant – 0,4% (not more than 2%), organic impurities – 0,1% (not more than 2%), mineral impurities - 0,1% (up 0.5%). We also made a sieve analysis [2], in which we have identified the number of particles that have not passed through the sieve of 1 mm diameter (0.77%). Total ash content in the fruits of *Carum carvi* was 5% and 10% hydrochloric acid-insoluble ash 0,8%. We found out that the quantitative content of essential oil in fruits of *Carum carvi* calculated on dry substance was 2% (should be not less than 2%). Also phytochemical analysis was carried out on the base of standard identity tests [3], during which essential oils, flavonoids, tannins and coumarins were found. To determine the quality of essential oil of *Carum carvi* fruits we needed to identify one of the main characteristics of quality - the index of refraction. This figure amounted to n_D^{20} = 1.4870 (1,484-1,493) [4].

Thus, during the Pharmacognostic analysis of *Carum carvi* fruits we set up the correspondence of main characteristics to the general pharmacopeial monograph. We identified the presence of essential oils, flavonoids, tannins and coumarins. The quality of essential oil with refractive index corresponds to the technical standard documentation [4].

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SOME ISSUE OF RE-FORMATION OF "SOROOL 4" MEDICATION INTO PILL FORM

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Background of the research work: Among annual death of 55 million persons worldwide, the most common case is acute respiratory infections among children death. Among annual 5 million deaths for children below 5 years of age, three million or 75% are suffered from pneumonia [3, 4]. According to the research on reasons for 5 priorities diseases in Ulaanbaatar for recent 5 years, the most common case was respiratory infection while it occupied 6.2% of respiratory infections and 8.3% of death reasons for adults in Mongolia [1, 2]. We have chosen this topic due to necessity to produce pills that are easy for usage, better for treatment service, have less toxic actions and softer treatment actions.

Objective of the research work: To make pills from "Sorool 4" medication, which were used for treatment of pneumonic diseases such as pulmonary fever, dry cough effective cough in traditional medical science, in accordance with modern demands and requirements and to develop some methodologies to test the quality of pills.

Purposes of the research works: We have worked with the following purposes:

1. To determine drying substances of Sorool 4 pills
2. To make pills from "Sorool 4" medication and to test quality of the pills

Methodology of research works

1. To determine drying substances of Sorool 4 medication

   Drying substances of Sorool 4 medication were determined through Mongolian national pharmocopy methodology.

   To make pills from "Sorool 4" medication and to test quality of the pills

2. We prepared infusion from Sorool 4 medication, cleaned with spirit, and obtain strong infusion through vacuum vaporizer. Mixture of sugar powder, lemon acid, and strong tincture of Sorool 4 shall be dried into pills. The dried substances of granules shall be determined through drying and dissolution methods.

Results of the research work: 2 grams of Sorool 4 medication contained 0.44% of drying substances while 2 grams of granules contained 0.41% of drying substances. 10grams of Sorool 4 medication was fully dissolved in hot water within 1.5 minutes.

Summary of the research work:

1. Contents of drying substances in Sorool 4 medication was 0.44%
2. If 2 grams of Sorool 4 medication contains 0.44% of drying substances while 2 grams of granules contains 0.41% of drying substances, Sorool 4 medication of traditional Mongolian medical science can be made into pills and used through dissolution of 3 grams of granules in hot water.

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PHARMACOGNOSTIC CHARACTERIZATION OF *HERBA MELISSA OFFICINALIS*.

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Topicaliti: Melissa officinalis L.- a perennial essential oil plant, a sort of the Melissa (Lamiaceae) [1] Plants were used as medicines in the ancient time and are still successfully applied to treat various diseases are used and in the development of new phytopreparations. Herbal medicinal product in comparison with synthetic, have such advantages as low cost of raw materials, less side effects, softer impact on organism and availability. Essential oils of plants are a source of biologically active agents on the basis of which creation of new medicines is possible: «casmin» anticoagulant, anti-aggregative collection «Lomagerpan» cream (contains dry extract from Herba Melissa officinalis). In the world there are 2500 species of such plants, 450 of them grow in Kazakhstan, in the Mediterranean area in the countries of the Middle East. There are medicinal Herba Melissa officinalis.

The purpose of this work: is to study Pharmacognostic Herba Melissa officinalis

According to goal of this research the following **tasks** are defined:

1) To carry out the macroscopic and microscopic analysis of materials.

2) Identify major merchandising performance.

3) To define the amount of active ingredients on which the raw materials are standardized.

As samples for the analysis served: Herba Melissa officinalis by «Zdorovye» were served as samples for the analysis.

For achievement of objectives the following methods were used: the macro - and the microscopic analysis, the phytochemical analysis, a refraction-refractometry indicator. [2]

Results: According to Pharmacopian article № 42-3645-98 (of Russia) [3] numerical indicators for a Herba Melissa officinalis following: the sum of the extractive substances drawn of 24% by alcohol (not less than 22 %), humidity (no more than 12 %); ashes of the general (no more than 12 %); ashes insoluble in 10% solution of acid hydrochloric (no more than 3 %); not passing through a sieve with openings with a diameter of 7 mm, (no more than 17 %); organic impurity (no more than 2 %); mineral impurity (no more than 1 %).

Conclusion: Herba Melissa officinalis conform to the pharmacopein article 42-3645-98

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PHYTOCHEMICAL RESEARCH ON PLANTED *LEONURUS SIBIRICUS L*

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Background of research work: *Leonurus sibiricus L.* pertains to the family *Lamiaceae*. *Leonurus sibiricus L.* is used as a sedative for the central nervous system and healing of heart neurosis, heart activity weakening, diseases of heart muscles, irregularity of menstruation, oedema, dizziness, miscarriage of babies and furuncle [1].

Objective of research work: Define the content of biologically active substances in cultivated *Leonurus sibiricus L.*

Goal of research work:

- Perform qualitative and quantitative analyses of biologically active substances contained in the aerial of cultivated *Leonurus sibiricus L.*
- Decoct thick extract of cultivated *Leonurus sibiricus L.* and establish the microbiological purity.

Applied research methods and material: The top soil part of planted *Leonurus sibiricus L.* was collected from Herbal plants garden of Monos in July 5, 2012 and prepared according to the accepted standards. For defining the contents of coumarin, flavanoids spectrometric method, contents of alkaloids and desiccating substances titration method, decocted, ashing and moisture contents in top soil part of planted *Leonurus sibiricus L.* weighing method were used respectively [2,3].

Results of research work: The total coumarin, flavanoid, alkaloid, tannin, decocted, ash substances and moisture content in top soil part of planted *Leonurus sibiricus L.* were analyzed following the method in the XI (eleventh) pharmacopoeia of the Russian Federation. We found that in the aerial part of planted *Leonurus sibiricus L.* exist following amount of tannin - 2,7%, coumarin – 0,1254%, alkaloids – 0,049%, flavanoids – 6,2%, The total extracted substance was found to be 19,8%, and the moisture and ashing content was determined to be 6,5%, and 10,81%,respectively.

***Leonurus sibiricus L.* thick extract**: In order to prepare *Leonurus sibiricus L.* thin extract, 500g of the plant was extracted with 70% ethanol in 1:5 proportion by the maceration method. The thin extract was thickened in vacuum evaporator at 50-60˚ Celsius and 1.9 liters of thick extract was obtained then the microbiological purity of this thick extract was defined. According to the results of this analysis, the presence of bacteria, mold, bacterium of enterebacteriaceae type, Salmonella, Escherichia coli, Staphylococcus aureus was not detected in the *Leonurus sibiricus L*. thick extract.

Conclusion: The top soil part of planted *Leonurus sibiricus L.* contains alkaloids – 0,049%, coumarins – 0,1254%, desiccated substances - 2,7%, flavanoids – 6,2%, decocted substances – 19,8%, ash content – 10,81%, moisture – 6,5% respectively.

According to the microbiological analysis, Leonurus *sibiricus L.* thick extract was found to be pure and the presence of bacterium was not revealed.

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EVALUATION OF RANGE AND DEMAND ANTIVIRAL DRUGS IN ULAN-UDE PHARMACY CHAINS (Fall-Spring 2011-2012).

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Urgency: Acute respiratory infections (ARI) are among of the most common diseases, which have been superior in a number of cases to all other infectious diseases for many years. According to WHO data, every third inhabitant of the planet has become sick with ARI. In Russia during the epidemic there are nearly 30 million cases of SARS. During epidemics excessive demand for antiviral agents is observed, it leads to periodic shortages of some drugs. So it is relevant to study a supply and a range of antiviral drugs in Ulan-Ude pharmacy chains. The aim of our study is to assess the demand and the range of antiviral drugs in Ulan-Ude pharmacy chains.

Materials and techniques: Cross-sectional study was made by using questionnaire-polling method. 162 respondents of both sexes took place, at the age of 17 to 77 years old, belonging to different socio-economic groups. The survey involved two groups of respondents: the first group was composed of pharmacists and consultants (46), the second group consisted of visitors (132). From November 2011 to March 2012 comparative analysis of prices and range was delivered in retail networks.

Results and conclusion. The widest assortment private pharmacy networks such as “Lara” and “Panacea”; municipal “Buryat-Pharmacy” has a wide range of drugs which mostly consist of antiviral drugs: rimantadine, arbidol, Relenza, Tamiflu and immunomodulatory: Kagocel amiksin, anaferon, Grippferon. Private pharmacies often have no Relenza and Tamiflu. In the survey respondents answered the question about which drug they choose and why: 63% of respondents buy arbidol, 15% indicated anaferon and about 5% choose rimantadine. About 50% of respondents choose the drug on the advice of relatives and friends, 37% of respondents when choosing a drug guided by the recommendations of the pharmacy staff. It is interesting that 17% of respondents indicate Teraflu as the primary means of the flu and SARS.

STUDY AND TECHNOLOGY OF MANUFACTURING TABLET WITH EGGSHELL AND *RHODIALA ROSEA*

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Basis of the study: Injury and breakage, one of the 5 leading diseases of Mongolia.

