Title: Investigation of the molecular mechanisms of cardiotoxicity utilizing novel cardiovascular in vitro models and technology platforms

Damage to the cardiovascular system either structural or functional in nature by drugs (drug-induced cardiotoxicity) is an important concern during drug development. There is an unmet need to identify potential factors and gain molecular understanding of mechanisms underlying drug-induced cardiotoxicity. Within the cardiovascular safety team at AstraZeneca, we see the potential of integrating improved physiologically relevant cell models that more accurately recapitulate the patient population (i.e. disease background), with omics approaches to help more accurately predict drug-induced toxicology early in drug discovery, enabling optimal compounds to progress into clinical development.

In this graduate role, you will generate advanced cardiovascular models (healthy or diseased) representative of the key cell types in the heart using both stem cell derived cells and primary cells, and characterize their response to drug-induced injury utilizing a variety of state-of-the-art technology platforms. You will be at the forefront of innovative medicines working with experts across global multi-disciplinary teams in the fields of cardiac biology and toxicology.

From this cutting-edge work there is the potential for publication in high-impact journals and influence the future direction of the cardiovascular safety strategy within AZ.

Objectives:

1. Characterization of novel physiologically relevant diseased and healthy in vitro cardiovascular models response to pharmacological challenge.
2. Investigation of the underlying molecular mechanisms of drug-induced cardiotoxicity utilizing multiple advanced technology platforms.

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