

UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

DIVISION OF CORPORATION FINANCE

August 16, 2023

Eric E. Poma, Ph.D. Chief Executive Officer Molecular Templates, Inc. 9301 Amberglen Blvd, Suite 100 Austin, TX 78729

> Re: Molecular Templates, Inc. Registration Statement on Form S-3 Filed August 10, 2023 File No. 333-273864

Dear Eric E. Poma:

This is to advise you that we have not reviewed and will not review your registration statement.

Please refer to Rules 460 and 461 regarding requests for acceleration. We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Please contact Tyler Howes at 202-551-3370 with any questions.

Sincerely,

Division of Corporation Finance Office of Life Sciences

cc: Melanie Ruthrauff Levy, Esq.