RhodialaRosea is classified root and with strong root that contain *salidrozid* its peduncle and that helps to renew nervous system, stamina, increases regeneration in the cells and organs also influences injury of bone.[1] Eggshell which is source of calcium and ninety percent is CaCo3 besides 27 kinds of elements are contained in the eggshell that are essential to health and body. [4] However we are manufacturing and using liquid tincture of *RhodialaRosea* for treatment practice still there is no new drugs which are synthesis compound and safety for using, supporting treatment action.[4] However eggshells are used widely we can't process in a optimum way. The basis of the study is to make a new drug using eggshell in a right way.

Aim of the study: Making new drugs that are synthesis compound mixed with thick tincture and eggshell and determining standard, compound and forming into drug.

Materials: Root and with strong root, eggshell, agents,

Methodology:

1. Determining biological substances in the root and with strong root of *RhodialaRosea*. [2]
2. Determining suitable binders. [3]
3. Determining absorption, quality of disunion, and power. [3]

Result of the study:

1. Raw materials were chosen that prepared in a three different manufacture and the definition of numbers was done on each probe according to standardthe result of first probe was 0.03 , the second probe was 0.1 , the third probe was 0.07 , and we chose the second one for appropriate demand and prepared thick tincture.
2. Tablet with 5 percent with starchy solution which was appropriate demand and measured 100 gram from compound powder and mixed with thick extracts and 5 percent of gelatin solution, 5 percent of starchy solution and formed into tablet.
3. The power in tablet with thick extract of *RhodialaRosea* is 94 percent, disunion 5 minutes, the power in tablet with 5 percent gelatin glue is 96, disunion 10 minutes, the power in tablet with 5 percent starchy is 98, disunion 10 minutes, and prepared by 5 percent of starchy solution was appropriate demand .

Conclusion: Using method of granule and manufacturing tablet it is possible to form into drug using filler, compound powder with eggshell, which are prepared with thick extract of Altangagnuur and 5 percent of thick extract will be used as a binder.

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MEDICINAL PLANT CONTAINING COUMARINS

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Topicality: Raw Rhizomata et radices Phlojodicarpi sibirici, are the source for the drug “Floverin”, which is a natural mixture of coumarins (digidrosamidine and visnadine). “Floverin” has inflammatory properties and is used for peripheral vascular spasm, spastic forms edarteriite, Raynaud’s disease, in mild forms of chronic coronary insufficiency. The drug “Floverin” the pharmacy is not implemented, so it is interesting to study native plants. The area of growth Phlojodicarpi sibirici consists of three parts: Daursky, Selenginsky and Zabaikalsky. In addition, isolated the location of this type are in Yakutia, Krasnoyarsk regions, Irkutsk, Chita and Amur regions in the west. The main area of blanks of raw materials on an industrial scale is the Chita region. [1]

The purpose of this work: is to study Pharmacognostic analysis Rhizomata et radices Phlojodicarpi sibirici

According to goal of this research the following **tasks** are defined:

1. To carry out the macroscopical and microscopical analysis of materials.

2. Identify major merchandising performance.

3. Determine the number of active substances for which standardized commodities.

The object of analysis is the rhizomata et radices Phlojodicarpi sibirici collected 28/07/2010 in Chita region.

For the solution of tasks the following **methods** of the analysis were used: macroscopic and microscopical analysis, phytochemical analysis, thin-layer chromatography, UV - spectrophotometry.

Results: According to pharmacopeia article 42-2667-89 « Rhizomata et radices Phlojodicarpi sibirici », the total content of visnadine and digidrosamidine determined by spectrophotometry, shall not be less than 3%; moisture no more than 13%; other parts Phlojodicarpi sibirici (leaves, stems, including offices in the analysis) is than 17%; of organic impurities no more than 1%; mineral impurities no more than 3%. [2]

Conclusion: Phlojodicarpi sibirici was collecting in Chita region to the general pharmacopeia article 42-2667-89 « Rhizomata et radices Phlojodicarpi sibirici »

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THE STUDY OF BIOLOGICALLY ACTIVE COMPOUNDS OF *RIBES DIACANTHUM .PALL* IN DECOCTION AND TINCTURES

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Introduction: The *Ribes diacanthum.Pall (R.D)* is widely used in the treatment of kidney and urinary tract inflammation, however, it seems that the preparation and usage of decoction with high effect treatment compounds lack in practice. The phytochemical research of *Ribes dianthus* finds that the leaves, stem and branches of the plant contain biologically active compounds such as tannin, saponin, flavonoid and coumarin. [3] Moreover, pharmacological study shows that it supports kidney tissue regeneration and protects kidneys from inflammatory.[4] Innovative aspects of this research is the pharmaceutical study on preparation of decoction and tincture from *R.D* to obtain the stable and easy-to-use medicine, also determination of quantity of biologically active compounds.

Goal: The research was conducted in order to determine the index of tinctures and quantity of biologically active compounds preparing decoction and tinctures of raw *R.D* according to the technological standards.

Materials and methods used in research: The research was carried out in pharmachemistry laboratory at Monos university in April, 2013. In the process of the study, raw materials of *R.D with* 5.25% moisture, and 20%-40% of spirit, aerometer and refractometer were used to determine tannin by the pharmacopeia method.

The result of the study: The raw materials in proportion of 1:10 were prepared to make decoction in accordance with corresponding technology. Similarly, tinctures were prepared in above mentioned proportion by the method of maceration. The newly created tinctures were from light brown to a little dark brown in color, with not too strong spirit odor.

The aerometer measurement indicated that dense of 20%- tincture was 0.970 g/ml whereas 40%- tincture has 0.948g/ml.

Light refracture was measured by the refractometer to determine spirit volume.

The results showed that in the 20% -tincture there was 1.3450 of light refracture and the spirit amount was 21.1%, while 40%- tincture had 1.3520 light refracture and the spirit amount was 35.4%. When the reaction of identification of tannin was experimented we got complete identification reactions of tannin.

That tannin's amount in decoction was 0.327±0.032, whereas it was 0.323±0.078 in 20%- tinctures shows the amount was almost the same. However, the amount of tannin in 40%- tincture was 0.169±0.078, which was 1.9 times less than that in decoction. It is apparent from the study that the amount of tannin of *R.D* in 20% -tinctures is more than that of 40%- tinctures. Therefore it is possible to continue the study in the future.

Conclusion

1. The amount of tannin in decoction was determined
2. Dense, spirit volume and tannin in 20% and 40%-tinctures were measured and as a result, the amount of tannin in 20% -tinctures and decoction is about the same, while this amount in 40%-tinctures is 1.9 times less than that in 20%- tinctures.

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COMPARATIVE STUDY OF SOLUTION OF DICLOFENAC SODIUM TABLET, PRODUCED IN VARIOUS COUNTRIES, IN DIFFERENT SOLVENT MEDIA BY THE *IN VITRO* METHOD

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Introduction: the background and importance of present research work consists on demonstrating how the drug substance digestion changes depending from the media of fluid to be taken.

Purpose: consists in comparative study of solution of the diclofenac sodium film coated tablets, produced in various countries, in different solvent media by the *in vitro* method.

Materials and Methods: the solution research of each 50mg total 54 pieces of film coated diclofenac sodium, produced in three different factories such as A, B and C, was conducted in three different medias in juice (pH=3.8); distilled water (pH=6.7) and mineral water (pH=6). The solution was determined in centrifuge and measured 276 nm in spectrophotometer.

Result: the solution of 50mg diclofenac sodium film coated tablet, produced in three different countries such as A,B and C:

- The amount of drug substance released in the distilled water (pH=6.7) media has been counted in 15 minutes after begin of solution process the A factory-66%, the B factory-58% and the C factory-20%. At continuation of duration of solution had in 30 minutes the A factory-80%, the B factory-86%, the C factory-72%; in 45 minutes the A factory-82%; the B factory-88%; the C factory-66%; in 60 minutes the A factory-82%; the B factory-82%; the C factory-72% each respectively.
- The amount of drug substance released in the juice (pH=3.8) media has been counted in 15 minutes after begin of solution process the A factory-50%, the B factory-42% and the C factory-60%. At continuation of duration of solution had in 30 minutes the A factory-82%, the B factory-40%, the C factory-72%; in 45 minutes the A factory-80%; the B factory-44%; the C factory-38%; in 60 minutes the A factory-56%; the B factory-66%; the C factory-58% each respectively.
- The amount of drug substance released in the mineral water (pH=6) media has been counted in 15 minutes after begin of solution process the A factory-54%, the B factory-30% and the C factory-10%. At continuation of duration of solution had in 30 minutes the A factory-66%, the B factory-62%, the C factory-36%; in 45 minutes the A factory-82%; the B factory-82%; the C factory-38%; in 60 minutes the A factory-74%; the B factory-84%; the C factory-74% each respectively.

Conclusion: from the above-mentioned experiment it is evident that the solution of the diclofenac sodium film coated tablet, produced in different countries, in different solvent media as distilled water, juice and mineral water is relatively different. It has showed how important is to take into account the auxiliary substance quality contained in current drug at choosing the fluid to be taken after the drug.

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THE STUDY OF BIOLOGICALLY ACTIVE COMPOUNDS IN *VACCINUM VITIS IDAEA* DECOCTION AND TINCTURES

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Introduction: The *Vaccinum vitis* is widely used in traditional medicine in the treatment of kidney disorders and diuretics, but contemporary medicine practices its decoction more for the treatment of respiratory disease. The study showed that hydroquinone in *Vaccinum vitis* which is formed by decomposition of arbutin performs antiseptic effects for respiratory system and urinary track. *Vaccinum vitis* contains 8-12% of arbutin and metilarbutin, flavonoids such as, vaccinin, hydroquenone, quiercetin, isoquircitrin, rutin, abicularin and piperin.[3.4]

This study was conducted to get active substances in the form of drugs through extraction of active compounds in the tinction of spirit and other extragents since the decoction of *Vaccinum vitis* cannot be stored longer.

Objectives of the study: To determine biologically active compounds in the decoction and tinctures.

Materials and methods used in the study: The study was conducted in the pharmachemistry laboratory at Monos university in April, 2013. In the process of the study, the decoction of *vaccinum vitis* and 40% and 70%- tinctures were prepared and the quality and quantity of the content, dense, arbutin and tannin were studied in accordance with corresponding standards.

