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The Pax protein Eygone (Eyg) interacts with the pi-RNA component Aubergine (Aub) and controls egg chamber development in *Drosophila*

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## Abstract

The *eygone* (*eyg*) gene encodes Eyg, a transcription factor of the Pax family with multiple roles during *Drosophila* development. Eyg has been shown to be nuclear in the cells where it functions. In this report we describe a new functional cytoplasmic distribution of Eyg during egg chamber development in the female ovarioles. The protein is present from the germarium until stage 10 of cyst development. The majority of egg chambers that develop in the absence of Eyg arrest their development before stage 10, show augmented levels of the telomeric retro-transposon TART-A and low levels of heterochromatin marks in the oocyte nucleus. During the maternal to zygotic transition (MTZ) Eyg seems to play a role in destabilizing germ cell less (*gcl*) and oo 16 RNA binding protein (*orb*) mRNAs. We were able to show that Eyg interacts with Aubergine (Aub), a component of the pi-RNA pathway during egg chamber development. This interaction could be essential for Eyg to be retained in the cytoplasm and fulfill its functions there.

## Introduction

The *eygone* (*eyg*) gene encodes transcription factor of the Pax family (Jun et al., 1998). Pax proteins, which are present throughout the animal kingdom, are transcription factors

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