A REVIEW ON TRADITIONAL PLANTS AND HERBS USED FOR HEPATOPROTECTIVE ACTIVITY

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ABSTRACT

India is known as a “Botanical garden of the world” because of largest producer of medicinal plants. These medicinal plants along with natural therapeutic value against various diseases, provide high quality food and raw materials. Considerably work has been done on medicinal plants to treatment of liver diseases, some of the plant products have been marketed as hepatoprotective drugs, based on their traditional uses and scientific reports. As liver is consider as vital organ, functions as a center of metabolism of nutrients such as carbohydrates, proteins and lipids and excretion of waste metabolites. Liver cell injury is due to various toxicants such as carbon tetrachloride, thioactamide, chemotherapeutic agents etc, and chronic alcohol consumption and microbes is well studied. The available synthetic drugs to treat liver disorders in this condition also cause further damage to the liver. Hence, Herbal drugs have become increasingly popular and their use is widespread. Herbal medicines have been used in the treatment of liver diseases for a long time. Herbal drugs gained popularity and importance in past years because of their efficacy, safety and cost effectiveness.

KEYWORDS: Hepatoprotective drugs, Liver diseases, Herbal drugs, chemotherapeutic agents.

1. INTRODUCTION:
Liver is thought of to be one of the most important organ that functions as a center of metabolism of nutrients such as carbohydrates, proteins and lipids and excretion of waste metabolites. Beside that it is conjointly handling the metabolism and excretion of medicine and different xenobiotics from the body thereby providing protection against foreign substances by detoxifying and eliminating them. The digestive fluid secreted by the liver has, among different things, plays an necessary role in digestion. Liver cell injury caused by numerous toxicants like sure chemotherapeutic agents, carbon tetrachloride, thioacetamide etc., chronic alcohol consumption and microbes is well studied. Increased supermolecule peroxidation throughout metabolism of alcohol might end in development of liver disease leading to liver disease. Since human kind has created the use of plants within the treatment of numerous ailments. The Indian Traditional system of medicine like ayurveda, Siddha and Unani ar preponderantly primarily based on the use of plant materials. Herbal products have gained importance and recognition in recent years as a result of their safety, effectualness and price effectiveness. The association of medical plants with different plants in their home ground conjointly influences their medicinal values in some cases. One of the necessary and well documented uses of plant products is their use as hepatoprotective agents. Hence, there is an ever increasing would like for plant products. Hence, there is an ever increasing would like for brand new drug discov-

1.1. Hepatoprotective herbs:
Natural plants and their active principles as sources for brand new drug discov-

<table>
<thead>
<tr>
<th>S. No</th>
<th>Plant (Family)</th>
<th>Part used</th>
<th>Solvent used</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Aralia continentalis Kitagawa. (Araliaceae)</td>
<td>Root</td>
<td>Ethanol</td>
<td>Hwang et al., 2009</td>
</tr>
<tr>
<td>2.</td>
<td>Artemisia absinthium L. (Asteraceae)</td>
<td>Aerial part</td>
<td>Water</td>
<td>Amat et al., 2010</td>
</tr>
<tr>
<td>3.</td>
<td>Artemisia sacrorum Ledeb. (Compositae)</td>
<td>Aerial part</td>
<td>Water</td>
<td>Yuan et al., 2010</td>
</tr>
<tr>
<td>4.</td>
<td>Azadirachta indica Juss. (Meliaceae)</td>
<td>Leaves</td>
<td>Fresh juice</td>
<td>Yampallew ar et al., 2002</td>
</tr>
<tr>
<td>5.</td>
<td>Abutilon indicum L. (Malvaceae)</td>
<td>Leaves</td>
<td>Water</td>
<td>Porchezia n and Ansari, 2005</td>
</tr>
<tr>
<td>6.</td>
<td>Acanthopanax senticosus</td>
<td>Stem bark</td>
<td>Water</td>
<td>Wang et al., 2010</td>
</tr>
<tr>
<td>7.</td>
<td>Aloe barbadensis Mill. (Liliaceae)</td>
<td>Aerial part</td>
<td>Water</td>
<td>Chandan et al., 2007</td>
</tr>
<tr>
<td>8.</td>
<td>Andrographis lineate Fam. (Acanthaceae)</td>
<td>Leaves</td>
<td>Methanol, Water</td>
<td>Sangames waran et al., 2008</td>
</tr>
<tr>
<td>9.</td>
<td>Aneoctohis formosanus Hayata. (Orchidaceae)</td>
<td>Whole plant</td>
<td>Water</td>
<td>Fang et al., 2008</td>
</tr>
<tr>
<td>10.</td>
<td>Apium graveolens Linn. (Apiaceae)</td>
<td>Seeds</td>
<td>Petroleum ether, Acetone, Methanol</td>
<td>Ahmed et al., 2002</td>
</tr>
<tr>
<td>12.</td>
<td>Berberis tinctoria Lisch. (Berberidaceae)</td>
<td>Leaves</td>
<td>Methanol</td>
<td>Murugesh et al., 2005</td>
</tr>
<tr>
<td>13.</td>
<td>Boerhavias diffusa Linn. (Nymctaginaceae)</td>
<td>Leaves</td>
<td>Ethanol</td>
<td>Olalaye et al., 2010</td>
</tr>
<tr>
<td>14.</td>
<td>Camellia sinensis Kunzte. (Theaceae)</td>
<td>-</td>
<td>Water</td>
<td>Oyeyide and Ohshola, 2005</td>
</tr>
<tr>
<td>15.</td>
<td>Cassia tora L. (Caesalpiniacea)</td>
<td>Ononitol monohyd</td>
<td>-</td>
<td>Dhanasekararan et al., 2009</td>
</tr>
<tr>
<td>16.</td>
<td>Bauhinia variegata L. (Leguminosae)</td>
<td>Stem bark</td>
<td>Alcohol</td>
<td>Bodakhe and Ram, 2007</td>
</tr>
<tr>
<td>17.</td>
<td>Berberis tinctoria Lisch. (Berberidaceae)</td>
<td>Leaves</td>
<td>Methanol</td>
<td>Murugesh et al., 2005</td>
</tr>
</tbody>
</table>

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