



**HAL**  
open science

## The role of G proteins in the control of intraflagellar transport

Diego Huet, Sylvie Perrot, Thierry Blisnick, Philippe Bastin

► **To cite this version:**

Diego Huet, Sylvie Perrot, Thierry Blisnick, Philippe Bastin. The role of G proteins in the control of intraflagellar transport. First International Cilia in Development and Disease Scientific Conference, May 2012, Londres, United Kingdom. , 1 (Suppl 1), pp.P24, 2012. pasteur-00752960

**HAL Id: pasteur-00752960**

**<https://pasteur.hal.science/pasteur-00752960>**

Submitted on 16 Nov 2012

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# The role of G proteins in the control of intraflagellar transport

D Huet\*, SP Perrot, TB Blisnick, PB Bastin

From First International Cilia in Development and Disease Scientific Conference (2012)  
London, UK. 16-18 May 2012

Intraflagellar transport (IFT) is a mechanism used for formation of cilia and flagella in eukaryotes and little is known about its regulation. We propose that a RAB-like protein termed RABL4 (IFT27), which is associated with IFT complexes could be involved in IFT regulation. Indeed, since small GTPases are known for being key regulators of many trafficking processes. We used different approaches in order to determine the role of RABL4 during flagellum formation in *Trypanosoma brucei*. First, GFP::RABL4 experiments showed that the protein is localized in the cell body, at the basal body and within the flagellum, like all IFT proteins studied so far in trypanosomes. Bi-directional movement of GFP fusion protein was observed in the flagellum. RABL4 silencing demonstrated an essential role in flagellum assembly and revealed a mixture of phenotypes. Some cells do not assemble a flagellum, whereas others produce short flagella filled with material looking like IFT complexes. The structure of these short flagella is severely affected, with disrupted microtubule doublets, mislocalisation of the central pair and impaired PFR (an extra-axonemal structure) construction. The latter one can be excessively large, with numerous layers that affect the shape of the flagellum membrane. We propose that RABL4 could participate to the loading of flagellar precursors into IFT complexes for transport and we are currently analyzing GDP or GTP locked versions of the protein to challenge this hypothesis.

Published: 16 November 2012

doi:10.1186/2046-2530-1-S1-P24

Cite this article as: Huet *et al.*: The role of G proteins in the control of intraflagellar transport. *Cilia* 2012 **1**(Suppl 1):P24.

\* Correspondence: [dhuet@pasteur.fr](mailto:dhuet@pasteur.fr)  
Institut Pasteur, France

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at  
[www.biomedcentral.com/submit](http://www.biomedcentral.com/submit)

