Industry Applications of Cryo-Electron Microscopy

Nicole Poweleit[1]

[1]NanoImaging

npoweleit@nanoimagingservices.com

Cryo-electron microscopy (cryo-EM) has revolutionized structural biology by enabling structure determination of systems previously inaccessible, and it is increasingly the technique of choice to structurally enable drug discovery processes. From low resolution data assessing the quality and integrity of vaccines and drug delivery systems, to high-resolution structures of targets and small molecules, cryo-EM offers a wealth of direct information about samples of interest. Unfortunately, barriers remain that prevent cryo-EM from being a routinely successful tool in drug discovery, including costs, skilled sample preparation, the need for fast turnaround, the requirement for advanced data processing and interpretation, and quality control. NanoImaging Services is a contract research organization that specializes in providing all level of cryo-EM services to pharmaceutical and biotechnology companies. Here we provide an overview of how cryo-EM technology can be adopted by industry, and how we can provide support in all stages of development and validation of novel therapeutics. The data presented here give a snapshot into how we developed and applied workflows and protocols uniquely designed to facilitate cryo-EM adoption in industrial setting. The numerous samples analyzed, and the high success rates are a clear demonstration of the applicability and success of our pipelines.