The result of the study: The raw materials in proportion of 1:10 were prepared to make decoction in accordance with corresponding technology. Similarly, tinctures were prepared in above mentioned proportion by the method of maceration. The newly created tinctures were from red brown to dark brown in color, with not to strong spirit odor.

The aerometer measurement indicated that density of 70% tincture was 0.910 g/ml, and density of 40% tincture was 0.967 g/ml, Light refracture was measured by the refractometer to determine spirit volume. The result showed that in the 70% -tincture there was 1.3670 of light refracture and the spirit amount was 62.88%, while 40%- tincture had 1.3602 light refracture and the spirit amount was 36.4%. When the reaction of identification of tannin and arbutin were experimented we got complete identification reactions of arbutin and tannin.

That arbutin's amount in decoction was 0.110+0.005 and tannins amount was 0.0713±0.0003 in 70% tinctures shows the arbutins amount was 0.284+0.003 and tannins amount was 0.13+0.005 and in 40% -tincture the arbutins was 0.147+0.006 and the tannins was 0.147+0.006.

Conclusion

1. As a result of the study there are 0.110g of arbutin in the decoction and 0.07g of tannin.
2. The tannin's amount in the tinctures is higher and the quantity of arbutin is higher in the decoction as compared the quantity of arbutin and tannin in the tinctures with the amount that is in the decoction.

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PHYTO-CHEMICAL RESEARCH OF EXPECTORANT PLANT

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The respiratory tract diseases are distributed widely among Mongolian population but imported drugs are used mostly against these diseases as there is a few medicine manufactured in Mongolia. It necessitates to study plant phytochemical property and to produce natural drugs which have low toxicity effect and expectorate. Hence we have chosen *Thymus gobicus Tczern, Plantago major, Thermopsis Lanceolata, and wild* and *planted Glycyrrhiza uralensis (Fisch)* which are used for expectoration and healing cold in Mongolian traditional and modern medicine.

The main objective is to study phytochemical property of bioactive compound of *Glycyrrhiza uralensis (Fisch), Thymus gobicus Tczern, Plantago major,* and *Thermopsis Lanceolata* which are abundant in Mongolia and are used widely in drugs of Mongolian traditional medicine.

We performed the research taking material assistance of Pharmacy and Phytochemical sector of Drug Research Institute from 2010 to 2011. The root of *Glycyrrhiza uralensis (Fish)* is collected from Bogd sum, Bayankhongor aimag; *Thermopsis Lanceolata* is obtained from Bayanchandmani sum, Tov aimag; *Plantago major* is supported from river bank near Gunt; *Thymus gobicus Tczern* is collected from Songinot, Erdenetsogt sum, Bayankhongor aimag; and the planted root of *Glycyrrhizais* uralensis (*Fisch*) is obtained from Botanic garden of Drug Research Institute in 2010.

The acute toxicity was estimated by using V.B Prozorovsky /1978/ rapid method, and S.G Sidorov /1973/ classification. The content of bioactive compound was evaluated by *Russian XI, and XII Pharmacopeia method. It is found that Plantago major* leaf contains 3.23%±0.25 polysaccharide, 2.81%±0.07 tanin, 0.14%±0.004 flavonoid, 0.12%±0.01 alkaloid, and 37.16%±0.76 extractable compound. Also wild *Glycyrrhizais uralensis* root contains 15.2%±0.10 tanin, 1.83%±0.015 flavonoid, 0.15%±0.01 alkaloid, and 59.6%±0.6 extractable compound. *The planted Glycyrrhiza uralensis* roots contained 15.03 %±0.15 glycyrrhizic acid, 1.6 %±0.1 tanin, 4.36 %± 0.15 flavonoid, 0.14 %±0.01 alkaloid, and 26.56%±1.006 extractable compound. Glycyrrhizic acid in *the planted Glycyrrhiza uralensis* root was met requirement of Mongolian National Standard /MNS 925:90/.

The *Thermopsis Lanceolata* contained 2.9%±0.015 arbutin, 2.7 %± 0.1 flavonoid, 1.3 %±0.15 alkaloid, and 46.33%±0.52 extractable compound.

Bioactive compounds of above plants are estimated and the planted *Glycyrrhiza uralensis* and *Plantago major* are chosen as a raw material for expectorant syrup.

When six different dosages, 1.8 g/kg, 2.7 g/kg, 2.9 g/kg, 3.6 g/kg, 4.5 g/kg, and 9 g/kg, are used in ratio of 1:5 for *tail vein* injections in *mice*, the average fatal dosage was LD_{50}= 3.72 [3.12-4.27] g/kg. When acute toxicity was estimated by S.G Sidorov classification, expectorant syrup has a low acute toxicity.

Conclusion

1. Bioactive compound of *Thymus gobicus Tczern, Plantago major, Thermopsis Lanceolata ,and* wild and planted *Glycyrrhiza* evaluated in quantitatively and qualitatively**.**
2. Glycyrrhizic acid *content in the wild Glycyrrhiza* roots was 15.2%±0.1 while it was 15.03%±0.15 in the planted *Glycyrrhiza* root.
3. The expectorant syrup was prepared, and was its evaluation of acute toxicity and standardization

HEALTH STATUS SCORES OF ULAANBAATAR CITY POPULATION (18-25YEARS) OF MONGOLIA

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Background: Our country's aging for men of 30-39, 40-49 ages it was accelerated aging process and very accelerated aging process. Aging for men of 50-59, 60-69 ages it was normal aging and slowed aging process. Aging for women 30-39, 40-49 ages it was normal end slowed aging process. Aging for women 50-59, 60-69 ages it was slowed and significantly slowed aging process. Otherwise, aging for young groups was accelerated and very accelerated aging process, aging for old groups was normal, slowed and significantly slowed aging process. The aging process of men was more quickly than women in our country [1].

Aim of the stady: To define biological aging, aging indexes and adaptation potential in population of 18-25 years old of Ulaanbaatar city.

Materials and methods: In total 537 person of 18-25 years from Ulaanbaatar city were chosen for the research study which was conducted in 2012. Biological age levels were assessed on the basis of following standards. True biological age was determined with clinical-physiologycal indexes and biological age with chronological age. Adaptation potential have been studied with the help of special indexes and analysis were made with the use of regression method. Quantative data of the study has been processed with the use of statistical data processing software SPSS-19.

Results and discussions: Body mass index of 18-25 aged men of Ulaanbaatar city was 22.2146, cachexia 7.82%, normal weight 79.32%, more weight 10.24%, obesity 2.6%, Aging for men of 18-25 ages it was significantly slowed aging process of men was observed 0.37%, slowed aging process 0.55%, normal aging 0.93%, accelerated aging process 12.47%, and very accelerated aging process was 85.66%. The portion of men with normal adaptation potential was 55.67%, adaptation functional tension was 43.76%, unsatisfactory adaptation was 0.55%.

Conciusions:

1. The portion of cachexia 7.82%, more weight 10.24%, obesity 2.6% of 18-25 aged men of Ulaanbaatar city.
2. Health status was abnormal 98.13% of 18-25 aged men of Ulaanbaatar city.
3. The portion of 18-25 aged men of Ulaanbaatar city adaptation functional tension 43.76%, unsatisfactory adaptation was 0.55%.

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PHYTOCHEMICAL STUDY OF PLANTS THAT HAVE IMMUNE SYSTEM SUPPORTING FUNCTION

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Background: In recent years the number of diseases that arise from compromised immune system has been steadily such as autoimmune and immunity expressing cleseases, research has been going on order to deverlop a highly effective medicine made from natural resources, with low risk of increasing toxicity and side effects that can be used to treat or prevent these diseases. Throughout the world, there are a number of plants that have been identified with immune boosting ability and the following plants Astragalus mongolicus Bunge , Salsola laricifolia Turcz, Oxytropis pseudoglandulosa Gontsch, Inula helenium that have been proven to support the immune system and grow in Mongolia were selected for a phytochemical study.

Goal: An objective was set forth to identify a proper extragent (extraction solvent) to extract the biologically active compounds found in Astragalus mongolicus Bunge , Salsola laricifolia Turcz, Oxytropis pseudoglandulosa Gontsch, Inula helenium plants known to stimulate immune function.

Results : Salsola laricifolia's coumarin content was the highest or 0.33% when extracted with 60% alcohol, the flavonoid content was 0.56% when 55%, 60% alcohol was used as the extragent, 60% alcohol is determined to be an appropriate extragent.

Astragalus mongolicus's coumarin and flavonoid composition was quite high in 25% alcohol, specifically it contained 0.04% coumarin and 0.20% flavonoid.

Inula helenium's 50% alcohol extract contained 0.25% coumarin, 25% alcohol extract had a flavonoid content of 0.59% and 50% alcohol is determined to be proper extragent in future research

Oxytropis pseudoglandulosa's 50% alcohol contained 0.65% coumarin and 0.7% flavonoid, therefore 50% alcohol will be used to extract this plant for furthrer research

THE CHEMICAL AND MICROBIOLOGICAL STUDY OF CULTIVATED CALENDULA OFFICINALIS EXTRACT

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Introduction: Calendula officinalis L. is aromatic herbaceous yearling of the family of Asteraceae. Ethanol extract, decoction and ointment of the plant is used to treat or relieve injury, trauma, erosion, purulent trauma or slow healing abrasions, furuncle, carbuncle, congelation, burn, bed sore, herpes and lichen as cream and spray.

Goal : To define biologically active substances in cultivated calendula officinalis

Materials and Methods: Calendula officinalis has been harvested from Monos pharmacological institute, garden of medical plants and prepared according to the appropriate standards. β –carotene and flavonoids were quantified by spectrophotometer**,** Alkaloid, tannin and ascorbic acids were quantified by tetrameter**,** Extractive substances, ash and humidity were quantified by weight analysis

Results: Quantitative analysis of the flower of calendula officinalis has been carried out following first Mongolian national pharmacopeia and Russian National pharmacopeia XI and defined that β –carotene 1.4313%, alkaloids 0.1229%, flavonoids 2.8817%, tannin 1.2376%, ascorbic acid 0.0702%, extractive substances 40.18%, ash content 11.75% and humidity 5.95%.

Flower of calendula officinalis has been extracted by water, 30%, 50% and 80% ethanol, then made comparative analysis on content of β–carotiene. When extracted by 80% ethanol, content of β –carotene was the highest or 150 mg. Therefore optimum extraction solvent quantity has been defined to be 80% ethanol.

