

**ABSTRACT TITLE**

**TITLE:** Comparison of two rodent models of dry eye induced by Scopolamine

**PROGRAM # (Final ID)**

**ABSTRACT FINAL ID:** 6002 - A0065

**SESSION TYPE:** Poster Session

**POSTER BOARD # (DOI)**

**DIGITAL OBJECT IDENTIFIER (DOI):** A0065

**PRESENTATION START/END**

**SESSION ABSTRACT START TIME:** 10:30 AM

**SESSION ABSTRACT END TIME:** 12:15 PM

**SESSION # (Abbreviation)**

**SESSION ABBREVIATION:** 535

**SESSION TITLE:** Dry Eye and Lacrimal Gland V

**SESSION DAY & DATE:** Thursday, May 9, 2013

**SESSION START TIME:** 10:30 AM

**SESSION END TIME:** 12:15 PM

**AUTHORS (LAST NAME, FIRST NAME):** Elena, Pierre-Paul<sup>1</sup>; Cimbolini, Nicolas<sup>1</sup>; Antonelli, Sophie<sup>1</sup>; Feraille, Laurence<sup>1</sup>; Barabino, Stefano<sup>2</sup>; Margaron, Philippe<sup>1</sup>

**INSTITUTIONS (ALL):** 1. Iris Pharma, La Gaude, France.  
2. Clinica Oculistica, Genova, Italy.

**Study Group:**

**ABSTRACT BODY:**

**Purpose:** Dry eye syndrome is a relatively common disease with multifactorial causes. It is necessary to have an experimental model to test and select therapeutic candidates for this disease.

Here we compare two experimental models using scopolamine, a tropane alkaloid drug with muscarinic antagonist effects, to suppress lacrymation and induce dry eye symptoms.

**Methods:** The first experimental model consisted in inducing dry eye in albino rats by systemic and continuous delivery of scopolamine (20mg/day) via osmotic pumps implanted subcutaneously on Day 1. Animals were divided in three groups of five rats: In the first group the pumps delivered saline solution. The second and the third groups the pumps delivered 20 mg/day of scopolamine solution over 21 days. The second experimental model consisted in placing pigmented mice in a controlled environmental chamber

(relative humidity <25%, air-flow 15L/min, temperature 20-22°C). Mice received transdermal patches of scopolamine (0.5 mg/72h) every 3 days. Animals were divided in three groups of five mice: the first group was placed in normal environmental condition (relative humidity >55%, temperature 20-22°C) without transdermal scopolamine administration. The second and the third groups were placed in the controlled environmental chamber with transdermal scopolamine administration.

For both models, the first two groups received saline instillation and the third group, 0,05% cyclosporine eye drops.

Tear production was measured with the phenol red thread (PRT) test and the corneal defects were examined by slit-lamp observation. These examinations were performed at baseline and on day 7 for the mouse and rat models, and on days 14 et 21 only for rat model in both eyes.

**Results:** Symptoms of dry eye, including decrease in tear secretion, appearance of corneal defects and a rise in the inflammatory markers investigated, were observed in both rat and mouse models. Moreover these symptoms decreased after treatment with topical cyclosporine, a drug used in dry eye.

**Conclusions:** Scopolamine treated rats and combination of scopolamine treatment and controlled environment in mice, are therefore valuable models to mimic human dry eye syndrome.

(No Image Selected)

**Commercial Relationship(s) Disclosure:**

Pierre-Paul Elena: Commercial Relationship: Code N (No Commercial Relationship)

Nicolas Cimbolini: Commercial Relationship: Code N (No Commercial Relationship)

Sophie Antonelli: Commercial Relationship: Code N (No Commercial Relationship)

Laurence Feraille: Commercial Relationship: Code N (No Commercial Relationship)

Stefano Barabino: Commercial Relationship: Code N (No Commercial Relationship)

Philippe Margaron: Commercial Relationship(s);Iris Pharma:Code E (Emploment)

**Grant Support:** No

**Support Detail:** None

**Clinical Trial Registration:** No

**Other Registry Site:**

**Registration Number:**

---