Summary and Conclusions
The present study provides scientific base and authenticity to the herbal plants utilized in the local traditional practices of Uttara Kannada district, one of the 27 districts of Karnataka state (13° 55' N to 15° 31' N latitude and 74° 09' E to 75° 10' E longitude). The area is in the hearts of Western Ghats, 60% of which is covered by the forests.

In the ethnobotanical studies, 92 healers and elderly people of the area were consulted and the data about the healing herbs were obtained by frequent interviews and discussions. The obtained data is scrutinized with the earlier works on Indian ethnobotany and medicinal plants, to find out the new claims. From the list, four medicinal plants, namely *Holigarna arnottiana* Hook.f. (Anacardiaceae), *Ocimum gratissimum* L. (Lamiaceae), *Allophylus cobbe* (L.) Raeusch. (Sapindaceae) and *Centratherum anthelminticum* (L.) O.Kurz. (Asteraceae), were selected for the antimicrobial studies. The standard disk diffusion method was followed for the assay.

The ethnobotanical study throws light on the use of 380 species of plants, belonging to 93 different families, in folk medicine. Among the reported plants, 338 sps. are dicots and remaining 42 species belong to monocotelydons. In habit wise classification, trees are dominant drug sources with 124 sps. followed by herbs (85 sps.). In the family wise distribution, Euphorbiaceae and Fabaceae are the dominant families with 20 species each. Moraceae (16 sps.), Apocynaceae, Cucurbitaceae and Rubiaceae (15 sps. each) and Asteraceae (14 sps.) are the other dominating families. In the present study it has been also evidenced that, roots (26%)
are the most widely used in traditional medicine in Uttara Kannada. It is followed by leaves (23 %), bark (15 %) and fruit (10 %) as the parts in maximum use.

In the present study, in all 186 types of discomforts are discussed, which includes 23 veterinary ailments. The highest number of treatments is claimed in the treatment of skin diseases (439), while stomach disorders (280), pediatric treatments (195), fever (185) and menstrual disorders (138) are the other diseases having maximum claims.

The study also ascertains the maximum utility of the plants like Emblica officinalis, Embelia ribes, Ocimum sanctum, Calotropis gigantia, Moringa oleifera and Terminalia chebula in local health tradition.

During the present study, as much as 630 such new claims were recorded. Among them, maximum new claims are in the treatment of jaundice (51), while paralysis (29), diabetes (28) and piles (27) are the other leading ailments in the new claims. The new claims in the treatment of liver disorders and jaundice, cancer and tuberculosis gains much importance, as much work is going on throughout the world to develop more efficient drugs for their treatment.

Among the 380 plant species recorded in the present study, 10 are endemic to peninsular India, while 17 plants are under different threat status and needs immediate action plan for their protection and conservation.

In the antimicrobial studies, among the selected plants, Ocimum gratissimum showed maximum inhibitory effects on tested microorganisms.
In *Ocimum gratissimum*, chloroform extract in its higher concentrations, is more active against *Pseudomonas aeruginosa*, *Streptococcus faecalis* and *Escherichia coli*, while *Bacillus subtilis* is more sensitive to ethanol extract. The results of the present study are very significant as the zone of inhibition of the chloroform extract is much higher than that of standard (Nystatin, 100 units/disk) for the fungal strains, *Aspergillus niger* and *Penicillium chrysogenum*. Thus the usage of the leaves of *O. gratissimum* as an antiseptic and as antifungal agent by the local traditional healers can be substantiated.

The application of leaf juice of *Centratherum anthelminticum* in treatment of cuts and wounds by the local health practitioners indicates its probable antibacterial nature. In the present antimicrobial studies, the leaf extract of *C. anthelminticum* showed moderate activity against bacterial strains, while no antifungal activity could be observed in any of the extracts. The acetone extract have showed significantly higher activity among the four extracts tested in all the bacterial strains, while aqueous extract have showed the least activity.

*Holigama arnottiana*, a member of the family Anacardiaceae, is endemic to the Western Ghats. The bark of the tree is used to treat wounds and the acrid juice is applied to the skin diseases. The antimicrobial assay of the bark extract of *H. arnottiana* is first attempt of its kind in this plant. The results revealed a moderate activity against tested bacterial strains and no zone of inhibition has been observed against fungal strains. Maximum
inhibition was in acetone extract against E. coli at the concentration of 250 μg/disk.

The ethnomedicobotanical database of the present study revealed that the leaf juice of Allophylus cobbe is applied externally in the treatment of wounds. The antimicrobial assay of the same has been, thus, undertaken to find out the extent of expected biological activity. Among the tested extracts, acetone extract is found to be most active against all the bacterial strains, while the antifungal activity has not been observed in any of the extracts.

The results of antimicrobial activities of the calli extracts obtained from the leaves of A. cobbe and C. anthelminticum have showed significantly enhanced activity against all the tested microorganisms, in all the extracts. But again, as in case of their respective plant parts, the antifungal activity was absent in both the cases.

Thus based on the results following conclusions were drawn:

- Uttara Kannada district has rich source of ethnomedical knowledge, which needs continuous monitoring and intensive probes.
- The ethnomedical claims in the present study should be taken up for the clinical trials, as many of the claims are to cure diseases, such as cancer and jaundice, which have no proper cure in the modern medicine.
- Conservation priority should be given to the plants in the ethnomedicine as some of them are endemics and red-listed.
• *Ocimum gratissimum* can be used more for cutaneous disorders rather than antiseptic, as it shows higher antimicrobial activity than antibacterial.

• *Centratherum anthelminticum, Holigarna arnottiana* and *Allophylus cobbe* have moderate antimicrobial nature.

• The callus culture could be a better alternative source of secondary metabolites, by the use of which, natural resources can be conserved.