Microbiological analysis has not revealed any organisms and bacteria in solid extract of the plant.

Conclusions:

1. Quality and countable analysis of biologically active substance in the flower of calendula officinalis has been completed.
2. β –carotene the main active substance in cultivated calendula officinalis, is found to be 1.4 gr which that meets Mongolian National Standards of medicine.
3. The 80% ethanol extract of calendula officinalis contained 150mg β –carotene, the maximum content of β –carotene. Hence optimum extraction solvent was found to be 80%ethanol and it will be and used for future research.
4. Microbiological parameters of 80% solid extract of the plant has met quality requirements.

Key words: β –carotene, Biologically active substance, Calendula officinalis,

TECHNOLOGICAL AND CHEMISTRY RESEARCH CONCLUSION OF DENTOS MEDICINE

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Introduction: *Chamaenerion angustifolium* is used for anti-inflammatory purposes in gastric and intestinal ulcers. The stock is prepared from the roots, leaves and flowers and is used for analgesia. The above ground part of *Oxytropis pseudoglandulosa Gonttsch* is one of the ingredients in Dentamon, which is a Mongolian medicine; it is used to prevent and treat gingivitis, paradontitis, redness of oral mucosa, and infections of non-communicable cheilitis. The above ground part of *Herba stellerae chamajasmae's* extract is another component of Dentamon it used for anti-halitosis and it is used to prevent tooth loss and treat paradontitis, gingivitis and inflammation of oral mucosa.

Goal: To determine the tannin concentration of *Chamaenerion angustifolium, Oxytropis pseudoglandulosa Gonttsch, Herba stellerae chamajasmae* and find an optimum extraction condition.

Materials and Methods: We prepared *Chamaenerion angustifoliumand Oxytropis pseudoglandulosa Gonttsch* from Botanic medicinal garden of Monos Pharmacological Academy in September 2012. First the above ground plant *Herba stellerae chamajasmae* was collected according to MNS 3302-94 in Umnudelger soum, Khentii aimag in August 2010.

Results: We prepared an extract of these three plants with distilled water, also with 20%, 40%, 70% ethanol by maceration then we determined tannin concentration by titration; we found out that when the materials are extracted with distilled water, tannin concentration is 2.195%, 20% ethanol -1.756%, 40% ethanol -2.625% and 70% ethanol -1.75%. The results show that when these plants are extracted with 40% ethanol it contained the highest concentration of tannin which was 2,625%.

Previous research has also found tannin concentration to be higher when extracted 40 % ethanol than distilled water, 20 % ethanol , 70 % ethanol and 96 % ethanol. Our research's result is similar to other scientist's results.

Conclusions:

1. We concluded that *Chamaenerion angustifolium, Oxytropis pseudoglandulosa Gonttschand Herba stellerae chamajasmae* contains 3.566%, 1.332% and 1.783% tannin respectively.
2. The optimum extragent was found to be 40 % alcohol contained the highest concentration of tannin. There fore we will use 40% ethanol to extract tannin out of these plants for future research

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ON THE PHARMACOGNOSTIC INVESTIGATIONS SOME MEDICINAL PLANTS USED IN MONGOLIAN TRADITIONAL MEDICINE

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Background: In Mongolia there are over 800 species of medicinal plants, which have advocated in the Indian-Tibetan traditional system of medicine. These species of plants were classified according to their taste, properties, and virtues, and upon this qualification. [1]

In Mongolia treatment of diseases are traditionally done using herbal preparations. In general herbal preparations should show similar advantages like synthetic products. It can be assumted that they show low toxicity, soft activity and also a low range of adverse effects. On account of these aspects the use of herbal preparations became more interested in the treatment of different disease within the last decades.

Just this more intensive use of herbs increased a problem, which is connected with it: this is standardization and the quality control of herbal preparations with respect to its biological active ingredients.

A lot of medicinal plants have being used in science of medicine for a long time. Specifically *Rhubarb* has a long history. These are named in Chinese and Tibetan hospitals as*: jumza, jumgan, shinshin, chubu-rum*.[2] *Zygophyllum potanini*i is grown in the botanical region of trans-Altai, Alash Gobi of the country. It is known as Khulangiin undaa, Argaliin undaa among the people. [3]

Purpose of the study: Purpose of our study is to conduct pharmacognostic study on the aerial and lower parts to define important criterion in quality assurance and to work out project of state standard some medicinal plants.

Materials and methods of the study: The upper side of *Rheum undulatum L* were prepared in July, Saihan sum of Bulgan province, *Zygophyllum Potaninii Maxim* was collected in July Bayan-Ondor sum of Bayanhongor aimag.

Microscopic examination of the plant using Enaval light microscopy.

Biological active ingredients were identified by thin layer chromatography and ultraviolet spectrum. Silica gel GF_{254} (Merck) plates were used for thin layer chromatography. The developed TLC were examined under UV_{254} nm, UV_{365} nm

Amount of total flavonoids and anthraglycoside were defined by spectrophotometer Unicam 5625. Amount of anthraglycoside draw curve of Kobalt chloride GF-XI according to pharmacopoeian article.

Results:

1.Leaf of *Rheum undulatum* has dorsiventral structure, handle has thin wall of surface parenchyma in the middle of leaf parenchyma cell whith large. The leaves of *Zygophyllum potaninii* are isolateral in structure. Vascular bundle of midrib collateral type is nearly ringed. Anamocytic stomata are on both sides.

2. It was determined that anthraquinone compound contained in leaf *Rheum undulatum*. Leaf anthraquinone compound of *Rheum undulatum* by 58.4%. In *Zygophyllum Potaninii* rate of total flavonoid yield contained in medicinal plant material, particle size 2 mm, and concentration of dissolver is 70%, in the most suitable condition total flavonoid was determined 1.38%.

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FOLIUM VACCINIUM VITIS IDAEA.L RESEARCH ON SOME INDICATION OF QUALITY

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Background of research work: Even though eastern and western traditional medicine uses folium vaccinium vitis idaea.L for purifying and healing human body and intensifying urine and sweat output and choler, quality indication of Mongolian *folium vaccinium vitis idaea.L* almost haven't had been researched. So I did research on quality indications of folium vaccinium vitis idaea.L *(Folium vaccinium vitis idaea.L)*.

Purpose: Research on some quality indications of the *folium vaccinium vitis idaea.L*

Research necessities and methodology: In the study, I used *folium vaccinium vitis idaea.L* picked up from Mongolian forest steppe zone. I determined drier, arbutin, vitamin C, ash, moisture, heavy metals, microbiological purification, macro and micro elements, mold and fungus bacteria which are contained in the folium vaccinium vitis idaea.L by numerous ГФ CCCP X, XI and ГФ РФ XII (ОФС) and articles of the Mongolian Traditional Pharmacopei. Statistical data of the research was analyzed by SPSS16 program

Research result: Components that were contained in the *folium vaccinium vitis idaea.L* are ashes (2.85%), moisture (5.8%), drier (3.51%), arbutin (9.21%), vitamin C (0.026%), macro and micro Mg (10.058), Al (2.046), Si (6.031), P (12.446), S (8.824), K (19.084), Ca (30.767), Mn (9.543), Fe (1.037), Cu (0.019), Zn (0.094), Sr (0.030), Ba (0.022) elements, and no bacteria and fungus /ОФС 42-0067-07/ and heavy metals were found. The cranberry's leaf and its internal structure *(Vaccinium vitis-idaea L.)* Leaf's internal structure: The leaf has the shaping structure of dorzoventrali. Mezofill is created by 3-4 rows with column belongings and 5-6 much scattered light belongings. Efiderm cell's wall is thick. Anomotsit shaping gap is shown with Efiderm cell in the same level on the lower surface of leaf.

Conclusion: The research I made issues a conclusion that the folium vaccinium vitis idaea.L doesn't contain poisonous metals, indeed it contains healthy micro and macro elements, arbutin and drier that match ГФ marking. Therefore, folium vaccinium vitis idaea.L can be effective for improving urine and sweat output and choler and purifying and healing human body. Folium vaccinium vitis idaea.L can be recommended to make tea and other biologically active drinks to purify human body.

Key words: Folium vaccinium vitis idaea.L, research on some indication of quality.

INAPPROPRIATE PRESCRIBING PATTERN AMONG ELDERLY PATIENTS TREATED IN THE TERTIARY LEVEL HOSPITALS

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Background: The main principles of pharmacotherapy are to provide pharmaceutical care with right medicine, right doses, in right time. If, the treatment plan can be in evidence based, it will improve treatment efficacy and safety, can prevent from drug related adverse event and reduce the health care costs. Assessing the drug related problems in elderly patients is a main health care and safety issue for the health care system.

Ischemic heart disease (IHD) is one of major cause of mortality and one of the main diseases of morbidity in Mongolia and in the Worldwide.

Objective: Aim of this study was to conduct a retrospective study on inappropriate prescribing pattern among elderly patients with Ischemic heart disease who were treated in tertiary level hospitals of Ulaanbaatar.

Methods: Total of 438 patient's records who were treated with diagnosis of IHD during the 2011 – 2012, was collected randomly from main three state hospitals of Ulaanbaatar. A retrospective analysis of inappropriate drug prescription was used Beers criteria (2012).

Variables of study were patient's diagnosis, age, sex, names, doses and route of medications.

Results: The mean age of the participants was 67.38±0.24 and 54.6% of participants were male and 44.4% were female.

The trends of rational use of drug and number of drug and drug cost per patients were different in each tertiary level hospitals of Ulaanbaatar. In I state hospital, number and cost of drug per patients were higher than second and third state hospitals. The result were shown that in all three hospitals, more than 50 percent of total drugs per patients were injection, less than 50 percent of total used drug per patients were from standard therapeutic guideline.

The most common inappropriately used drugs were as follows: amiodarone (16% at the I state hospital; 10% at the II state hospital; 3% at the III state hospital), dipyridamole (51% at the I state hospital; 3% at the II state hospital), amitriptyline (29% at the I state hospital; 20% at the III state hospital), nifedipine (33% at the II state hospital).

