INTRODUCTION

The term aphrodisiac originated from the Greek word Aphrodite, eulogizing the Greek goddess of love and romance. In modern times, this term has been used for substances that enhance sexual activity and are helpful in treating sexual dysfunction.[1] Male sexual dysfunction, which includes erectile dysfunction (ED) and premature ejaculation, is the most common problem that contributes to infertility, distress, relationship problems, deterioration of self-image, and quality of life.[1] Erectile dysfunction has been identified as the persistent inability to attain and maintain penile erection sufficient for satisfactory sexual performance. The predisposing factors for ED include chronic heart disease, high cholesterol, diabetes mellitus, smoking, alcohol, drug abuse, stress, food habits, and increasing age. Epidemiological studies have demonstrated a high prevalence of ED in developed countries, and therefore it is considered to be an important health problem. Currently, modalities including psychotherapy, surgery, mechanical devices, drugs, and penile implants are used for the management of ED. Drug therapy today mainly focuses on phosphodiesterase type 5 inhibitors, which increase the levels of cyclic Guanosine Mono-Phosphate (cGMP) in the cavernosal vasculature, leading to facilitation and prolongation of penile erection.[1]

It is a serious public health problem among young as well as old men worldwide, with a prevalence of more than 20%.[1] People have searched for ways to achieve sexual desire or sexual techniques from ancient times.[4] In ancient history, most cultures helped society to improve the sexual life as evident by writings holy texts and sculptures in Hindu temples. Successful treatment of sexual dysfunctions may improve not only sexual relationships, but also the overall superiority of life.[3] It can be treated by both medical and surgical modalities. To achieve better sexual desire has led to the development and use of different substances known as aphrodisiacs. An aphrodisiac enhances sex drive or sexual pleasure by crossing the blood brain barrier and mimicking or stimulating some area of sexual arousal in the central nervous system. These substances also act physiologically to increase blood flow to the penile area, or increase the duration of sexual activity by numbing the genital area or even mimic the burning sensation of sexual intercourse.

Organization of sexual dysfunction includes therapy of the patient by a skilled psychiatrist or psychologist in order to return his self-belief and get better patient’s skill to get hold of a proper erection, the use of vacuum creation procedure, the use of operational penile implants, hormonal treatments mainly with testosterone, or the use of specific drugs which increases erectness, preservation of erection, regularity of orgasm, and level of desire. Side effects of these treatments can’t be neglected, which include high cost, complicity of infections in surgical events, automatic failure of devices, adequacy, side effects of drugs such as...
headache, flushing, dizziness, visual disturbances, nasal congestions and other various disorders. So, there is a need to develop safe or cost-efficient drug despite advances in modern and orthodox medicines. For several hundred years, people around the world have used locally grown plants as supplements to energize, vitalize, and finally to improve sexual functions. However, plant-derived and herbal remedies continue to be a popular substitute to treat sexual disorders and have also proven effective in improving sexual desire and sexual behaviour in male animals.

Many ayurvedic formulations have been claimed to have a sex-stimulating effect in Indian medicine system. Among those several formulations Tifitin-V Capsules and Shilajit-Gold Capsules have reported to have the most potent activity. Most studies published on this regard have usually targeted a single formulation at a time even though in the established medicine, most of the formulations are used for curing two or four or even more diseases. In the present study, the suspension the capsule is made and used to determine the effects of the prepared formulation as an aphrodisiac on sexual behaviour of male rats.

MATERIALS AND METHODS

ANIMALS
Female (14–16-week-old) and male (55 - 60-week-old) albino rats of the Wister strain from were used in this study. All animal experimentation was carried out in compliance with the Committee for the Purpose of Control and Supervision of Experiments on Animals guidelines and was approved by the Institutional Animal Ethics Committee (Protocol No.). The animals were housed separately in clean polypropylene cages at 24 ± 2°C and had free access to standard pellet feed and drinking water. Animals were acclimatized to a reversed 12 h/12 h light and dark cycle (lights on from 20:00 to 08:00) for 10 days before the start of experiments. Behavioural studies were carried out during the reversed dark phase (between 11:00 and 16:00 using a dim red light for illumination).

DRUGS
Tifitin-V Capsules and Shilajit-Gold Capsules were purchased from local pharmacy shop. For standard Suhagra-25 tablet was used.

PREPARATION OF FORMULATION

Preparation of Standard
Tablets of Suhagra-25 (Sildenafil citrate) were taken and crushed to make fine powder. The powder is then used to prepare the suspension with 0.5% w/v suspension of carboxymethylcellulose sodium.

Preparation of Shilajit-Gold and Tifitin-V Suspensions
Contents of capsules of the both Ayurvedic formulations were taken separately and the powder is weighed. Suspension is made with help of 0.5% w/v CMC. The suspensions were kept in refrigerator before using in experiment. The dose of 12 mg/kg of Shilajit-Gold and 10 mg/kg of the Tifitin-V were selected dose for the experiment.

