



Kalichem
a lamberti company

FLYBLOK



Vegetable specialty against mosquitos
Active against *Aedes albopictus* «tiger mosquito»

FLYBLOK

Flyblok is sourced from a selected species, *Catalpa Bignonioides*

Catalpa, commonly called catawba, is a genus of flowering plants in the trumpet vine family Bignoniaceae, native of Americas, Caribbean, East Asia

PLANT DERIVED ACTIVE INGREDIENT



MARKET POSITIONING

Active ingredient from **Catalpa Bignonioides leaf extract**

Green and sustainable philosophy

No GMO

Natural protection against insects

Tested successfully against tiger mosquitoes

Active on a wide range of species (flies, mosquitoes, lice etc)

Ideal for human & PET care

China compliant



FLYBLOK ACTIVITY

Flyblok has proven natural protection features against mosquitoes and other insects

Its activity is related to its woody fragrance note, that exerts repelling effect over mosquitoes and many other insect species

Flyblok is an organic and valuable alternative to chemical treatments, with a specific care for the environment respect and safety profile

Flyblok works mainly through the monoterpene *Catalpolo**, active expressed in the leaves of the species sourced for Flyblok 4 times more than in other specimen of the same species

RATIONALE OF FLYBLOK ACTIVITY



IN VIVO TESTS

NUMBER OF BITES, APPLICATIONS REQUIRED AND SLEEP QUALITY EVALUATION

20 subjects

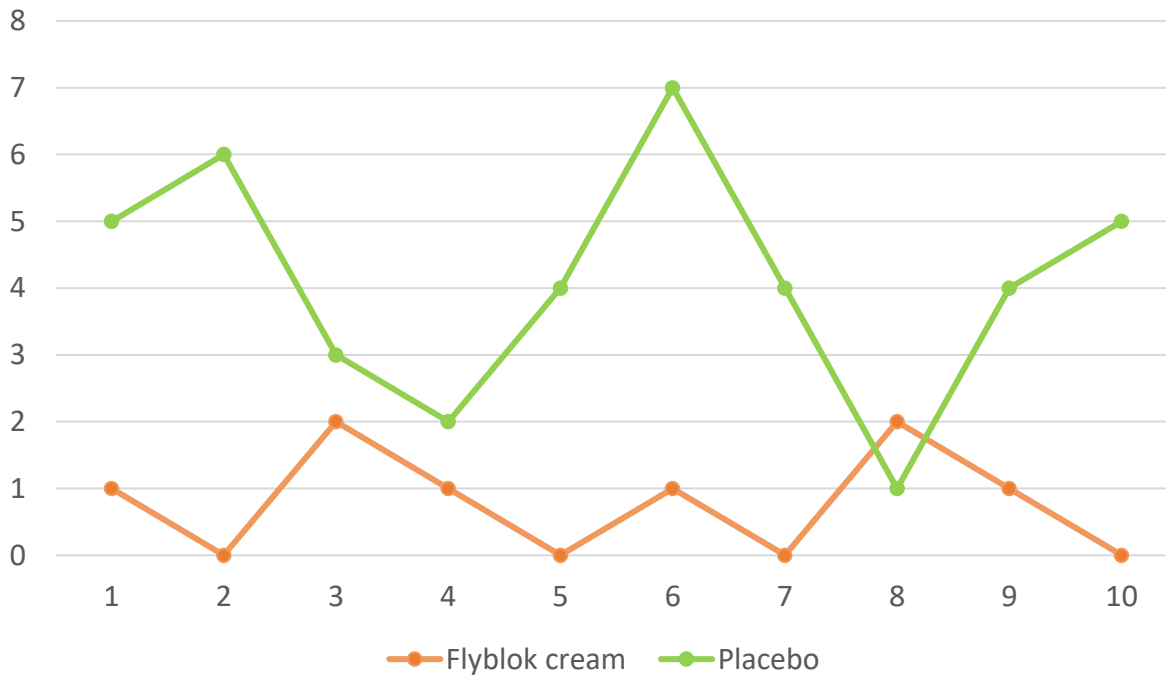
Flyblok was duly diluted in water and glycerin at **3.0 %** and was thickened by means of crosspolymers and other additives to build a cream