The use of that are inappropriate with certain medical conditions were common in case of IHD patients with peptic ulcer comorbidity. Non-steroid anti-inflammatory drug + acetyl salicylic acid combination were used in 3% of patients at the I state hospital, in 4% of patients at the II state hospital and 1% of patients at the III state hospital.

Conclusion: Among the medications used to elderly patients with IHD, 15 medications were listed in potentially inappropriate medication in elderly (Beers criteria) independent of diagnosis. In I and II state hospitals, usage of potentially inappropriate medication were greater than III state hospital.

Key words: inappropriate drug, Beers criteria, ischemic heart disease, treatment guideline,

ATTITUDE OF DOCTORS AND PHARMACISTS TOWARD DRUG SAFETY IN HEALTH CARE SYSTEM OF MONGOLIA

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Background: The detection of adverse drug reactions has become increasingly significant because of introduction of a large number of potent toxic chemicals as drugs in the last two or three decades. Adverse drug reaction (ADR) monitoring and reporting activity is in its infancy in Mongolia. The important reason is lack of awareness and lack of interest of healthcare professionals in ADR reporting and documentation.

Goal: To evaluate implementation and trends of health care professionals toward adverse drug reaction reporting at first, second and tertiary level hospitals.

Materials and Method: A prospective study was carried out in first and second level hospitals of Khentii, Dundgovi, GoviAltai, Selenge and Uvurkhangai provinces, Sukhbaatar, Songinokhairkhan district hospital and First maternaty hospital. From tertiary level hospitals were selected First national hospital, Third national hospital, National center of oncolgy, National center of traumatolgy. The questionnaire survey involved total of 175 doctors and pharmacists.

Results: The study result have shown that most of health care profeesionals (76 – 80%) of first and tertiary level hospitals have known about legal bases and theie duties for the ADR reporting than health care professionals (69%) of secondary level hospitals. And, pharmacists more activily involve in ADR reporting than doctors. The main reasons of healthcare professionals ADR underreporting were lack of time to report, lack of awarness about ADR and not knowing importance of ADR repoting.

The implementetion extent of ADR reporting was in tertiary level hospital better than in secondary level hospitals. Lacking of clinical pharmacists and clinical pharmacologists and unproper activitity of Drug therapeutic committee in secondary level hospitals were the reason of poor implementing and underreporting of ADR.

Conclusion: The study result has shown that there is needed to encourage doctors to the adverse drug reporting activity and implementation of drug safety should be strengthen in each level of health care system.

Key words: adverse drug reaction, drug safety, drug therapeutic committee, rational use of drug

THE RESULT OF ARBUSCULARMYCORRHIZAL (AM) FUNGI RESEARCH OF MONGOLIA

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Introduction: Arbuscularmycorrhizal (AM) fungi inhabit various ecosystems with a wide range of host plant species. However, as these funge are obligate symbionts with livings roots, the hosts play an important role in mycorrhizal development, spore formation and distribution of AM fungi. The communityof AM fungus species in the rhizospere may vary with host species (McGonigle and Fitter 1990). Whether the host can influence diversity of mycorrhizal fungi under controlled condition is an important issue as different researchers often use different test plants for studies on AM fungal diversity (Frank-Snyder et al. 2001; Helgason et al. 1998).

Research main purpose is to study spores of arbuscularmycorrhizal fungi (AMF) and to classify spore types from soil.

Materials and methods: Samples were collected from six diverse types of soil: larch forest, larch forest edge, mountain slope, wetlands, steppe and winter camp around “ShajinKhur” of Bogdkhanmountain.

About 2 kg soil (2-20 cm) was collected from five randomly selected locations at each site. Soils at each sity were bulked, mixed and five replicate subsamples taken. Spores of AM fungi of each soil were extracted by wet-sieving from aliquots ((50 ml))and identified to species (Schenck and Perez 1988).

Results: The soil sample was taken from the six sites such as Larch forest, Larch forest edge, Foot of mountain, washland, steppe, winter camp which are included to the natural various zone near “ShajinKhurkh” of Bogd Khan Mountain. By the survey the research team had found 26 species of spore to carry out survey on soil arbuscularmycorrhizal fungal (spore.

The survey was carried out at the flora laboratory of “School of Biology” under the University of Inner Mongolia. We had the following result when the research work was done according to the research work methodology. Including:

26 species of arbuscularmycorrhizal fungal (AMF) spore were determined from soil sample from the six sites near ShajinKhurkh of Bogd Khan Mountain, Acaulaspora 5 species, Diversispora 3 species, Glomus 15 species, Entrophospora 1 species, Scutellospora 2 species. 16 species from Larch forest, 14 species from steppe, 12 species from washland, 11 species from Larch forest edge, 8 species from Graizing grassland, 7 species from mountain foot were determined. There is abundant spores of 4 AMF species such as Acaulaspora sp1, Acaulaspora sp3, Glomusambisporum, G.microaggregatum at 6 sites where the research sample was taken. Also there is abundant spore such as G.fasciculatum at larch forest, Glomusmosseae larch forest edge, Glomusclarum at washland, Glomus sp2 at graizing grassland, Entrophosporainfrenquens at steppe.

Conclusion: The soil sample was taken from the six sites such as larch forest, larch forest edge, foot of mountain, washland, steppe, winter camp which are included to the natural various zone. In the result, 26 species, 5 genera of spore to carry out survey on soil arbuscularmycorrhizal fungal (AMF) spore were determined including Acaulaspora 5 species, Diversispora 3 species, Glomus 15 species, Entrophospora 1 species, Scutellospora 2 species. There is abundant Glomus type spore.

The research work is being implemented to continue doing the AMF survey further.

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THE PHYTOCHEMICAL STUDY OF CULTIVATED CALENDULA OFFICINALIS

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Introduction: *Calendula officinalis L.* is aromatic herbaceous yearling of the family of *Asteraceae*. Ethanol extract, decoction and ointment of the plant is used to treat or relieve injury, trauma, erosion, purulent trauma or slow healing abrasions, furuncle, carbuncle, congelation, burn, bed sore, herpes and lichen as cream and spray. These pharmacological functions are related to *carotinoid*, *stearin* acid, *triterpinoid, phenolic* compound, polysaccharide, β-carotene, tannin, flavonoids found in flower of *calendula officinalis* [2, 3].

Goal: To define biologically active substances in cultivated *Calendula officinalis*

Materials and Methods: *Calendula officinalis* has been harvested from Monos pharmacological institute, garden of medical plants and prepared according to the appropriate standards. β –carotene and flavonoids were quantified by spectrophotometer**,** Alkaloid, tannin and ascorbic acids were quantified by tetrameter**,** Extractive substances, ash and humidity were quantified by weight analysis[1]

Results: Quantitative analysis of the flower of *calendula officinalis* has been carried out following first Mongolian national pharmacopeia and Russian National pharmacopeia XI and defined that β –carotene 1.4313%, alkaloids 0.1229%, flavonoids 2.8817%, tannin 1.2376%, ascorbic acid 0.0702%, extractive substances 40.18%, ash content 11.75% and humidity 5.95%.

Flower of *calendula officinalis* has been extracted by water, 30%, 50% and 80% ethanol, then made comparative analysis on content of β–carotiene. When extracted by 80% ethanol, content of β –carotene was the highest or 150 mg. Therefore optimum extraction solvent quantity has been defined to be 80% ethanol.

Microbiological analysis has not revealed any organisms and bacteria in solid extract of the plant.

Conclusions:

1) Quality and countable analysis of biological active substance in the flower of *calendula officinalis* has been completed.
2) β –carotene the main active substance in cultivated *calendula officinalis*, is found to be 1.4 gr which that meets Mongolian National Standards of medicine.
3) The 80% ethanol extract of *calendula officinalis* contained 150mg β –carotene, the maximum content of β –carotene. Hence optimum extraction solvent was found to be 80%ethanol and it will be and used for future research.
4) Microbiological parameters of 80% solid extract of the plant has met quality requirements.

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COMPARATIVE ANALYSIS OF SOME CAPSULES REGISTERED IN MONGOLIA

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Introduction: Mongolian national drug manufacturers produce only 20% of required medicines and most raw materials used for the manufacturing are imported from China [1]. 2574 medicines and active pharmaceutical ingredients were registered in 2011 and 488 of them were antibiotics [2]. There were 36 medicine manufacturers and only two of them manufactured antibiotic capsules in 2010 [3]. In last year number of manufacturing capsule has been increasing.

Aim: The main aim of this investigation was to define items of imported and manufactured capsules and do comparative analysis of some capsules and determine types of the capsule drugs registered in Mongolia.

Material and methods: Registered medicine list of Mongolia and questionnaire with 22 questions, and capsules of 2 domestic and 3 foreign manufacturers were used for this investigation. Pharmacists working in seven domestic manufacturers were involved in the questionnaire study. Capsules were analyzed at the Drug Control Laboratory of Monos Pharm Manufacturer.

Results, conclusion: 10.84% of registered medicines are capsules, of which 16.33% from India, 7.82% from China, 5.78% from Indonesia, 8.5% from Slovenia, and other countries. 3.4% of registered capsules are manufactured in Mongolia.

All medicine manufacturers import hard gelatin capsules from China and use for the manufacturing. 71.4% of domestic manufacturers use technological parameters, 57.1% stability and dissolution, 28.5% chemical properties and interaction with active pharmaceutical ingredients and excepients as the main criteria for the capsule selection used for the manufacturing. 40.0% of capsules used for the manufacturing are 0 size capsule.

72.2% of manufactured capsules are antibiotics. Quality parameters of imported and manufactured Quality of manufactured and imported Ampicilline capsules were determined in the frame of this investigation. All Ampicilline capsules were met the requirements of MNS 5097:2007.

Conclusion: Items of imported and manufactured capsules, selection criteria of capsules used for the manufacturing were determined. Comparative quality analysis of Ampicilline capsule was done and some quality parameters of imported and manufactured Ampicilline capsule were in accordance of MNS 5097:2007.

