**2bind GmbH**

BioPark III

Josef Engert Str. 13

93053 Regensburg

Tel: +49 941 9432849

Fax: +49 941 9432474

Email: info@2bind.de

Teena Mehta, Ph.D.

Science Editor

27. May 2016

Cover letter:

Dear Dr. Mehta;

please find enclosed our article entitled: “Mapping the binding site of an aptamer on ATP using MicroScale Thermophoresis” by Entzian et. al. for consideration as a publication in JoVE.

Nucleic Acid Aptamers are very interesting and versatile binding molecules with various applications from therapeutics to diagnostics as they have the potential to bind more or less any kind of target molecule. Even challenging molecules like small molecules such as drugs, metabolites or antibiotics can be bound by aptamers. For the later assay design it is absolutely essential to understand the basic binding parameters of the aptamer-small molecule interactions. However, the lack of sophisticated methods to study small molecule-aptamer interactions remains an issue in the field.

The presented article demonstrates the potential of the innovative MicroScale Thermophoresis technology to overcome this issue. The article shows a detailed protocol how to use the MicroScale Thermophoresis (MST) to characterize aptamer-small molecule interactions. The technology is described in detail and the strengths are shown. Using an example study the user is guided step by step through the process. Footnotes help the user to find solutions for problems. Mapping down the binding site of the well known ATP aptamer of Huizenga and Szostak on the ATP molecule demonstrates the power of the MicroScale Thermophoresis.

**Suggested reviewers:**

Prof. Dr. Gernot Längst

Biochemie III

Universität Regensburg

Universitätsstraße 31

93053 Regensburg

Germany

Prof. Dr. Ciara O´Sullivan

Nanobiotechnology & Bioanalysis Group,

Department of Chemical Engineering,

Universitat Rovira i Virgili,

Avinguda Països Catalans, 26

Tarragona 43007

Spain

Dr. Philipp Baaske

NanoTemper Technologies GmbH

Flößergasse 4

81369 Munich

Germany

Prof. Beatrix Süss

Technische Universität Darmstadt  
Fachbereich Biologie, B2|03  
Schnittspahnstraße 10  
64287 Darmstadt

Prof. Ulrich Hahn

Universität Hamburg

Fachbereich Chemie

Institut für Biochemie und Molekularbiologie

Martin-Luther-King-Platz 6

20146 Hamburg

Prof. Jean-Jacques Toulmé

ARNA Laboratory - Inserm U869

Institut Européen de Chimie et Biologie

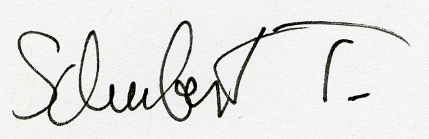
2 rue Robert Escarpit

33607 Pessac,

France

Thank you in advance for your consideration

Yours sincerely



Dr. Thomas Schubert, CEO. 2bind GmbH

Corresponding Author, schubert@2bind.com