Novel Compounds in Lyophilized Female Camel Urine

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Abstract

The present work was done to emphasize the degraded compounds of camel urine. Lyophilized camel urine was analyzed by Gas chromatography mass spectrometry (GC-MS) Agilent 6890 GC. Eleven bioactive compounds were detected, four of these compounds have a novel structure, and these compounds are: 4-Heptanone, 3-methyl, Butanoic Acid, butyl ester, Acetic Acid, (2,4,6-triethybenzoyl)thio, Benzoic Acid, methyl ester, Propane, 2,2’-(methylenebis(oxy)bis(2-methyl-), Butane, 1,1-dibutoxy-, Pentanoic Acid, 4-oxo-, butyl ester, Benzoic Acid, butyl ester, Benzeneacetic Acid, 2-methylpropyl ester, Butylparaben. The four compounds of novel structure are: Titanium, (08-1,3,5,7-cyclooctatetraene)(05-2,4-cyclopentadien-1-yl), Nitroxidebis(1-1 dimethyleyl), 9,12,15-octadecatetraenoic acid, Hepta siloxane.

Keywords: Camel urine; Novel compounds; Gas chromatography

Introduction

Urine is a purified sterile product of blood filtration, medically referred to as plasma ultra-filtrate made by kidneys [1]. It has been shown throughout the history of medical science to this day, that urine has profound medical uses [2].

Use of animal urine is endorsed in mainstream modern medicine. Pregnant mare urine is the source of conjugated equine estrogens and has been marketed for over fifty years as pharmaceutical brand premarin, "an estrogen treatment for menopausal and pre-menopausal women" especially postpartum-one of the most prescribed drugs in United States [1]. It was very recently discovered that adding distilled cow urine to medicaments increases their effectiveness while decreasing their side-effects, making anti-cancer, anti-tubercular drug twenty times more effective and anti bacterial eight times more effective (on line document), "urine therapy" is a stable of Ayurveda remedy [2,3].

Clinical studies on camel urine were recorded [4-10]. The results of these experiments proved that camel urine consists of many bioactive complex compounds, which can acts against bacterial, parasitic, carcinogenic agents and it has the ability to protect the liver against toxic agents [11].

Materials and Methods

Urine samples collected from natural grazing animals; then it was lyophilized using Analytical method.

<table>
<thead>
<tr>
<th>Retention time</th>
<th>Name of compound</th>
<th>Molecular formula</th>
<th>Molecular weight</th>
<th>Peak area %</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.13</td>
<td>Titanium</td>
<td>C₁₃H₁₃Ti</td>
<td>217</td>
<td>1.33</td>
</tr>
<tr>
<td>8.84</td>
<td>4-Heptanone, 3-methyl</td>
<td>C₈H₁₈O</td>
<td>128</td>
<td>2.3</td>
</tr>
</tbody>
</table>
Table 1: Retention time, Molecular weight and formula and Peak area % of the detected compounds.

<table>
<thead>
<tr>
<th>No</th>
<th>Name of compound</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4-Heptanone, 3Methyl</td>
<td>Anti-bacterial, Anti-fungal</td>
</tr>
<tr>
<td>2</td>
<td>Benzoic acid, butyl ester</td>
<td>Antiseptic, Anti-oxidant, Anti-cancer</td>
</tr>
<tr>
<td>3</td>
<td>Butylparaben</td>
<td>Anti-microbial</td>
</tr>
<tr>
<td>4</td>
<td>Nitroxide</td>
<td>Anti-oxidant, Anti-microbial</td>
</tr>
<tr>
<td>5</td>
<td>9,12,15 octadecatrienoic acid</td>
<td>Anti-oxidant, Anti-tumor, Anti-inflammatory</td>
</tr>
<tr>
<td>6</td>
<td>Pentanoic acid, 4-oxo-, butyl ester</td>
<td>Anti-microbial</td>
</tr>
<tr>
<td>7</td>
<td>Benzoic acid, methyl ester</td>
<td>Anti-oxidant, Anti-microbial</td>
</tr>
<tr>
<td>8</td>
<td>Propane,2,2’-(methylenebis(oxo)bis 2-methyl</td>
<td>Anti-oxidant</td>
</tr>
</tbody>
</table>

Table 2: Biological activity of some detected compounds.

Table 1 shows the retention time, the molecular weight and formula and the peak area% of the detected compounds, Table 2 shows the biological activity of some detected compounds.

Figure (1-4) show the GC-MS chromatogram of the dichloromethane extract of lyophilized camel urine (Heptasiloxane), Nitroxide bis (1-1 dimethyleyl), Titanium,(08-1,3,5,7-cyclooctatetraene)(05-2,4-cyclopentadien-1-yl) and 9,12,15 octadecatrienoic acid, respectively [12].

Figure 1: MS chromatogram of the dichloromethane extract of lyophilized camel urine (Heptasiloxane).
Figure 2: GC-MS chromatogram of the dichloromethane extract of lyophilized camel urine (Nitroxide bis (1,1-dimethylethyl)).

Figure 3: GC-MS chromatogram of the dichloromethane extract of lyophilized camel urine (Titanium,(08-1,3,5,7-cyclooctatetraene)(05-2,4-cyclopentadien-1-yl)).
Benzoic acid, methyl ester 1.3%, Propane-2,2-methylene bisoxybismethyl 1.27%, Butanoic Acid, butyl ester 2.23%, Benzoic acid, butyl ester 22.9%, Nitroxid and 9,12,15 octadecatienoic acid were found in the urine extract that have an antioxidant activity. 9,12,15 octadecatienoic acid Butanoic acid, and Acetic acid Are have an anti-cancer effect [13].

Butanoic acid and Acetic acid also have an anti-microbial effect [13]. Benzoic acids and its esters are employed externally as antiseptics, lotions, ointments, creams and mouth washes. It is more effective as a preservative in foods and pharmaceutical products. Benzoic acid is an antiseptic but irritating, so used only externally. It is used in the treatment of burns, frostbite, chaps, cracks, erythema, pruritus, ulcers, infected dermatitis and other minor wounds [14].

4-Heptanone, 3-methyl which presented 2.3% [15], documented that, it has an anti-fungal effect.

Octadecatrienoic acid, (Z,Z,Z)- and Vitamin E which contributes the activities like antimicrobial, antioxidant anticancer, Hypercholesterolemic, Antiulcerogenic and other activities [16]. Butylparaben 27.71% was reported that, it has an anti-microbial effect [17].

References