

## Lab. 4



**To demonstrate the anticonvulsant property of drug against pentylenetetrazole (PTZ) induced convulsions in mice**

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# Study the anti-convulsant/antiepileptic activity of drug against chemical induced convulsions

## BACKGROUND

Seizures are one of the complications of drug toxicity commonly antihistaminics and antidepressants due to insufficient inhibitory action (e.g., GABA) or extreme excitation (e.g., glutamate).<sup>1</sup> Pentylentetrazol causes generalized clonic movements by antagonizing the inhibitory GABAergic transmission which leads to tonic characterized by flexion and extension of limbs.

## REQUIREMENTS

**Animals:** Rats (150-200 gms) or mice (20-40 gms)

**Drugs:** Pentylentetrazol (PTZ) (80 mg/kg) intraperitoneal or subcutaneous route or Picrotoxin (6-7 mg) for convulsion production;  
Diazepam (1 mg/kg, i.p. route)

## PROCEDURE

Divide the animals (rats/mice) into two groups (control and test) each having four animals. Control group will receive normal saline and test group receive diazepam 30 min before PTZ injection. Then inject PTZ and keep the animals for 1 hour observation in individual cages. Seizures are to be evaluated as onset of seizures, number of jerks, onset of clonic, tonic convulsion and recovery or death.<sup>2</sup>

**Observation table.**

Sl. No.	Group	Onset time (in sec)				
		Seizures	No. of jerks	Tonic convulsion	Clonic convulsion	Recovery or death
1	Control					
2						
3						
4						
1	Diazepam					
2						
3						
4						

## CONCLUSION

Drugs which protect chemical induced seizures in animal models are therapeutically active against Petit mal epilepsy. Diazepam showed anticonvulsant effect in chemically induced convulsions.