PP50. ORAL ADMINISTRATION OF TURMERONES REDUCES SEIZURES IN MOUSE MODELS OF EPILEPSY

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Curcuma longa (turmeric) is widely used as a medicinal plant, buth in traditional medicine (including, but not limited to, Ayurvedic medicine and traditional Chinese medicine), and as a dietary supplement. Most studies regarding potential therapeutic activities of turmeric have focused on curcuminoids, which have poor bioavailability. Turmeric most commonly used for the treatment of inflammation and pain, but are also used in other indications. In East Africa, *Curcuma longa* leaves are used in traditional medicine for the treatment of epilepsy. We have previously reported the identification of turmerones as anti-epileptic constituents from *Curcuma longa*, using a zebrafish seizure model to carry out *in vivo* bioassay-guided fractionation. Subsequent testing of turmerones in mouse seizure models confirmed their anti- epileptic activity, but relied on i.v. or i.p. administration. To further evaluate the potential of turmerones to treat epilepsy, we tested the effects of oral administration of turmerones (essential oil of *Curcuma longa* purified to contain >98% turmerones) on seizure duration and latency in a mouse epilepsy model with seizures induced by the GABA(A) receptor antagonist pentylenetetrazole (PTZ). Mice with PTZ-induced seizures pre-treated with turmerones at 50 mg/kg p.o. for 7 days exhibited a 79% decrease in seizure duration and a doubling of seizure latency. A similar decrease in seizure duration was observed in the 6-Hz mouse epilepsy model pre-treated with turmerones at 50 mg/kg p.o. for 7 days. These initial results suggest a potential anti-seizure effect through oral administration of turmerones, which will be investigated further in these and additional epilepsy models.

Keywords: *Curcuma longa*, turmeric, tumerones, epilepsy, seizures.

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