2.0 REVIEW OF LITERATURE:

M.V.Kumudhavalli et al. (2010) performed acute toxicity study with overnight Fasted swiss Albino mice with weight ranging (20-25gm female) were taken for the experiment. The animals were made into a group of 3 each, dose of ethanol and aqueous extracts were given according to the body weight (mg/kg) starting dose of 5mg/kg was given to the first individual animal, no death was accrued higher doses were given to next group of animals dosed ranging from 50mg/kg, 300mg/kg, 2000mg/kg and the mortality due to these doses were observed.

M.V.Kumudhavalli et al. (2010) performed anti-inflammatory activity of extracts was studied by Carrageenan-induced rat paw oedema method. The animals were weighed and numbered. Amark was made on both the hind paws (right & left) just beyond tibiotarsal junction, so that an every time the paw was dipped in mercury column up to the fixed mark to ensure constant paw volume. Four groups of rats were pre-treated with ethanol and aqueous extracts in dose of 200 mg/kg body weight orally. One group received only Carboxymethyl cellulose which served as control, the other group received Diclofenac Sodium as standard drug for comparison in the dose of 10 mg/kg body weight under similar conditions. After 30 min, 0.1 ml of Carrageenan (1%) was injected into planter region of hind paw of rats. Measurement of paw volume (ml) was made by mercury displacement technique using plethysmometer in a time interval of 15, 30, 60, and 120 minutes, after carrageenan injection.

M.V.Kumudhavalli et al. (2010) performed anthelmintic activity with ten groups each containing three earthworms were taken. Piperazine citrate was diluted with normal saline to obtain 5, 10 and 25 mg/ml served as standard and poured into Petri dishes. The effect of alcoholic and aqueous extracts was studied at the doses of 5, 10, and 25 mg/ml, the extracts was diluted with normal saline. Normal saline served as solvent control. All these extracts were poured into the Petri dishes. Three earthworms nearly equal size about 8 cm long were replaced in each petridish at room temperature. The time taken to complete paralysis and death were recorded. The mean paralysis time and mean lethal time for each sample was recorded (Each reading was taken in triplicate). Paralysis occurred when the worms lost their motility. Time of death was the time when the earthworm did not respond to external stimuli and did not revive when placed in normal saline.
Margret Chandira et al. (2011) formulated and evaluated anti-diabetic activity of tablets prepared from aqueous extract of the selected plant. A solid pharmaceutical dosage formulation using a novel dry plant extract (tuberous roots) using various excipients viz., carbopol, ethyl cellulose, MCC, dibasic calcium phosphate and PEG-4000 by direct compression was reported to be statically significant as anti-diabetic activity.

S. Sangeetha et al. (2011) formulate oral herbal tablets of Cinchona officinalis extract containing quinine and also with pure synthetic quinine, further to determine the pharmacokinetic profile for both and compare. The concentration of quinine in the extract was estimated by HPTLC with comparison to synthetic form. Tablets were prepared from both extract and synthetic form through direct compression technique by varying the process and formulation parameters. The pre and post compression parameters were evaluated for the formulated batches. The pharmacokinetic studies were conducted in rabbit models of either sex. The pharmacokinetic profile of the extract formulation was compared with the pharmacokinetic profile of the pure quinine formulation. The tablets formulated possessed good pre and post compressional properties. The in-vitro release studies showed that it followed first order release kinetics. Even though there was no significant differences with ‘p’ value between the pharmacokinetic data obtained for pure and extract quinine tablets, the absorption was slightly increased in case of extract.

S.D. Sanja et al. (2009) has designed study to investigate the anti-oxidant activity of the methanolic extract of Portulacaoleracea. The methanolic extract was evaluated by TLC and HPTLC fingerprint method. Anti-oxidant activity of methanolic extract was determined by DPPH free radical scavenging activity, reducing power by FeCl3, nitric oxide free radical scavenging activity, super oxide scavenging activity by alkaline DMSO method.

