

**Effect of Herbal Drug on Mast Cell Degranulation activity in Sensitized Rats**


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The study showed the effect of *Vitex negundo* crude extracts on mast cell degranulation activity. It was noticed that 100mg/kg dose of the herbal drug when given p.o. to the albino rats showed 72% mast cells stabilizing activity which was similar to the standard drug Prednisolone. Only 20% cells were found disrupted the detail phytochemistry of extract showing this activity is under the process.

**Key words:** *Vitex negundo*, Mast cells, degranulation , Anti-inflammatory.

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The history of the use of plants in medicine can be traced back to the ancient civilization of Pre-Rigvedic time. Indigenous system of medicine like Ayurveda and Unani which had their roots in one or the other ways in folk medicine; Unani system of medicine was introduced in India by Arabs (Jain 1981).

Asthma is an allergic reaction in the body in which mast cells secrete a compound called Histamine and mast cells become degranulated. The present paper reports, the mast cell stabilizing activity by the treatment of two different doses of *Vitex negundo* plant extract.

The plant which is known as NERGUNDI is grown in the forest of Betul district of M.P. Mast cells degranulation activity reported earlier by herbal drugs (Mitra et al., 1999, Tripathi and Dass 1977, Ghosh et al., 2005, Soni 2007 and Saxena 2003). Looking to the increasing cases of asthma during the last one decade and no permanent solution in allopathy system ,it was thought proper to find out herbal drug which can stabilize mast cells granulation.

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**MATERIAL AND METHODS**

**Plant material and preparation of extract**

The whole plant of *Vitex negundo* was collected from Betul district of M.P., India during January 2008-09, when they were flowering. Plant material was authenticated by Dr. S.K. Jain of Botany department. A voucher specimen has been deposited at the institute herbarium. The plant material was washed throughly in tap water, shade dried and powdered. The powder (100gm.) was cold extracted with 1000ml. of ethanol (90%) over night, at room temperature with constant stirring, as per the procedure adopted by Suja et al., (2004). The extract was filtered and filtrate concentrated under reduced pressure in a vaccum evaporator to yield 2.56% of the crude extract. This crude extract (co) was reconstituted in 0.5% Tween-80, to desired concentration and used in the experiments.

**Animal material**

Wistar albino male rats of (250gm) were obtained from the laboratory cultured stock. The experimental protocol was followed under the guidance of CPCSEA and IAEC of the institution. The rats were fed Glycol India Ltd. pellets and water, ad libitum. The rats were given
Table 1. Effect of herbal drug *Vitex negundo* on mast cells degranulation activity on Sensitized rats

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Treatment</th>
<th>Dose (mg/kg.po)</th>
<th>% of intact mast cell</th>
<th>% of disrupt mast cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Control</td>
<td>-</td>
<td>26%</td>
<td>74%</td>
</tr>
<tr>
<td>2.</td>
<td>V - 1</td>
<td>25%</td>
<td>30%</td>
<td>61%</td>
</tr>
<tr>
<td>3.</td>
<td>V - 2</td>
<td>50%</td>
<td>57%</td>
<td>43%</td>
</tr>
<tr>
<td>4.</td>
<td>V - 3</td>
<td>75%</td>
<td>69%</td>
<td>31%</td>
</tr>
<tr>
<td>5.</td>
<td>V - 4</td>
<td>100%</td>
<td>72%</td>
<td>28%</td>
</tr>
<tr>
<td>6.</td>
<td>Standard drug</td>
<td>10%</td>
<td>75%</td>
<td>25%</td>
</tr>
</tbody>
</table>

The mast cell is a well known effector cell in allergic disease. Histamines are mediators released from ruptured mast cells that play a major role in allergic response. The amount of histamine released depends on the number of mast cells that are degranulated or ruptured. Therefore, in the number of degranulated mast cells can be controlled. The function of mast cells can be manipulated for therapeutic ends by regulating their function with appropriate drugs.

REFERENCES