Accelerated First-in-Human Clinical Trial of EIDD-2801/MK-4482 (molnupiravir), a Ribonucleoside Analogue with Potent Antiviral Activity Against SARS-CoV-2

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Abstract

A recently published article described the safety, tolerability and pharmacokinetic profile of molnupiravir, a novel antiviral agent with potent activity against SARS-CoV-2, the causative agent of COVID-19. Here, we report an unprecedented collaboration between sponsor, contract research organization (CRO) and regulatory authorities that enabled accelerated generation of these phase I data, including administration of the first-in-human (FIH) dose of molnupiravir within 5 days of receiving approval from the Research Ethics Committee (REC) and the Medicines and Healthcare products Regulatory Agency (MHRA) in the United Kingdom (UK). Frequent, direct communication with regulatory authorities and parallel, streamlined sponsor-CRO working groups facilitated this accelerated timeline. Dosing in healthy volunteers was completed for eight single ascending dose (SAD) cohorts, seven multiple ascending dose (MAD) cohorts, and one food-effect (FE) cohort within approximately 16 weeks of initial protocol submission to the REC and MHRA. Working to standard industry timelines, the FIH study would have normally taken approximately 46 weeks to complete and 33 weeks to enable Phase 2 dosing. Data from this study supported submission of a Phase 2/3 clinical trial protocol to the US Food and Drug Administration (FDA) within eight weeks of initial protocol submission, with FDA comments permitting phase 2 study initiation within two additional weeks. In the setting of a global pandemic, this model of collaboration allows for accelerated generation of clinical data compared to standard processes, without compromising safety.

Full Text

This preprint is available for download as a PDF.

Figures

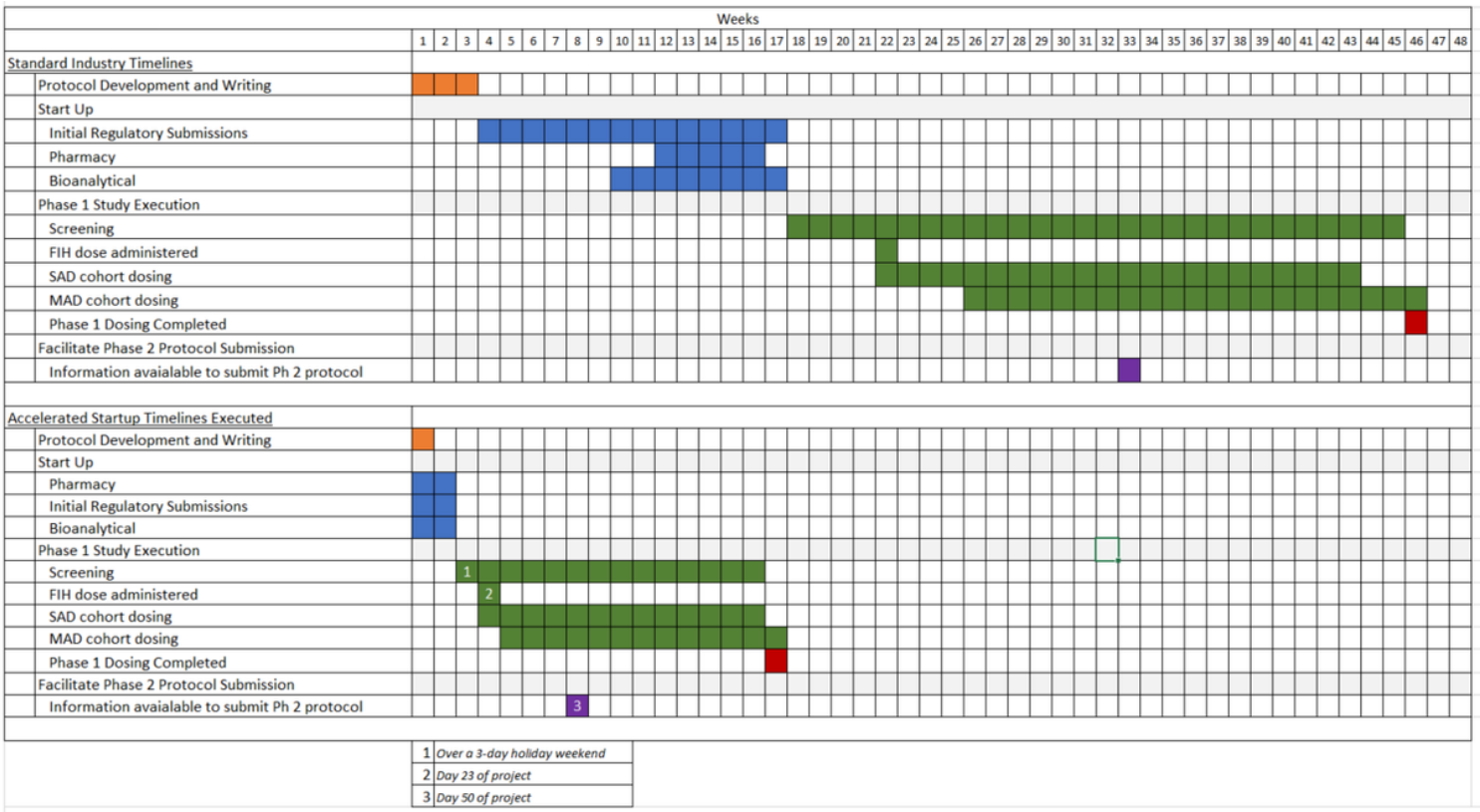

Figure 1

Time from submission of the protocol to the ethics committee and regulatory authority to completion of dosing of 8 SAD, 7 MAD and 1 FE cohorts under standard industry timelines compared with what was achieved under accelerated conditions.