The placebo was prepared in the same way, using an extract from *Greek hay*



IN VIVO TESTS

Number of bites



NUMBER OF BITES VS PLACEBO

The 10 subjects who applied Flyblok cream reported globally 8 bites

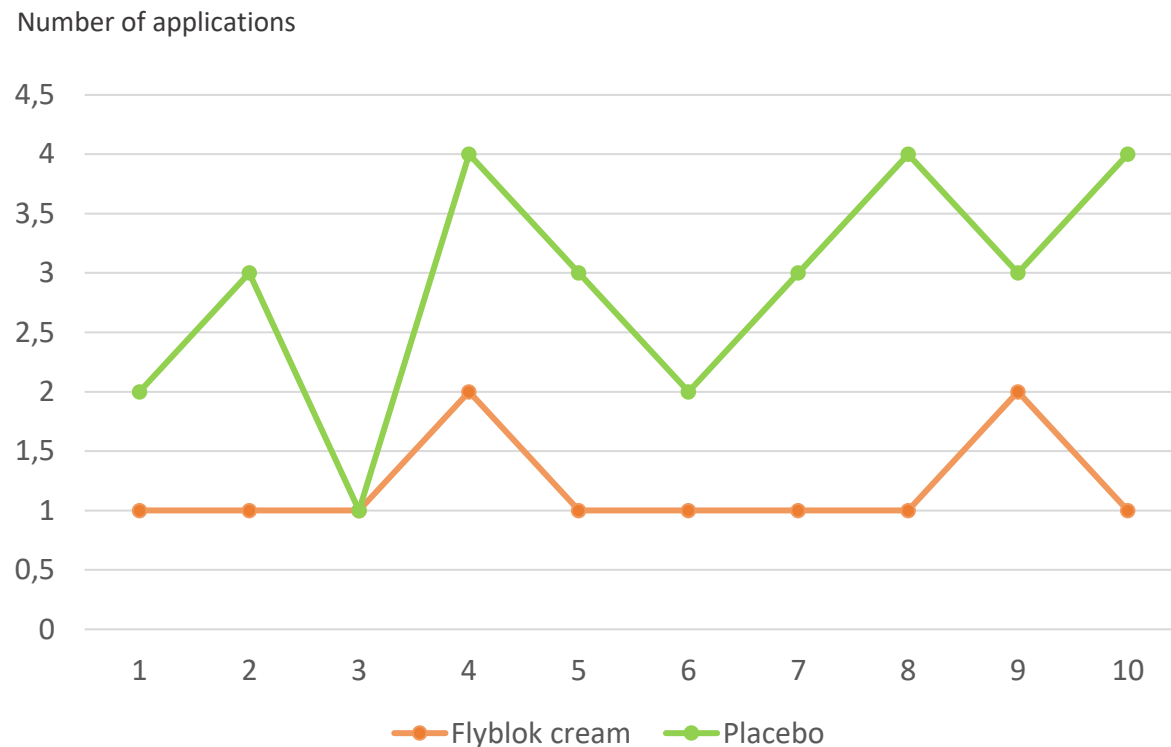
The placebo gave an overall value of 41 bites

Flyblok cream, in 40 % of cases, lead to zero bites over night



IN VIVO TESTS

NUMBER OF APPLICATIONS VS PLACEBO



The 10 subjects who applied Flyblok cream applied the product in average once per night

The placebo cream required multiple applications per night



IN VIVO TESTS

ARM IN CAGE TEST

Flyblok was used in a cosmetic lotion at **3.0 %** and was applied on the forearm for an *arm in cage* test

