CHAPTER 3
RATIONALE AND AIM OF STUDY
Chapter 3: Rationale and Aim of Study

3.1. Rationale of the study

The scalp is exclusive among the diverse skin areas in humans, with high follicular density and a high rate of sebum production. A number of studies have been carried out for determining the causative agent of seborrheic dermatitis (SD) and its treatment, but a definitive understanding of the pathophysiology of SD awaits further research, especially for the Indian population.

The aim of this study is to isolate, identify and characterize the microflora in healthy and diseased scalps, so as to understand the role of microorganisms in dandruff, associated with the Indian population under study, and to analyse a possible treatment strategy.

Early workers have isolated many microorganisms from the human scalp, and the literature pertaining to this work shows that, the scalp harbours yeasts, moulds and bacteria in great abundance. But, identification of individual microorganisms inhabiting the scalp is essential. The nature and type of microflora in healthy and diseased scalp can provide greater insight into the disease condition, its diagnosis and cure. For this, the isolation, identification and characterisation of microflora from healthy and dandruff scalp is necessary.

Although SD has often been considered to be a fungal infection, the presence of non–fungal microorganisms on the scalp may also play an important role in the aggravation of scaling in dandruff. Determination of an association between fungal and non–fungal microorganisms of the scalp will provide an important insight into the role of this association in the severity of the condition, thus, providing an essential tool for diagnosis.

Considering the chronic and relapsing nature of dandruff, the treatment options need to be analysed. The data on scalp microflora will help in understanding the causative agents involved in dandruff. This data can be used to test antimicrobial agents against dandruff so as to develop an effective line of treatment.

Thus, it can be said that despite the elusive and idiopathic nature of dandruff, it remains a problem for great scientific and medical exploration.
3.2. **Aim**

To determine a possible infectious cause of seborrheic dermatitis of scalp and explore for treatment strategy

3.3 **Objectives**

1. Isolation, identification and characterisation of microflora from human scalp (healthy and dandruff) and seborrhoeic dermatitis skin (lesion and non–lesion regions)

2. Comparison of microflora: scalp (healthy and dandruff), seborrhoeic dermatitis skin (lesion and non–lesion regions) and scalp and skin (Dandruff and Lesion regions).

3. Determining an association between bacterial scalp microflora and fungal scalp microflora.

4. Development of an *in vitro* test consortium to be used for the analysis of an effective treatment strategy.

5. Determining the antimicrobial sensitivity of the test consortium.