

4. SUMMARY & CONCLUSION

In our study, Pharmacognostical examinations for *Boswellia serrata* confirm authentication for plant. The leave and barks of *Boswellia serrata* evaluated macroscopically as well as histologically. Histology of leaves as well as barks shows character for di cotyledonous plant *Boswellia serrata*. The oleo gum resin of boswellia serrata were authenticated from Prof. P.J. Parmar, Botanically Survey of India, Jodhpur, Rajasthan, India, that provided authenticity of plant *Boswellia serrata* Roxb. The physicochemical parameters of oleo gum resin of the plant were match with powdered drugs obtained from marketed formulation which also confirm identity of boswellic acids in marketed formulation.

Examination of TLC using, solvent system, Toluene: Ethyl acetate: Methanol (8:2:1) and Anisaldehyde sulphuric acid reagent as spraying agent established the attendance of dissimilar type of BAs. Test of inaccessible BAs via HPTLC showed 04 peaks which provide characteristics for 04 types of BAs.

The FT-IR analysis of the isolated boswellic acids showed the identity of functional groups present in the boswellic acids.

The pharmacological effects of *Boswellia serrata* are mainly attributed to oleo-resin portion which contains pentacyclic and tetra cyclic triterpenoids known as BAs (Ammon, 2002). BAs have antiinflammatories, antiarthritics, anti-rheumatics, anti diarrhoeals, anti hyperlipidemics, anti asthmatics, anticancers, anti-microbials as well as analgesics action. The BAs is a combination of four main penta cyclic triterpenes acids viz., β -boswellics acids, 3-acetyls β -boswellics acids (ABA), 11-ketos β -boswellics acids and acetyls-11-ketos-boswellics acids (AKBA).

An attendance learns, actions of BA was observed inside electrically & chemically induce convulsions models. In MES- induce convulsions, BA significant secluded flora and fauna next to seizure by delay onsets of convulsion as well as was able to decrease the duration HLTE (Table 17) as compared to the control. In MES-induced model, the BA showed dose dependent anticonvulsant activity at different doses. The normal medicines PS on an amount of 25 mg/kg of corpse heaviness provide 100% defense & show complete absence of HLTE. The results indicate that BA have an anti convulsant consequence, which is dose-dependent in MES model & possess additional strong defensive result next to seizure than PTZ induce seizure. It has frequently been affirmed so as to anti epileptic medicines so as to chunk MES induce tonics additional room act by overcrowding attack increase (Rogawskis and

Porters, 1995). Furthermore, MES - induce tonic additional room can be banned also by drug that slow downward voltage - dependent sodium channel, such as phenytoins, valproates, felbamates as well as lamotrigines (Rogawskis and Porters, 1995; McDonald and Kelly, 1995; White et al., 1995); otherwise through drug that chunk gluta matergic excitations mediate through N-methyl-D-aspartates (NMDAs) receptors, like felbamates (Subramaniam et al., 1995; MacCabe et al., 1993). Present obtainable AED, which showed clinical effectual for organization of generaliz tonicclonic and partials seizure are like carbamazepine, phenytoin, primidone, phenobarbital, valproate and lamotrigine. These drugs repress HLTE in MES (Brownings, 1992; Rhos and Sankars, 1999). Defense next to HLTE too indicate the aptitude of a tough materials inhibiting otherwise prevents convulsion release inside the mind stem attack substrate (Browning, 1992). The ability of the BA to inhibit the HLTE in MES - induced convulsion, compared with PS (100% defense) is suggests the anti convulsant action towards organization for generalize tonicclonic as well as partially seizure.

In PTZ - induce seizure which associates by means of antiabsence action (Delgado, 1998). The BA had little protection on the animal against anticonvulsant activity in this model (Table 19). In this replica, there was rejection important alteration inside latencies of HLTE at lower doses, but senior amount of BAs show important protection next to HLTE because compared to control. The normal drugs DZ at a dose of 4 mg/kg of corpse heaviness provide 100% protections & showed complete absence of HLTE. The higher dose of BA showed 50% protection against convulsion. However, these effects were not dose-dependent. Drug so as to effectual next to convulsion seizure reduce T kind Ca^{2+} current, & these type of seizure can too be banned through drug to improve GABA-BZD receptors mediats neuro transmission, likes benzo diazepines & phenobarbitones (McDonald and Kelly, 1995). PTZ may be exerting its epileptic result through inhibit action of GABA at GABA receptor. GABA is the main inhibition neuro transmitter, concerned in convulsion. The improvement and reserve of the neuro- transmission of GABA will satisfy and improve seizure correspondingly (Meldrum, 1981; Westmoreland et al., 1994). Antiepileptic drugs effectual in the rehabilitation of generalize seizure of (nonattendance or myoclonics) petitmal type's like's phenobarbitones, valproates, ethosuximides as well as benzodiazepine exhibits dosage needy repression of a variety of attack outline induce through PTZ (Loscher et al., 1991). In PTZ induce

convulsion, BAs have merely greater than previous to the latency other than not the occurrence of seizure as compare to diazepam (Table 19). The action experiential in PTZ - induce study may almost certainly be due to likely communication flanked through BA and GABAergic neurotransmission.

The most of at present obtainable anti epileptic medicines drop keen on one of two pharmacological classes, which are modulate neuronally voltagegated sodium channel (e.g. carbamazepines, phenytoins, lamotrigines, as well as topiramates) and those that modulates inhibition GABAergic neurotransmission (e.g. benzodiazepines, vigabatrin as well as tiagabine). Little figure of AED like ethosuximides, gabapentin as well as perhaps levetiracetam might put forth their property through a communication by means of voltageoperated Ca^{+2} channels (Wickenden, 2002). Aptitudes for BAs to show action next to these two types of seizure suggest acting from side to side dissimilar mechanism to draw out its anti convulsant belongings, like voltagegated Na^{+} , Ca^{+2} , as well as K^{+} otherwise GABAergic path.

In PCT-induced model, at any doses of BA did not showed significant protective effect (Table 18). Absence of significant anticonvulsant activity may suggest the BA may not non-competitively interact at GABAA receptor, since PCT is a known convulsant and a non-competitive GABAA receptor antagonist (Takeuchi and Takeuchi, 1969).

The CNS depression action of BA was established through reduce inside latency to sleeping as well as tendency to considerably increasing thiopental sodium-induced sleeping times (Table 20) which may be credited to a reserve of thiopental sodium metabolisms otherwise to an act in the rule of sleeping (Morais et al., 1998). The sleeping time was increased significantly at higher dose of BA, as compared to control. Animals treated with DZ (4 mg/kg, i.p.), as expected, prolong the sleeping time & reduces the latency of sleep. There was no significant effect on latency as well as sleeping time at lower doses of BA.

The results of the study have demonstrated that BA possessed potent anti convulsant action in the animal's model investigates as well as these provide a rationale in favor of its uses inside traditionally drug in favor of organization of convulsion. The present results suggested that BA containing marketed formulation is also being useful for the management of epilepsy. Further study is to establish the exact molecular level mechanism of action of BA.