# Template for Presenting a Research Article

# BIOE.44

## *Synthetic Biology Lab*

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**BMC Biotechnology**

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# Quantitative promoter analysis in *Physcomitrella patens*: a set of plant vectors activating gene expression within three orders of magnitude

*Can you understand the title?*

Verena Horstmann[1], Claudia M Huether[1], Wolfgang Jost[2], Ralf Reski[1] and Eva L Decker*[1]

Address: [1]University of Freiburg, Plant Biotechnology, Schaenzlestr. 1, 79104 Freiburg, Germany and [2]greenovation Biotech GmbH, Boetzinger Str. 29b, 79111 Freiburg, Germany

Email: Verena Horstmann - verena.horstmann@biologie.uni-freiburg.de; Claudia M Huether - claudia.huether@biologie.uni-freiburg.de; Wolfgang Jost - wjost@greenovation.com; Ralf Reski - ralf.reski@biologie.uni-freiburg.de; Eva L Decker* - eva.decker@biologie.uni-freiburg.de

* Corresponding author

*Do you know any of the authors and if so what do you think of their work?*

*Where do the authors work? Reputable? Renowned?*

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*Is the corresponding author the head of the lab? Or, a new emerging investigator? Or, something else?*

*How long did it take their manuscript to get published? Revisions likely?*

Main finding
(use a declaritive statement)

**Transcription can be programmed over 1000-fold range in moss, using promoters from other critters!**

*(an illustrative figure would be nice here but the paper doesn't have one!)*

# Primary evidence
## (show & explain the most important data)

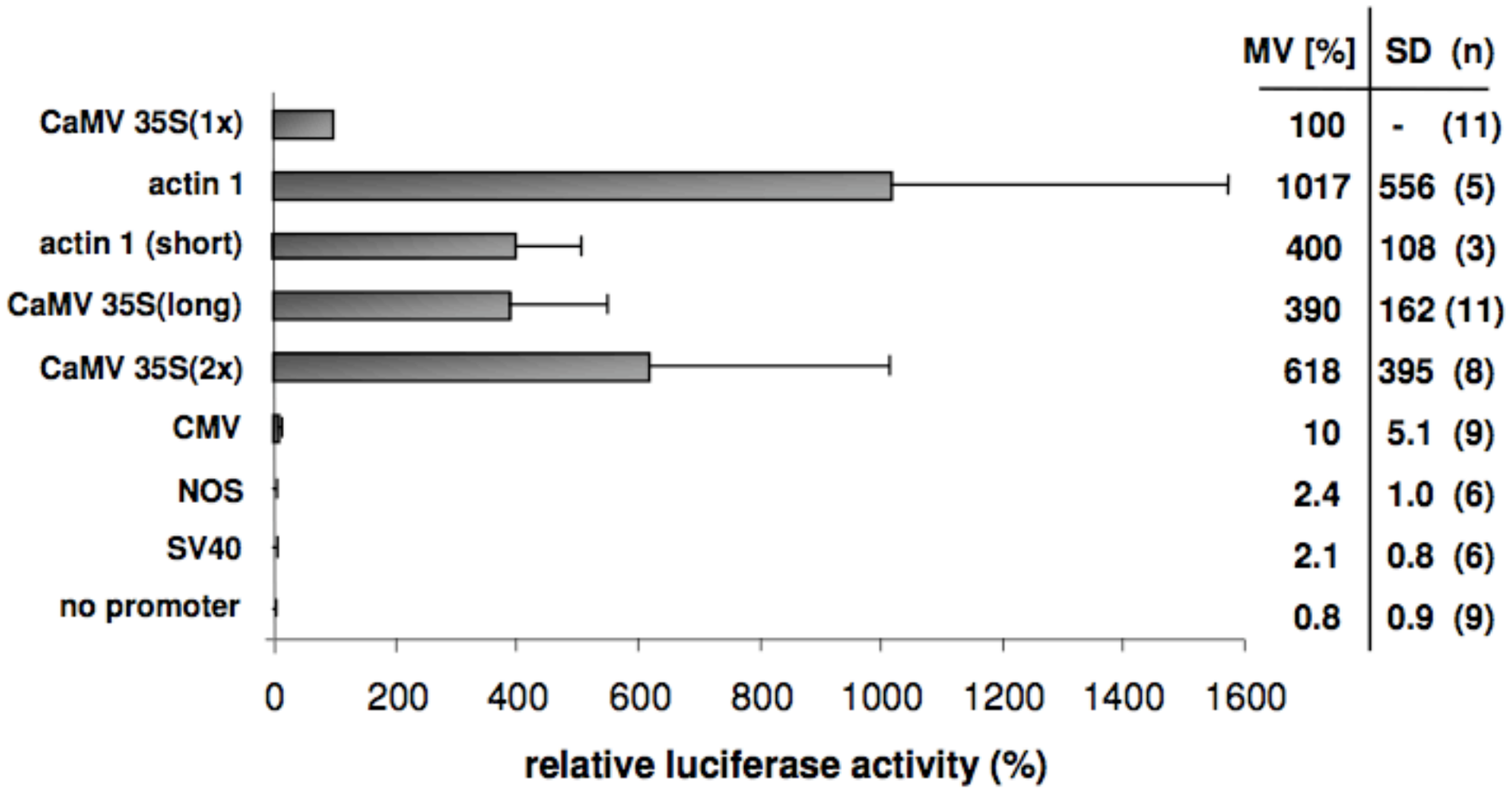


**Figure 2**
**Comparison of different heterologous promoters in *Physcomitrella patens*.** Firefly luciferase light emission was normalised by *Renilla* luciferase induced by the control plasmid. The strengths of various promoters are shown in relation to the activity of the CaMV 35S promoter, which was set as 100%. Each column represents the mean value (MV) of at least three independent experiments (n: number of replication) where all samples were measured in triplicates. SD: standard deviation.

# Main weakness

(what's the biggest problem?)

***No direct measures of gene expression. Impossible to know how much expression is going on. Would be good to see RNA or protein quantitation***

# Future work

(what needs to happen next)

***1. Quantify and calibrate aboslute expression levels***

***2. Develop standard promoter junctions that work with most / all coding sequences***

# Related reading
## (what will you read next?)

Curr Opin Plant Biol. 2007 Apr;10(2):182-9. Epub 2007 Feb 8.

### Physcomitrella patens: mosses enter the genomic age.

Quatrano RS, McDaniel SF, Khandelwal A, Perroud PF, Cove DJ.

Plant Signal Behav. 2010 Jun 5;5(6). [Epub ahead of print]

### Regulatory networks of cadmium stress in plants.

Dalcorso G, Farinati S, Furini A.

Plant J. 2010 Jan;61(1):176-87. Epub 2009 Oct 7.

### Heritable targeted mutagenesis in maize using a designed endonuclease.

Gao H, Smith J, Yang M, Jones S, Djukanovic V, Nicholson MG, West A, Bidney D, Falco SC, Jantz D, Lyznik LA.

Mol Biotechnol. 2010 Apr 8. [Epub ahead of print]

### Characterization and Promoter Analysis of a Cotton RING-Type Ubiquitin Ligase (E3) Gene.

Ho MH, Saha S, Jenkins JN, Ma DP.