The number of probings was recorded every 60 minutes

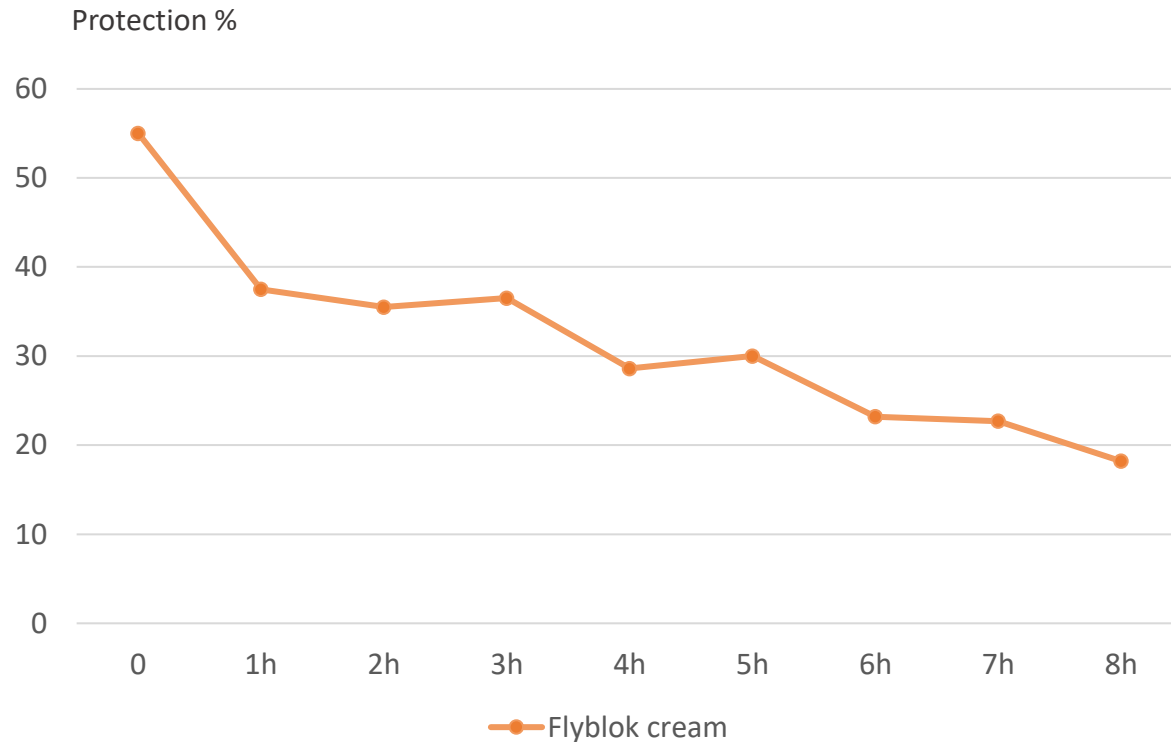
The Flyblok cream protection was evaluated against the *Aedes albopictus* (tiger mosquito)



Entostudio



IN VIVO TESTS



ARM IN CAGE TEST

The protection percentage vs tiger mosquitoes of the cream with Flyblok **was +55%** at time 0 and still significant 8 hours after the application

The protection percentage was assessed according to the following formula:

$$\% \text{ Protection} = 100 - \left(\frac{\text{Number of probings after treatment} \times 100}{\text{Number of probings before treatment}} \right)$$



Claims

- Natural protection vs insects
- Active against tiger mosquitoes
- Woody fragrance
- Vegetable active protection
- Human and PET use
- Sustainable sourcing
- GMO Free
- Single application gives multiple hours protection



BIOMIMETIC HYDROXYAPATITE

MAIN APPLICATIONS & RECOMMENDED CONCENTRATION OF USE

cosmetic applications

1. Ideal for sprays, creams, gels, balms, water based formulations and many others
2. Concentration of use: 3.0 ÷ 5.0 %
3. Flyblok comes in solution form and needs to be added in cold process after the emulsification process
4. Wide pH of use, ideal also for acidic formulations



NATURAL PROTECTION SPRAY

#	INCI	[%]
1	OLIVOIL AVENATE EMULSIFIER	4.0
2	Coco caprylate	6.0
3	Caprylic/capric triglyceride	6.0
4	FLYBLOK	5.0
5	Lecithin, tocopherol, ascorbyl palmitate, citric acid	0.1
6	Aqua	to 100.0
7	Glycerin	1.0
8	Microcrystalline cellulose	1.0
9	Preservatives, parfum and pH regulator	as needed

Base **hyperfluid lotion** formulation skeleton; ideal for body sprays, baby care moisturizing creams, after-sun emulsions.

Recommended final pH not below 5.5

