

Functional analysis of the dynein regulatory complex in *Paramecium tetraurelia*

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SUMMARY

Paramecium has several hundred cilia and can swim flexibly in water using thrust generated by ciliary movement. That ciliary movement can generate various amounts of thrust by changes in the beat frequency, beat direction, and wavy movements produced by the sequential action of cilia, so-called metachronal waves. Dynein is a motor protein used for ciliary movement. Activation of dynein is well known to be regulated by other axonemal proteins, such as the radial spoke and central pair apparatus. This study specifically examines the dynein regulatory complex and conducts functional analysis with RNAi by feeding. The dynein regulatory complex silenced cells exhibit slow swimming and abnormal ciliary beating. These results suggest that the dynein regulatory complex plays an important role in formation of the ciliary wave form.