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**Report No. 45/72/94**

**Report on the comparative testing  
of octopirox and climbazole for antidandruff efficacy**

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**Project No.: 7348/45**

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## Report on the comparative testing of octopirox and climbazole for antidandruff efficacy

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### Summary

The objective of this study was to compare two antidandruff shampoos, one containing 0.3 % octopirox, the other 0.5 % climbazole, for antidandruff efficacy in vivo in a controlled field study in man.

The study was conducted with two groups of 10 volunteers of both sexes exhibiting different degrees of clinical dandruff. The trial consisted in a 4-week pretreatment period in which a shampoo without active ingredient was applied twice weekly (Tuesdays and Fridays), a treatment period of 5 weeks with the medicated shampoo and an aftertreatment period of 3 weeks with a shampoo without active ingredient.

Outcome was evaluated by determining the mean dandruff area (weekly dandruff sampling) by automated image analysis.

The results show that after 6 to 7 treatments (3 weeks) both the shampoo containing octopirox and the shampoo containing climbazole have a significant antidandruff effect persisting for up to 2 weeks after termination of treatment. No practice-relevant difference in antidandruff efficacy was observed between the shampoo containing octopirox and the shampoo containing climbazole.

## **1. Introduction and objective**

Both octopirox and climbazole are known from the literature to be effective antidandruff agents. The objective of this study was to compare these two compounds for antidandruff efficacy in a controlled in vivo field study in man (commissioned by Hoechst, Dr. Jürges dated 7 July 1994).

### **Octopirox**

1-Hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)-2-(1H)-pyridone monoethanolamine salt

### **Climbazole (Baypival)**

1-(4-Chlorphenoxy)-1-(1H-imidazolyl)-3,3-dimethyl-2-butanone

## **2. Method**

### **• Principle of the method**

This is based on the fact that dandruff is troublesome due to the size of the particles; the method is therefore based on sampling dandruff particles and determining their surface area.

### **• Test products**

- basic shampoo
- basic shampoo with 0.3 % by weight octopirox
- basic shampoo with 0.5 % by weight climbazole

All three shampoos were manufactured at EWW, Wella AG.

### **• Volunteer sample**

Two groups of 10 volunteers with different degrees of clinical dandruff

Octopirox: 4 men, 6 women aged between 34 and 52 years  
Climbazole: 4 men, 6 women aged between 26 and 53 years

## Study procedure

- 4 weeks pretreatment with basic shampoo
- 5 weeks treatment with basic shampoo containing octopirox or climbazole
- 3 weeks aftertreatment with basic shampoo

### Treatment

Twice weekly (Tuesday and Friday) in the test salon, Cosmital SA, 15 ml shampoo was applied by a hairdresser, massaged into the scalp for 1 minute, left on the scalp for 2 minutes, followed by rinsing

### Assessment

Dandruff was sampled from each volunteer once weekly (the hair was shaken over a microscope slide) and the mean surface area of a maximum of 100 dandruff particles was determined by automated image analysis (Quantimet 500, Leica).

The course of treatment was recorded as a mean of the average dandruff surface area values of each volunteer with reference to the study period.

## 3. Results and discussion

The results (means with standard deviation of the average dandruff surface area of all volunteers) are presented in the table below and the enclosed diagram.

	Treatment	Mean dandruff surface area in $\text{mm}^2 \cdot 10^2$	
		0.3 % octopirox	0.5 % climbazole
Week 1	Pretreatment	10.8 ± 4.8	9.5 ± 3.3
Week 2	Pretreatment	8.3 ± 2.4	7.3 ± 2.2
Week 3	Pretreatment	9.3 ± 2.8	9.0 ± 4.2
Week 4	Pretreatment	9.8 ± 3.5	10.4 ± 3.6
Week 5	Treatment	10.3 ± 4.7	10.6 ± 4.2
Week 6	Treatment	10.8 ± 3.8	10.0 ± 5.2
Week 7	Treatment	11.4 ± 2.8	8.5 ± 2.6
Week 8	Treatment	8.1 ± 5.4	7.0 ± 2.5
Week 9	Treatment	6.3 ± 2.4	4.8 ± 3.1
Week 10	Aftertreatment	6.0 ± 4.9	6.5 ± 4.6
Week 11	Aftertreatment	12.6 ± 4.2	10.1 ± 3.9
Week 12	Aftertreatment	11.6 ± 8.7	9.0 ± 6.0

The results show that both 0.3 % octopirox and 0.5 % climbazole induce a decrease in mean dandruff surface area after 3 – 4 weeks; this decrease still persists one week after termination of treatment. Both active agents thus exhibit marked dandruff efficacy. The two compounds, however, do not differ in their effectiveness.