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(54) **Title:** USE OF AMMONIUM AND PHOSPHATE IONS FOR IMPROVING THE DETECTION OF LUCIFERASE

(57) **Abstract:** The invention relates to methods and kits for detecting enzyme activity using bioluminescence. In particular, it relates to a novel assay system with increased light yield for a sensitive and convenient detection of luciferase activity, such as luciferase reporter enzyme activity. Provided is a method of detecting luciferase activity in a sample, comprising incubating the sample in the presence of luciferin and ATP to allow the generation of a light signal, wherein said light signal is enhanced by performing the incubation in a reaction mixture comprising phosphate and ammonium ions, and measuring the light signal. The invention also relates to kits for use in such method.

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