Vijay R Salunkhe et al. (2009) formulated, developed of herbal oral liquids containing Withania somnifera, Asparagus racemosus, Ipomea purga, Glycyrrhiza glabra, Terminalia chebula, Curcuma zedoria, Tinospora cordifolia, Cyperus rotundus, Tribulus terrestris, and Sidacardifolia as active ingredients and Stevia rebaudiana as natural sweetener. Standardization was carried out using applicable parameters like colour, odour, general
appearance, taste, pH, viscosity, surface tension, clarity, specific gravity and other additional parameters like microbial count, TLC profile, HPTLC fingerprint, determination of heavy toxic metal ions and pesticide residue. Sweetness potency was determined by taste evaluation method. Effect of aqueous extract of natural sweetener in the formulation was determined by standardization. Use of this natural sweetener is most convenient, acceptable and palatable in sweet formulations.

Masafumi Arima et al. (1995) investigated the effects of YM264, a specific platelet-activating factor (PAF) antagonist, on the air way hyperresponsiveness (AH) and the late asthmatic response (LAR) of guinea pigs that were sensitized by exposure to aerosolized ovalbumin (OA). Respiratory resistance (Rrs) was determined by the oscillation technique. Airway responsiveness was evaluated by administering a dose of histamine at which the Rrs reached 200% of the baseline value (H200). Animals were administered 1 or 3 mg/kg of YM264 orally 30 min before and again at 3 h after exposure to OA. YM264 significantly suppressed AH 24 h after and 5 days after the exposure. YM264 also suppressed the development of the LAR and accumulation of eosinophils and neutrophils in the tracheal mucosa of guinea pigs. These observations suggest that PAF is involved in the AH and the development of the LAR in asthma. PAF antagonists may play a beneficial role in the treatment of asthma.

Sampson B. Sarpong et al. (2003) examined the interaction between recombinant cockroach (r Bla g 2) and dust mite (r Der f 1) allergens in inbred mouse strain (A/J). The tested hypothesis was that there are enhanced effects of exposure to r Bla g 2 and r Der f 1 allergens in the airway inflammatory response in A/J mice. Methods: Five groups of mice (male, 6–8 weeks) were examined: vehicle (saline) controls; adjuvant (alum) controls; r Bla g 2 immunized (0.01–10 Îµg/mouse), r Der f 1 immunized (0.01–10 Îµg/ mouse), and combined immunization with r Der f 1 (0.05 Îµg/mouse) and r Bla g 2 (0.0 5 Îµg/mouse). Mice were immunized at days 0 and 7, challenged by orotracheal inhalation with r Der f 1 and/or r Bla g 2 allergen at day 14, and were studied and sacrificed on day 17. Airway hyperreactivity was measured by peak airway pressure and airway pressure time index (APTI). Differential cell analysis and total proteins in bronchoalveolar lavage returns were used to assess airway inflammation and epithelial injury. Results: Dose-related statistically significant increases in peak pressure, APTI, total cells,
eosinophils, epithelial cells, but not total proteins, were induced by r Bla g 2 challenges in r Bla g 2-immunized mice. Similar allergen-induced dose-related increases in airway total cells, eosinophils, epithelial cells and total proteins were observed in r Der f 1 immunized mice.

C. K. Katiyar et al. (2009) carried out study to evaluate anti-tussive activity of combination of herbal drugs as formulations in sulphur dioxide (SO2)-induced cough model in mice. Albino mice of either sex, weighing 25-30 g were divided into eight groups, (n = 6). Group 1 served as normal control, group 2 mice were given distilled water, group 3 was positive control and received codeine sulphate (10 mg/kg, p.o.) and group 4, 5, 6, 7 received coded formulations 1, 2, 3 and 4 respectively at a dose of 0.3 ml/mice, orally, while group VIII was the vehicle control. Thirty minutes later, the mice were exposed to sulphur dioxide again for 45 sec. The mice were then placed in an observation chamber for counting of cough bouts, by two independent observers, for five minutes. All the formulations used showed significant anti-tussive activity in sulphur dioxide induced cough model. Thus, these formulations can prove to be useful for alleviating cough.

