CAgel Accelerated Tyrosine Pathway to Combat Leukotrichia

Goyal, Tanya

Jain, Harsh

Leukotrichia; premature discolouration of hair is a problem amongst youth worldwide, causing depression & reducing the amount of stress controlling hormones. It is caused by wane of melanin. Melanin is produced by the oxidation of the amino acid tyrosine. The prominent symptom of leukotrichia is greying of hair at an early age. The chemical dyes used for treatment are ineffective and temporary with severe side effects like asthma, cancer & allergies, therefore they are not recommended. This intrigued us to investigate a novel approach to formulate a hair gel for treating leukotrichia from Cucurbita pepo, a vegetable and Agaricus bisporus, a common edible fungus. C. pepo seeds extract taken out using amino acid extraction is rich in tyrosine while A. bisporus extract supplies tyrosinase, an important pathway enzyme. The extract was converted into a gel using gelatin and was tested for its efficacy to stimulate melanin production. Patch of scalp was cleared and the gel was applied for 25 consecutive days and various experiments were performed. Cell toxicity test to check the percentage mortality of cells in HEK cell line and Mice cell line NIH3T3. Hair colour range test to check the colour range of hair using L'Oréal© hair scale . Spectrophotometric analysis for all hair samples to check the melanin content. Hair fall count and hair strength to ascertain harmful effects of the gel. Recurrence after 15 days of application was also checked. Results proved that the gel was able to stimulate hair root cells to produce melanin. Its a sustained method as compared to temporary solutions such as hair dyes. Thus, the gel prepared from C. pepo and A. bisporus extract is effectively proved as a herbal & long term solution to treat leukotrichia and can be developed commercially.

Awards Won: