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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ILLUMINA, INC.
Petitioner,

v.

THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK
Patent Owner.

IPR2018-00291
U.S. Patent 9,718,852

PETITIONER'S REPLY

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OTHER AUTHORITIES

I. INTRODUCTION

The Tsien reference contains the same disclosure as Columbia's patent—both teach efficient polymerase incorporation and efficient cleavage of 3'-O-capped nucleotides. Columbia's declarant, Dr. Menchen, was asked to identify any disclosure in Columbia's patent that is not also in Tsien. The only difference he identified was: "Tsien doesn't describe allyl ethers." Ex. 1113, 329:2-14. This supposed difference is fictitious. Tsien expressly discloses "allyl ethers" as a capping group and its advantages (Ex. 1013, 24:29-25:3), which Dr. Menchen acknowledges. Ex. 1113, 324:6-326:20.

Not only does Tsien teach allyl ethers, but it is undisputed that 3'-O-allyl capped nucleotides are efficiently incorporated by polymerases and efficiently cleaved under appropriate conditions. Columbia's patent presumes this by claiming such nucleotides without any details explaining how to incorporate or cleave them. Yet Columbia's Patent Owner Response ("POR") spends pages criticizing Tsien, arguing that a person of ordinary skill in the art ("POSA") would not have expected 3'-O-allyl capped nucleotides to be efficiently incorporable based on the later-published Metzker reference. Dr. Menchen admitted, however, that he was motivated to include the 3'-O-allyl capping group in his own 1998 and 1999 patents precisely because of Metzker's disclosure. Ex. 1112, 189:5-13.

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