MATING BEHAVIOR STUDY
Mating behaviour studies were carried out in a separate room under dim red illumination according to the standard procedure. Healthy male albino rats showing brisk sexual activity and female animals showing regular oestrus cycle were selected for the study. The male rats were placed in a rectangular plexiglass chamber, 10 minutes before the introduction of a primed female and get acclimatized to the chamber conditions. The primed female was then introduced into the chamber with one female to one male ratio and the mating behaviours observed for first week and third week after commencement of the PHF treatment. The following mating behaviour parameters were recorded:
(a) Mount frequency (MF): The number of mounts without intromission from the time of introduction of the female until ejaculation;
(b) Intromission frequency (IF): The number of intromissions from the time of introduction of the female until ejaculation;
(c) Mount latency (ML): The time interval between the introduction of the female and the first mount by the male;
(d) Intromission latency (IL): The interval from the time of introduction of the female to the first intromission by the male (characterized by pelvic thrusting and springing dismount);
(e) Ejaculation latency (EL): The time interval between the first intromission and ejaculation (characterized by longer, deeper pelvic thrusting, and slow dismount followed by a period of inactivity),
(f) Post-ejaculatory interval (PEI): The time interval between ejaculation and the first intromission of the following series.

The experiment was terminated when the male rat begins to mount the female followed by intromission after a brief period of inactivity (which normally results following ejaculation). The values of the observed parameters were measured at first week and third week of drug administration and compared with control.

MATING PERFORMANCE TEST
After 3-week treatment, the male mouse of each group was placed in a separate cage with oestrus female animals for 1 day (male: female = 1:5). The next day morning, the vaginal smear of each female mouse was examined under a microscope for the presence of sperm. The number of sperm-positive females was recorded in each experimental group and compared with control.
RESULTS
EFFECTS OF TITENIC-V CAPSULES AND SHILAJIT-GOLD CAPSULES ON MOUNTING BEHAVIOUR OF MALE RAT
The test drugs Titenic-V capsules and Shilajit-Gold capsules and standard drug Sildenafil treated male rats, 1 hr after the treatment as well as 3 hrs after the treatment, displayed excessive mounting behaviour in both the Ayurvedic formulations than Sildenafil. However, this activity was found to a higher extent in the group treated with the standard drug.

It was also observed that mounting behaviour activity (no. of mounts) in Shilajit-Gold, at 1st hr and 3rd hrs, was greater than Titenic-V. Both the test drugs produced significant increase in mounting behaviour of animals.

EFFECTS OF TITENIC-V CAPSULES AND SHILAJIT-GOLD CAPSULES ON MATING OF MALE RAT
Administration of suspension of a single dose of Shilajit-Gold and Titenic-V, and Sildenafil citrate resulted in the increase in the mating performance of the rats. The result of Titenic-V was found to be less than that of Shilajit-Gold, and nearly same as that of Sildenafil citrate.

Table

<table>
<thead>
<tr>
<th>MB</th>
<th>CONTROL(SILDENAFIL CITRATE)</th>
<th>TEST-1 (SHILAJIT-GOLD)</th>
<th>TEST-2 (TITENIC-V)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WEEK 1</td>
<td>WEEK 3</td>
<td>WEEK 1</td>
</tr>
<tr>
<td>ML</td>
<td>9.89±0.19</td>
<td>10.7±0.7</td>
<td>5.84±0.78</td>
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<tr>
<td>IL</td>
<td>9.9±1.3</td>
<td>10.99±1.3</td>
<td>6.7±0.73</td>
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<tr>
<td>EL</td>
<td>240±0.9</td>
<td>250±1.86</td>
<td>250±2.10</td>
</tr>
<tr>
<td>PEI</td>
<td>445±3.5</td>
<td>462±2.3</td>
<td>565±2.7</td>
</tr>
<tr>
<td>NI</td>
<td>6±0.7</td>
<td>5.3±0.99</td>
<td>6.2±0.58</td>
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<tr>
<td>III</td>
<td>16.5±1.5</td>
<td>14.31±2.1</td>
<td>15.2±0.45</td>
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<tr>
<td>NM</td>
<td>5.8±0.8</td>
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<td>6.32±0.4</td>
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<tr>
<td>MF</td>
<td>70.5±0.75</td>
<td>68.23±8.1</td>
<td>76.2±0.4</td>
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<tr>
<td>IF</td>
<td>77.1±3.6</td>
<td>80.1±5.7</td>
<td>102.3±5.1</td>
</tr>
</tbody>
</table>

DISCUSSION
The present study revealed that the Shilajit-Gold and Titenic-V can significantly enhance male sexual activity in normal rat. In the present study, it was observed that the sexual behaviour of male mice with Shilajit-Gold was greater than Titenic-V, whereas, it was found highly significant in the animals treated with Sildenafil citrate (Suhagra-25). The study also revealed that the both Ayurvedic formulations were devoid of any general conspicuous short term toxicity.

CONCLUSION
Our study suggested that the systemic use of Shilajit-Gold and Titenic-V have sexual behaviour enhancing effect in male rat. Thus the experimental findings substantiate the claim of Ayurvedic formulation that the Shilajit-Gold and Titenic-V are clinically useful as sexual invigorators in males.

REFERENCE