J. ShettyAkhila et al. (2003) determined of acute oral toxicity is usually an initial screening step in the assessment and evaluation of the toxic characteristics of all compounds. This article reviews the methods so far utilized for the determination of median lethal dose (LD50) and the new changes which could be made. This has to go through the entire process of validation with different categories of substances before its final acceptance by regulatory bodies.

PriyabrataPattanaya et al. (2010) developed a simple scheme for the standardization and authentification of Sulaharan Yoga a poly herbal formulation using HPTLC. The present study signifies the use of TLC, HPTLC fingerprint profiles for deciding the identity, purity and strength of the polyherbal formulation and also for fixing standards for this Ayurvedic formulation.

Anita Mehta et al. (2008) studied the effect of alcoholic extract of Moringaoleifera (M. oleifera) seed kernels on various experimental models of bronchial asthma. Significant (P < 0.05) increase in pre-convulsion time was observed due to pre-treatment with M. oleifera when the
guinea pigs were exposed to either acetylcholine (Ach) or histamine aerosol. This bronchodilating effect of M. oleifera was comparable to ketotifenfumarate. Spasmolytic effect of M. oleifera was also observed by dose dependent inhibition of ideal contractions induced by Ach, 5HT, histamine and BaCl2. Alcoholic extract of M. oleifera produced significant dose dependent protection by egg albumin and compound 48/80 induced mast cell degranulation. Pretreatment with alcoholic extract of M. oleifera also decreased carrageen an induced rat paw edema, which was comparable to that of standard diclofenac sodium. Minimum inhibitory concentration for alcoholic extract of M. oleifera was low as compared to cold-water extract and hot water extract when antimicrobial activity was tested against various respiratory pathogens like Escherichia coli (E. coli), Staphylococcus aureus (S. aureus) and pseudomonas aeruginosa (P. aeruginosa). Our data suggest that antiasthmatic activity of M. oleifera seed kernels may be due to its bronchodilator, anti-inflammatory, mast cell stabilization and antimicrobial activity.

Margret Chandira et al. (2010) prepared formulation and evaluation of anti-diabetic activity of tablets prepared from aqueous extract of the selected plant. A solid pharmaceutical dosage formulation using a novel dry plant extract (tuberous roots) using various excipients viz., carbopol, ethylcellulose, MCC, dibasic calcium phosphate and PEG-4000 by direct compression was reported to be statically significant as anti-diabetic activity. The present communication also deals with the evaluation of formulated tablets (weight variation, friability, hardness and disintegration time).

Bishnu Joshi et al. (2008) prepared aqueous ethanolic extract of four medicinal plants were subjected to in vitro antibacterial assay against human pathogenic Escherichia coli, Salmonella typhi, Salmonella paratyphi, Staphylococcus aureus, Klebsiella pneumoniae, Pseudomonas aeruginosa employing cup diffusion method. Among four plants tested Eugenia caryophyllata (Clove) was found to be the most effective against S. typhi. All the plants were ineffective against E. coli and K. pneumonia. Achyranthes bidentata was found to be ineffective against all the tested organisms. The largest zone of inhibition (22 mm) was obtained with E. caryophyllata against S. typhi and Minimum Bactericidal Concentration (MBC) value of 5 mg/l was obtained with Azadiractaindica against S. typhi. K. pneumoniae and E. coli were found to be resistant with all the plant extracts. A qualitative phytochemical analysis was performed for the detection
of alkaloids, glycosides, terpenoids, steroids, flavonoids, tannins and reducing sugars. Thin layer chromatography was also performed using solvent system chloroform, methanol and water (10:10:3) for the analysis of lipid present in plant extract.

Ghiware Nitin B. et al. (2010) developed three orally administrable dosage forms of fruits of Piper nigrum (Maricha) and leaves of Nyctanthes arbor-tristis (Parijataka), in combination. Tablet form of drugs from solid dosage form and two formulations from liquid class were designed and developed. By considering difficulty of solubility of herbal drugs in a vehicle, in one of the liquid class, decoction form of drugs in specific vehicle was used. This form of drugs hereafter considered as Liquid Oral Dosage Form of drugs. To prepare a liquid form with suspended particles of drugs, Suspension form was also designed. Formulated dosage forms then subjected to evaluation of production quality by different methods stated as per official compendia. Such evaluation has unique position in development of new formulations.