Key words: Ampicillin trihydrate 500 mg, dissolution test

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THE PHYTOCHEMICAL INVESTIGATION OF LEAF *CACALIA HASTATA*

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Introduction: It grows a larch and Siberian Pine forest, in its meadow, edge and glade, bank of the river and thick bushes forests covering Khuvsgul, Khentii, mountainous and fertile pastures, Mountain range, Khovd and Mongol Altaic Mountain range. Leaves of Cacalia hastat, its preparation is effective to release poisoning, reduce inflammation, support liver and gall procedure internal treatment and an external application for inflammation, fast healing, edema decreasing. Drug preparations extracted from upper part of the land is against over oxidation, confirming cell membrane, protecting stomach side. Its leaves are for fast healing scald and inflammation, gallbladder diseases, poison fever and decreasing fever in Mongolian traditional Medicine But the root is for releasing poisoning and cold treatment.

Goal: The aim is to have study of phytochemical *Cacalia hastata* leaf.

Materials and Methods: We performed the research taking material assistance of pharmacognozy laboratories in Monos university from 2012-2013. The quantitative and qualitative analyses of plant bioactive compounds were evaluated by *Russian XI Pharmacopeia and the method according to Mongolian National Standard.* Result of the study was developed by SPSS 16 and End note programme.

Result: The quantitative and qualitative analyses of plant bioactive compounds of *Dianthus superbus* upper part of the land were evaluated by Russian XI Pharmacopeia and the method according to Mongolian National Standard and alkaloid, tannin, coumarone, flavonoid and natural active substances were found.

Conclution: It was carried out phytochemical investigation of the *Cacalia hastata* using spectrophotometer as a result we determined that it contains 8.53 % of sum flavonoid, 12.3 % coumarone. Amount of biological active compound-tannins was 15 %, alkaloid 0.0074 %.

SOME TECHNOLOGICAL STUDY OF EMULSION FORMULATIONS OF *HIPPOPHAE RHAMNOIDES OIL* AND METRONIDAZOL

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Introduction: An amount of the percentage of emulsion in Mongolian drug market is very small. Sea buckthorn oil has copious amounts of Phytosterol, Vitamin E, Beta-Carotene, Anti-Oxidants, and Carotenoid which helps to treat various skin conditions, including burns, eczema, psoriasis, dermatitis, sunburn, wounds and regeneration of skin cells. Also, Metronidazole has been used for the treatment of trichomoniasis, amoebiasis, and giardiasis. Anaerobic bacterial infections caused by *Bacteroides* species, fusobacteria, and clostridia respond favorably to metronidazole therapy.

Therefore, there is a requirement to research a new method of technology using *Hippophae rhamnoides* oil and metronidazol to obtain a new emulsion to produce a national product which can substitute an imported drug preparation. It can be used externally in the form of a 1-percent, 5-percent, or 10-percent emulsion to treat inflammatory processes. The research study focuses on the standardization and technology of new emulsion and to seek possibility to produce a local manufactured emulsion. This research will help to solve one of the main medical issues in our country.

Aim of the research work: To prepare emulsion for the treatment of skin inflammatory disease, from the *Hippophae rhamnoides* oil and metronidazol and to determine their quality criteria.

Materials and methods: The study was completed at the '' Monos'' institute. Quality of Hippophae oil and metronidazol was determined by their biological activity compounds such as β-carotenoid and Metronidazole using spectrophotometric method.

Results: We developed a technological procedure of 1%, 5%, 10% emulsion preparation. It contains 1,5,10 gram metronidazol, hippophae oil and lanolin.

RESULTS OF THE STUDYOF THE PHARMACOLOGICAL ACTION OF EXPERIMENTAL DRUGSOF PLANT ORIGIN ON THE PATHOLOGICAL MODEL OF GASTRIC ULCERS

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Background: To investigate the pharmacological actions ofthree groups of drugs containing: Plantago major L. extract, Calendula officinalis L. extract,or mixtures of both. The three investigational drugs were compared to Omeprazole, a standard drug produced in Bulgaria, which inhibits thereleaseof enzymesof the secretary cellsof the mucous membranesof the stomach.[1]

Materials and Methods: The effects of the medicinalsubstances were investigated on “Wistar” breed of white rats. Pathological model of ulcers wasformed by injecting the rats with 10% acetic acid./ Okabe, Koth.S1978 /. [2] The experimental animals were given either of the three versions of the new herbal medicine and compared to the rats given Omeprazole. After treatment the ulcer index, MDA and sialic acids in the serum were determined. [3]

Result: The results showed that in the third day of the investigation, the sialic acid levels in the blood of the test group, which was given the mixture of the two plants, was significantly reduced ($p<0.05$) compared to the control group.

Conclusion: This indicates that medicinal substances given to the rats, whichcontained the mixture of Plantago major L. and Calendula officinalis L. has accelerated the regeneration of the stomach, decreased the stomach cell damage and overall has antioxidant protective effects.

Key words: Stomach, gastric ulcers, acetic acid, sialic acid

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TECHNOLOGICAL AND STANDARDIZATION STUDY OF "CHLORPHENOS"100 ML SYRUP MEDICINE

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Background: The investigational new medicine "Chlorphenos 100 ml" is being developed to treat allergy, flu, and inflammatory diseases.[1] The main biologically active substance chlorphenamine maleate blocks histamine H1 receptors and reduces tearing and swelling of the nasal mucosa.[7,9] In this study, "Chlorphenos 100 ml" was tested to see if it met standards for a syrup medicine published in national and international pharmacopeia.[1,7]

Goals: The aim of this study was todevelop a new generic syrup medicine technology and standardization procedures.

Materials and Methods: "Chlorphenos 100 ml" was prepared following general methods used to produce syrup medicines.[4] Based on the standardization protocols of national and international pharmacopeia, the presence of chlorphenamine maleate was determined using thin-layer chromatograpy and the chlorphenamine maleate content was established using spectrophotometer techniques.[2,3, 8] The pH and the density of the syrup medicine were determined using potentiometric and hydrometric methods respectively. [4,5]

Results: The Rf value of the sample from the syrup medicine and the standard chlorphenamine maleate was identical. The main active ingredient chlorphenamine maleate concentration was determined to be 0.43 mg/ml. The pH of the syrup was measured to be 4.17 and the density was 1.174 mg/ml.

Conclusion: The results of this study indicated that the investigational new drug Chlorphenos 100 ml meet the standards set forth in the national and international pharmacopeia. Theseresult also validate the technological protocol used to produce Chlorphenos 100 ml syrup. Therefore this medicine is determined to be suitable for factory production.

Key words: Chlorphenaminemaleat, Chlorphenos syrup

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HISTORY OF WESTERN ANATOMY IN MONGOLIA

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In the History of Yuan Dynasty, the 81st chapter of scripture "…Khubilai Khaan was established the Medical school in May, second year of Jun Tung". This is certifying that first confidential hospital was formed in 1261 of public reckoning. In 1280 Mongolian State 5th article of law /one of the codes of law for 13th century were the hospitals /Military/ approved by State law during the 10-13th century, which had their strong rules and regulations.

Doctor Khusekhui, a Mongolian nationality was printed the three volumes of book, which titled "Brief Practical Guide to Healthy Diet" printed in 1330. Also there are high needs to search theoretic creature about Mongolian food.

Starting since 17th century Mongolian doctors, scientists were started to establish flow of "Four Medical Tantras" and based on "Astanga Hrdayam Samhita" written by famous Doctor Bagbat from Indian Auyrved /1500-1600/, "The explanation of Quintessence of the Eight Branches" his explanatory literature by Chandranandan, was compiled by sage Doctor, Elder Utog Yondongombo /729-854/ and Younger Utog Uoyndongombo reviewed again "Four Medical Tantras" during XII century.

Study of personal history and works of famous Mongolian doctors and scholars is a tool for drawing historical tree of the traditional medicine. Of particular importance is period between 17th and 19th century which is a golden period of traditional medicine development. In this research project we identified the details of personal history of some scholars who had great contribution into the development of traditional medicine including Zaya Pandit Namkhaijamts from Oirad (1559), Lama Gegeen Luvsandanzanjaltsan (1639-1704), Zaya Pandit Luvsanprinlei (1642-1715), Lord Gombojav from Uzemchin (1680-1750), Arya jonlon Pandit Agvaanluvsandanbiijantsan (1770-1845), Sube hambo Ishbaljir (1704-1788), Tsahar gevsh Luvsanchultem (1740-1810), Mindol nomuun Khan (1789-1838), Toin Jambaldorj (1792-1855), Luvsanchoimbal (19th century), Jigmeddanzanjamts (19th century), Ishdanzanvaanjil (1852-1906), Agvaangenden (19th century), Yondon (19th century), Lunrig Dandar (1831-1920), Choijamts (1860-1928). In addition, we also made observations on their works from the perspectives of theory, methodology and philosophy. Comprehending a science in light of its own methodology is important because then it opens up for observations from the perspective of other sciences and methodologies as well as creates new ideas.

TECHNOLOGICAL STUDY OF PREPARING DICLOFENAC GEL

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Introduction: It is required to develop drug formulations and increase local preparations substituting the import preparations. The utilization of a new drug formulation of diclofenac gel is an example of a medicine which is encouraged to be prepared locally. Diclofenac gel is a cyclooxygenase inhibitor, which is a non-steroidal anti-inflammatory drug (NSAID) taken to reduce inflammation and as an analgesic reducing pain in certain conditions. It is important to develop technology and standard for diclofenac gel type of medicine in Mongolia.

In 2010, domestic manufacturers produced about 30-40 percentage of demand in Mongolia. However, there are many manufacturers that produce the same type of medicines. This shows that there is a need for local manufacturers to meet local demand. It is an indication of urgency in bringing in new technologies, new drug formulations, activating drug research and scientific work in domestic drug industry.

Based on research, in 2011, non-steroidal anti-inflammatory drugs were the most sold drugs, which had a market share of 29.2%. Also in 2010, non-steroidal anti-inflammatory drugs of gel formulation had a market share of 130 million Tugriks.

In 2011, there were nine different manufacturers of diclofenac gel have been registered to Mongolian Medicine Registrar/LICEMED/. They are:

-Clafen 1%-20.0 produced in Antibiotice Ltd, Romania

-Feloran 1%-60.0 produced in Balkanpharma Troyan AD, Poland

-Almiral1%-10.0/25.0 produced in Medochemie Ltd, Cyprian

-Olfen 1%-20.0 produced in Mepha Ltd, Switerland

-Voltaren 1%-20.0/50.0 produced in Novartis pharma, Switzerland

-Dicloran Plus 1%-30.0 produced in Unique pharmaceutical laboratories, India

-DiclofenacAcri 1%-30.0 produced in Acrihin Ltd, Russia

-Diclovit 1%-20.0 produced in Nijpharm, Russia

-Diclomol 1%-20.0 produced in Win Medicare Ltd, India.

