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APPLICATION NUMBER:

22-369

PHARMACOLOGY REVIEW(S)

Pharmacology/Toxicology Review
NDA 22-369
0.03% bimatoprost solution for eyelash enhancement

DATE: 7/31/08

TO: Michael Puglisi
Project Manager, DAIOP
and
File, NDA 22-369

FROM: Amy L. Ellis, Ph.D.
Pharmacologist, DAIOP

THROUGH: Wendelyn Schmidt
Supervisory Pharmacologist, DAIOP

RE: Pharmacology/Toxicology Review for bimatoprost solution for eyelash enhancement (NDA 22-369)

This NDA is for a 0.03% solution of bimatoprost. The sponsor, Allergan (Irvine, CA), is requesting approval for the indication "To improve the prominence of natural eyelashes as measured by increases in growth (length), fullness (thickness) and darkness (intensity)". This drug product is identical to LUMIGAN® (NDA 21-275), used chronically to treat open angle glaucoma and ocular hypertension. The only difference between LUMIGAN® and 0.03% bimatoprost solution for eyelash enhancement is ——— and the eyelash enhancement solution will be packaged with 60 single use plastic applicators that will be used to apply the solution to the lash line of each eye once daily. Trade names proposed for the eyelash enhancement product include LATISSE™ and ——— b(4)

NDA 21-275 for LUMIGAN® belongs to Allergan and the nonclinical studies conducted to support the development and approval of that product are also appropriate to support the current NDA via cross-reference. Thus, the current NDA 22-369 does not require a pharmacology/toxicology review. The sponsor did not conduct any additional nonclinical toxicology studies to support the current NDA and none were necessary. The sponsor included a brief report (Effect of Bimatoprost (Lumigan) on the Eyelashes of Mice, Report No. BIO-07-630) for a nonGLP study on the effects of 0.03% bimatoprost on eyelash growth in C57BL/6 mice. According the report (which contained no raw data), bimatoprost increased the thickness and length of short and medium length (but not long) eyelashes and increased the number of eyelash follicles with 2 hairs but did not increase the number of follicles. The NDA also contains reports of a single dose dermal absorption study in mice using an alcoholic gel formulation of bimatoprost (Report No. PK-04-157) as well as a predictive multiple dose PK analysis based on data from that dermal absorption study (Report No. PK-08-038). The gel formulation is not being marketed; these studies will not be reviewed.

The pharmacologist has no objection to the approval of NDA 22-369 for 0.03% bimatoprost solution for eyelash enhancement. The label contains the appropriate cautions to users of this product including the potential for ocular effects and increased pigmentation of skin or iris. The product appears reasonably safe if used as directed. Many portions of the label for the eyelash enhancement solution will be the same as that for LUMIGAN®, including the *Carcinogenesis, Mutagenesis, Impairment of Fertility* and *Pregnancy* sections. This is appropriate and acceptable. The reviewer has no additional label recommendations.

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/s/

Amy Ellis
8/1/2008 02:56:19 PM
PHARMACOLOGIST
The pharmacologist has no objection to the approval of this NDA.
Wendy- You signed the paper copy of this review memo on 8/1/08.

Wendelyn Schmidt
9/18/2008 03:40:30 PM
PHARMACOLOGIST