Phytocompounds from *Dysoxylum alliarum* induces cellular proliferation in cyclic uterus and post-implantation embryo resorption in pregnant female mice

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The traditional healing practices using various ethnomedicinal plants has recently increased across the world. The different communities of north-east India has been practicing local health traditions for centuries to treat various ailments. *Dysoxylum alliarum*, a medicinal plant is traditionally used for female reproduction regulation by the folk-healers of Arunachal Pradesh. The indigenous knowledge associated with this plant material is used to terminate undesired pregnancy in domestic animals like pigs and dogs. Following this information, methanolic crude bark extract (CBE) at a threshold dose of 500mg/kg body weight/day of the plant has been tested in vivo in laboratory to find out any steroidogenic property on reproductive tissues in cyclic and pregnant female mice. Routine histology and immunolocalization of PCNA have been performed in both ovary and uterus in cyclic females. The treated ovary showed degenerated follicles at different stages compared to the control females. The uterus of the treated group showed increased cellular proliferation and increased PCNA expression ($P<0.05$) in comparison to that of the control females. In vivo investigation in pregnant females during the periimplantation period (D4-D6) has been carried out to understand its effect on the fetal maternal tissues. The D6 treated females' uteri showed the resorption of the embryo. It has been speculated that the active compounds in the *Dysoxylum alliarum* are estrogenic in nature and allows implantation but disrupts the fetal-maternal signaling and therefore leads to the embryonic death post implantation. The signaling pathway of the phytocompounds in both the ovary and uterus need to be investigated.

Keywords: Dysoxylum alliarum, phytocompounds, immunofluorescence, PCNA, histology.