These gels are packaged between 20-60 grams and the are price ranges from 2,700-12,000 Tugriks.

In the world, nowadays diclofenac gel is most commonly produced.

Diclofenac gel is colorless, and it penetrates the affected area quickly and effectively. The gel has an advantage of delivering full drug concentration to the affected area quickly, while it is convenient and pleasant to use.

Purpose of study: The purpose of study's to develop a Diclofenac gel technology for the first time in Mongolia. In order to reach my purpose, which owe as follows:

- To determine convenient ingredients and gel base of gel formulations
- To develop a layout explaining gel manufacturing technology
- To formulate raw ingredients based on the developed of the gel
- To develop an evaluation and quality control system for producing gel

Materials and methods: Research work was done at the Monos School of Pharmacy and Drug Research Institute.

Triethanolamin and Glycerin from Tsetsuuh LLC, Diclofenac sodium, hydroxypropylmethylcellulose, and menthol from Monos Pharm LLC, Carbomer 940, Ultrez-21 and Propylenglycol from Monos Cosmetic LLC were used for this research.

To determine the drug ingredient: To determine gel formulations, primary and secondary ingredients were chosen carefully to maintain chemical compatibility and stability.

Developed gel formulation was checked for quality control, which includes drug content, pH,

appearance/Homogeneity/, and viscosity by Russian Pharmacopoeia XI and Mongolian Primary Pharmacopoeia. Permeability studies and skin irritation test was performed by USP.

Result: First, carbopol concentrations of 0.5%, 1.0%, 1.5% and 1.2%, Ultrez-21 concentrations of 0.5%, 0.8%, and 1%, and hydroxypropylmethylcellulose concentrations of 3%, 4%, 5% were prepared as gel formulations.

Of those, carbopol concentrations of 1.2% and 1.5%, and Ultrez-21 concentrations of 0.8% and 1.0% were relatively better compared to other concentrations in terms of meeting drug content, appearance, pH level, and viscosity requirements. 0.2 gram of Menthol was added to provide comfort and pleasant odor when gel is applied as well as providing release of diclofenac sodium

Final products were compared to similar diclofenac gels in the market in terms of pH level, drug content, skin irritation, and release of active substance. Of those final products, Ultrez-21 concentration of 1% resulted to be the most similar to the diflofenac gels in the market that satisfy the qualities mentioned above.

Conclusion:

1. The Ultrez-21 1% is determined to be the best gelling agent and 0.2 gram of Menthol is determined to be the best amount for increasing drug permeability.
2. Developed technological procedure for preparing diclofenac gel.
3. To determine criteria for quality control, gel drug content, appearance, pH and viscosity were shown to be the most convenient measures.

HOW DOES READING ACTIVITY AFFECT TO LEARN PHARMACY ENGLISH?

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Backround: Reading is an essential part of language teaching at every level because it supports learning in multiple ways. Reading skills can often be challenging to teach. Some students are natural readers; others need extra help and guidance to improve their reading level. Though your student must be self-motivated and willing to learn, you can do much in your role as teacher to encourage him and help speed the process of improving his reading.

Teachers can help students learn when and how to use reading strategies in several ways.

- By modeling the strategies aloud, talking through the processes of previewing, predicting, skimming and scanning, and paraphrasing. This shows students how the strategies work and how much they can know about a text before they begin to read word by word.
- By allowing time in class for group and individual previewing and predicting activities as preparation for in-class or out-of-class reading. Allocating class time to these activities indicates their importance and value.
- By using cloze (fill in the blank) exercises to review vocabulary items. This helps students learn to guess meaning from context.
- By encouraging students to talk about what strategies they think will help them approach a reading assignment, and then talking after reading about what strategies they actually used. This helps students develop flexibility in their choice of strategies.

The aim of the research

The aim of the research is to investigate how students think about reading and do they like to read.

The research method: A "questionnaire" is used to determine students' enjoyable experience in learning the reading.

Result from questionnaire: This questionnaire is taken from 1 year students of "Monos" institute. There were involved 78 students. 67 percent of students answered that they sometimes read about their reading habit. That means reading is non-regular activity for our students.

In this case students answered that they read a book. Reading a book is possible data about reading habit. That means 86% of the students read and understand the text in English slowly.

60% of students answered "yes". That means our students think reading in English is useful for them to learn English. 41% of students answered that they understand the main idea of the text after reading two times. That means our students' reading ability is not too bad.

Conclusion

1. As you look at this questionnaire students still like to read in English, which is very good sign.
2. As teachers we need to encourage them as well as make them understand the marvel reading.
3. Without reading no reflecting and without reflecting you can't speak in any language, also it belong to mother language.

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STUDY WORK FOR STRUCTURE OF THE WAREHOUSE OF THE PHARMACEUTICAL WHOLESALE CENTER AND THEIR ACTIVITIES.

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Foundation of the research: The issues of safety and qualified medicine industrial, supplyment and maintenance is the counterpart of national security policy about any nations. Mongolia has been importing over 80% of domestic demand of medicine.

New drugs have accessed into marked and medicine distributors or suppliers, pharmacies have established as many, thus its generating the needs to improve the legal environ for to reach the new level of quality control, medicine suppliers structure and activities, then also to verify the safety of imported or local medicine.

May having formulize the requirements of medicine warehouse, remodify the standard of Medicine Supply Organization can be the first step to solve the problems which Medicine Supply Organization has been facing.

The purpose and goals of research work: Submitting following goals in the frame of the purpose to analyze the condition of the Medicine Supply Organization's warehouse, study the foreign country's GSP and utilize the standard instruction of medicine warehouse by determine the method of access it into Mongolian bigger Medicine Supply Organization. Thereof:

1. Make analysis and assessment on the current condition of Mongolian Medicine warehouse.
2. Conduct the research work based on the guidance of World Health Organization, European Union warehouse standard and other foreign country's warehouse standard.
3. To utilize the medicine warehouse standard guidance for Mongolia.

The methodology: Have selected and incorporated with 5 top company which are operating as medicine importer based on value of imported products for last 3 years and 3 The pharmaceutical wholesale center which had lesser scope and totally means 8 companies.

We used following methods such as observation study, open review survey, schematic and comparative study, method of interview and review and documentation method.

THE RESULT OF RESEARCH WORK: Even though, those research involved organizations have met with the requirements of MNS 5530:2009 Medicine Supply Organization Standard by 71%, and risk assessment was in low risk category as by 20% under the State Specialized Inspection Agency, but accordingly with the World Health Organization's formulized GSP's guidance, it haven't freezing and cooling chain storage condition of medical product storage. Research involved The pharmaceutical wholesale center provides activity supervision indication of GSP's guidance by 30%, required parts of warehouse structure by 43% and supportive parts of warehouse operation by 22%.

CONCLUSION:

1. However, that research involved the pharmaceutical wholesale center have reached 71% of the requirement of MNS 5530:2009 standard of Medicine Supply Organization and fitted in low risk category as 20% according with the risk assessment of State Specialized Inspection Agency, but was lower by 68% than building construction standard and activities according with the GSP's guidance.
2. Have determine the solutions for resolvable factors which are unreached the requirements of GSP based on the study of World Health Organization, European Union GSP requirements, Kazakhstan, Bulgaria, Germany and Russian by linked it with the condition of research involved organizations.

Utilized the Mongolian medicine warehouse standard guidance.

INNOVATIVE METHODS OF TEACHING PHARMACY ENGLISH

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Abstract: The purpose of this paper is to evaluate the Mongolian traditional methods of teaching as well as multimedia teaching and suggest other useful teaching methods that can be attempted in imparting knowledge to the students. Basically teaching must include two major components sending and receiving information. Ultimately, a teacher tries his best to impart knowledge as the way he understood it. So, any communication methods that serve this purpose without destroying the objective could be considered as innovative methods of teaching. The use of innovative method in educational institutions has a potential not only to improve education, but also to empower students, strengthen governance and galvanize the effort to achieve the human development goal for the country.

Aim: Introduces importance of Pharmacy English and Develop innovative teaching methods.

Introduction: Education is a light that shows the mankind the right direction to surge. In academia over 50% of all research is published in English. (In some science fields virtually all studies are published in English) The language of business, technology, science, the internet, popular entertainment and sports. So these facts estimate how important the English is. 93% of the employees say English is required for potential career promotion.

We have to convert English into sport and learning process has to generate interest in students and motivate them to stay back in the institution than run away from it. Education should become fun and a thrill to them rather than burden and boredom. It is an integral part of their growth and helps them to become good citizens.

Methods and Materials: Communicative teaching methods (CTM), presentation practice production (PPP), Cognitive Code Approach (CCA), Situational Approach (SA), survey, examination and mu Acrosssltimedia resources and teaching experiences of various fields.

Conclusion: Across the world information technology is dramatically altering the way students; faculty and staffs learn. Researchers recommend that the teaching would be highly effective if the teacher start to use recent multimedia technology and various teaching methods to make the lesson more effective and language learning as fun.

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International Journal of pharmacy teaching & Practices 2013, Vol.4 Issue 1, 442-446 Awareness of Pictograms among the Undergraduate Pharmacy Students in a Pharmacy College in Karnataka, India: A Preliminary Study

ACETHYLCHOLINESTERASE INHIBITORY ACTIVITY OF SOME MONGOLIAN PLANTS

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Introduction: Alzheimer's disease(AD) is the most common neurodegenerative disease and characterized by memory impairment, language deterioration, cognitive dysfunction, behavioral disturbances and deficits in activities in daily living [1,2]. Acetylcholinesterase(AchE) inhibitors have been used effective treatment for AD disease targets[3]. Therefore, it is needed to isolate bioactive compounds from plants.

Materials and methods: Trisma buffer pH 8.0, DTNB(5.5-dithiobis-2-nitribenzoic acid), acethylcholinesterase enzyme, acethylcholin iodide-Ach and methanol reagents were used. Plants were collected from Mongolian khangai, steppe, gobi regions. The dried plant material were extracted with methanol then evaporiated at 40^0*C in vacu.* AChE inhibitory activity was determined using the Ellman's colorimetric method.