Ansar M. Patel et al. (2010) performed Hepatoprotective activity of Hepjaun syrup (HA-I) and Modified Formulations (HA-II and HA-III) were evaluated and compared statistically after inducing hepatotoxicity in rats by subcutaneous administration of carbon tetrachloride (CCL4) with olive oil as a diluent in 1:1 %v/v on 2nd and 3rd day. The liver damage was confirmed by estimation of elevated levels of Serum Glutamate Oxaloacetate Transaminase (SGOT), Serum Glutamate Pyruvate Transaminase (SGPT), Alkaline Phosphatase (ALP), serum bilirubin and liver weights. HA-I, HA-II, HA-III pretreatment (500mg/kg) significantly reduces the CCl4 induced elevated serum levels of SGOT, SGPT, SALP and Serum Bilirubin.

J. AnbuJebaSunilson et al. (2010) showed aqueous ethanol extracts of various traditional herbs like Adhatodavasica, Acoruscalamus, Glyzyrrhizaglabra, Ocimum sanctum, Tylophoraaasthmatica, Piper longum and Solanumxanthocarpum was evaluated for its antihistaminic activity by the inhibition of histamine induced contractions on the guinea pig ileum. The results showed that the formulated cough syrup inhibited histamine induced contractions of guinea pig ileum at 2.5 to 25 μg/ml concentrations in a dose dependent manner (p < 0.01, p < 0.05) and also significantly (p < 0.05) inhibited degranulation of mast cells. All the results were well comparable with the standard benadryl cough syrup (diphenhydramine).
Syamsudin et al. (2009)\textsuperscript{53} said that final use of prepared granules as tablets dictates the preparation method. At the present study the formulation of the extract of the stem bark of G.parvifolia as tablet dosage form was performed by use of formulation using dry and wet methods and compared irrespective to characteristics like hardness test, weight uniformity test, friability test, disintegration time and dissolution test and other properties. Results showed that it was concluded that it is better to use wet method for granulation if final aim is produce tablets of the granules. Otherwise if the granules will be used as such and there method can be used because of the advantages of this method in respect to low cost of production course, no need to use organic solvents and feasibility in industrial scale production.

Akah P. Aet al. (2003)\textsuperscript{48} showed Optimization of experiments, such as those used in drug discovery, can lead to useful savings of scientific resources. Factors such as sex, strain, and age of the animals and protocol-specific factors such as timing and methods of administering treatments can have an important influence on the response of animals to experimental treatments. Factorial experimental designs can be used to explore which factors and what levels of these factors will maximize the difference between a vehicle control and a known positive control treatment. This information can then be used to design more efficient experiments, either by reducing the numbers of animals used or by increasing the sensitivity so that smaller biological effects can be detected. A factorial experimental design approach is more effective and efficient than the older approach of varying one factor at a time. Two examples of real factorial experiments reveal how using this approach can potentially lead to a reduction in animal use and savings in financial and scientific resources without loss of scientific validity.

M.V.Kumudhavalli et al.(2011)\textsuperscript{36} find out new drugs from indigenous plant which are potent drugs. Present study deals with the phytochemical [26-28] and pharmacological studies of leaves of hiptageBenghelensis(L) kurzz. The phytoconstituents were extracted by using various chemical tests. The ethanolic and aqueous extracts shows major phytoconstituents, hence it was selected for pharmacological screening. Further the ethanolic extract was chooses for compound isolation.
Mohan V.R. et al. (2009) used hiptagebenghalensis in the traditional system of medicine. The leaf is considered one of the important plant organs for the treatment of various diseases such as burning sensation, wounds, ulcers, inflammations, leprosy, scabies, cough and rheumatism. The aim of present research was focused on the pharmacognostical, physico-chemical and phytochemical properties of H. benghalensis. Various parameters like microscopy, physicochemical (ash & extractive values), fluorescence analyses and phytochemical profile for leaf part was studied and the salient diagnostic features were documented.