Calculation:

$A_{10\ min}$-$A_{00min=\Delta}A$ Inhibition % =100x (A10 control-$_{\Delta}$A sample)

A10control A=absorption

Results and discussion: From the 65 samples studied, which prepared from different parts of 44 plants species, *Salsola passerine, Rumex pseudonatronatus, Solidago dahurica, Chelidonium majus, Anthriscus sylvestris, Linaria buriatica* and *Achnatherum splendens* showed more effect, their inhibition percentages were 32%, 30%, 30,7%, 35,7%, 61,5%, 29,8%, 28.8% and 26.6%, respectively. Out of the plants, eight extracts were not identified AChE inhibitory activity and 30 extracts showed 10-20% weak inhibition ratios. This work represents some Mongolian plants have AChE inhibitory activity.

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PRESCRIBING BEHAVIOR AND PHARMACEUTICAL MARKETING PROMOTIONS

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Irrational use of medicines is a major problem of worldwide. WHO estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly. This incorrect use may take the form of overuse, underuse, and misuse of prescription or non-prescription medicines.

And WHO ascribing that there are four common problems for irrational use;

- Polypharmacy /use of too many medicines/
- Overuse of antibiotics and injections;
- Failure to prescribe in accordance with clinical guidelines;
- Inappropriate self-medication.

This list estimates us an irrational use of prescription medicines is common problem of irrational use of medicine. And so there are many factors contributing irrational use of prescription medicines. But substantial factor is inappropriate unethical promotion of medicines by pharmaceutical companies. Most prescribers get medicine information from pharmaceutical companies rather than independent sources such as clinical guidelines. This can often lead to overuse. Some countries allow direct-to-consumer advertising of prescription medicines, which may lead to patients pressuring doctors for unnecessary medicines.

Many developing and developed countries ascribing that to protect the public health by assuring prescription medicine information is truthful balanced and accurately communicated.

Irrational use of medicines and problem of pharmaceutical promotions are determined here in above by WHO and FDA.

Our health care system can't yet determine that "How to marketing promotion for prescription medicines affects prescribing behavior?" and how we can complete problems of promotions of prescription medicines.

It is essential that under today's circumstances this deficiencies are immediately identified and eliminated, and the directions for further course of action are appropriately determined.

ANALYSIS OF DISTRIBUTION & STUDY OVERVIEW OF THE GENUS POLYGALA & LANCEA IN MONGOLIA

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Introduction: In recent times, human tend use natural drugs which have low toxicity effect. We found out many drugs used in Mongolian and Tibetan traditional medicine.

The genus Polygala (Polygalaceae) is represented in Mongolia by only three species (**P.tenuifolia Willd, P.sibirica L, P.hybrida DC**). These are well-known traditional Mongolian herbs, especially Tibetan medicine and modern medicine used for treatment of many diseases, such as prevent dementia and brain protection effects, antitumor activity and influenza, pneumonia, pharyngitis, heart disease and dysentery, and used as an antiphlogistic and for detoxification, expectoration. Some researchers have reported [4] phenols and triterpenes from this plant.

In Mongolia, P.tenuifolia Willd, P.sibirica L, P.hybrida DC are distributed widely in various areas such as khangai, khentii, khubsgul at al.

These plants are substituted by Tibetan lanceta (Lancea tibetica Hook.f.et Thoms. Scrophulariaceae. The Tibetan medicinal plant used for many disease in oriental medicine such as Tibetan, Chinese and Mongolian.

Furthermore, this plant grows only in Tibetan autonomic region of China and Mongolia.

The flowers, leaves and fruit are used in Tibetan and Mongolian medicine, they are said to have a sweet and bitter taste with a cooling potency. They are used in the treatment of pulmonary disorders. The fruit is used to treat heart disorders and retention of the menses, whilst the leaves are used for healing wounds.

General Description of Lancea tibetica; Herbs, 3-10 cm tall, glabrous except for petioles. Rhizomes to 10 cm long, with a pair of membranous scales on each node. Leaves 6-10, rosulate; leaf blade obovate, obovate-ob-long, or spatulate, 2-8 cm long, subleathery, base tapering, margin entire or obscurely and sparsely toothed, apex obtuse and usually apiculate. Flowers in fascicles of 3-5 or in a raceme; bracts subulate-lanceolate. Calyx, leathery; lobes subulate-triangular. Corolla dark blue to purple, 1.5-2.5 cm long, tube 1-1.3 cm long; throat yellowish and/or with purple dots; lower lip middle lobe entire; upper lip erect, deeply 2-lobed. Stamens inserted near middle of tube; filaments glabrous. Fruit red to dark purple, ovoid, included in persistent calyx. Seeds numerous, brownish yellow, oblong.

Future our experimental purpose is comparative study in chemical and biological activities these two plants, Polygala Hybrida DC & Lancea tibetica Hook.f.et Thoms which are grow in Mongolia.

RESULT OF RESEARCH CONDUCTED AMONG MONOS UNIVERSITY GRADUATES EMPLOYED BY SUBSIADARIAS AND AFFILIATES OF "MONOS" GROUP

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Background: 23 percent of overall 660 graduates after 8 times graduation of Monos university is now employed by Monos Group. One third of the graduates is employed at affiliates and subsidiaries of Monos group and comments and opinions of those graduates will make a considerable contribution in future development of the university curriculum, syllabus and improvement of teaching methodology.

Purpose of the study: To research satisfactory indexes of graduates

Research tools and methods: This research was conducted by means of oral interview and written questionnaire among graduates of Monos university who are currently employed at subsidiaries of Monos group using Excel and Word programs. Questionnaire was filled online by the graduates using Outlook and Mass mail.

Research result: The research covered 43 of 134 graduates (35%) of the Monos university employed at Monos group subsidiaries and average age of the participants was 20-45, professions of the participants varied from pharmacist, department heads, chiefs and teachers. Composition and other factors of the participants were able to represent the majority. According to the study, during the study at the university graduates gained sufficient knowledge both in practical and theoretical fields and team work skill (62,5), skill to work one one's own (68,5%) were the main skills achieved by them. On the other hand, the fact that computer skills 66,6%, skill to work by one's self /66,3%/, team working skills /63,3%/ were fully achieved at workplace may be affiliated with improvement of those skills after starting employment. Moreover, the graduates replied that they could not fully achieved computer skills during the time of study in the university but developed it later on at workplace and concluded that English language course /68,8%/ and Pharmacology course /50%/ could not provide them with sufficient knowledge required. Therefore, there is a necessity to add supplementary classes of pharmacology and improve teaching quality of English and Computer classes. 81% of the participants in the research are interested in taking post-graduation classes of pharmacology and 56.2% wishes to take pharmaceutical department structure and organization.

Conclusion: According to the research result, graduates are 100% satisfied with the university they graduated and major they studied. 90 percent of the participants replied that they were able to achieve practical and theoretical knowledge at sufficient level during the time of study. However, 60 percent of the respondents considered that they were not ab;e to achieve English and computer knowledge at satisfactory level.

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SOME ISSUE TREATING LUNG DISORDER ON EXPERIMENTAL ANIMAL MODEL BY "SOROOL-4" TRADITIONAL DRUG

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Background: In Mongolia, leading cause of morbidity prevalence is respiratory system disease by 2010. The prevalence is 1027,73 per 10000 people. Comparison to 2000, it has been increased by 1,5-2 times. Another word, it shown that respiratory diseases hadn't been decreased, but progressively increased in the last 10 year.

By WHO estimation in 2008, future trend of mortality rate of the respiratory system disease would taken 3rd place in the leading causes of the mortality by 2030. Most common symptoms of the respiratory diseases are cough and sputum.

Aim of the study: Aim of this study is to investigate some effects Sorool-4 drug on some respiratory diseases.

Method of study: Experimental research method was used in this study. 30 laboratory white mouse, each weigh is 18-22 grams and 40 Vistar species rats, each weigh is 180-220 g were used in the study in where Inner Mongolian National University of China.

0.25% Ammonium hydrochloridium solvent was inhaled to each mices for 10 seconds. After 3 day inhalation procedure, Sorool-4 drug was injected 10 grams per kg to mices, and Libexin was administered 4.3mg/kg per one time in next 3 day. During these 3 days, we measured cough for 3 minutes to each mices by ZOLY-3 devices in everyday.

White mices were classified into 3 groups, and then 0.1 ml/10gram phenol aldehyde solution 0.2-0.25 ml per each mice injected to abdominal cavity. After 3 day injection, sorool-4 was administered 10 gram per kg and bromhexine 0.12 mg per kg, 3 times a day, for 3 days.

Bacterial colony: Coagulase positive S.aureus DU 5789 and coagulase negative mutant DU5843 species were used in this study. These bacterias has stored in -700C in brain and heart infusion, and 10% glycerol and 5% non-fat milk were feed until used.

Culture: According to CASH method, some changes were made. S.aureus was cultured in the TSA, BBL agar in +370C for 24 hours and diluted with pure non-endotoxin saline and centrifuged at 3000rpm for 7 days, +40C, 10 min per day. And then again diluted with cold pure saline, and diluted to 2x109-4x109 CFU ml by turbid meter. Prepared suspension has warmed to 450C, and mixed 10 ml suspension with 4% 10ml melted NOBLE agar.

Experimental model: 0.2-10ml/10ml/g agar was injected to every mice tail vein.

To develop cough model, 0.25% ammonium hydrochloridium solution was inhaled 10 sec for 3 days in YLS-8A device. After 3 day, in three groups, mices of the each group coughed mean 25.6±3.6 amount. Sorool-4 drug and Libexin were administered 10mg/kg to treatment group 1 and 4.3 mg/kg to treatment group 2, each respectively. After administration these drugs, counted cough amount of each mice for 3 min in YLS-8A device in 3 day.

Conclusion: Because of amount of sputum of treatment group 1 and 2 is more than control group, Sorool-4 is not efficient as same as bromhexine, but this showed that it has mucus expectorant effect.

As shown results, sorool-4 has anti-inflammatory effect. It would be more effective using sorool-4 with antibiotic.

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