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***SEEK Research published in Royal Society of Chemistry journal, Chemical Communications***

**London, UK, 19 September 2013:** SEEK, a privately-owned UK drug discovery group, notes that research conducted by SEEK drug discovery group through subsidiary Tangent Reprofilng Limited, and the Department of Chemistry and Warwick Medical School at the University of Warwick has been published in the Royal Society of Chemistry journal, *Chemical Communications*. Please see University of Warwick press release below:

**Misread heart muscle gene a new clue to risk of sudden cardiac death**

Scientists have discovered that a drug which increases the risk of sudden cardiac death interacts with mistranslated protein-coding genes present in heart muscle.

The cardiac drug flecainide was developed to prevent and treat serious arrhythmias in the ventricles - the main pumps of the heart. These cause very rapid heart rates which can be lethal if unchecked. However in clinical trials, flecainide, and its sister molecule encainide, were reported to more than double the risk of sudden cardiac death.

Joint work by researchers in the Department of Chemistry and Warwick Medical School at the University of Warwick, and at the SEEK drug discovery group through subsidiary Tangent Reprofilng Limited, is now allowing insight into how cardiac death risk might be increased by these drugs. The method involves persuading viruses to provide a read-out on their surface of proteins related to human heart disease.

Genes that code for proteins, including those from the heart, may be read differently to normal - by starting at a different "letter" in the genetic code - these are called alternative reading frame (ARF) proteins, a bit like a very simple old cipher.

In experiments just published in the Royal Society of Chemistry journal *Chemical Communications*, the researchers show that flecainide appears to interact with just such an ARF protein, the "normal" version of which is crucial to heart function. This opens the way to further research that may illuminate the positive and negative elements of flecainide's action.

Paul Taylor, Associate Professor in Organic Chemistry, commented "Genes provide the code for cells to make proteins. This new research indicates that flecainide is able to interact with an unexpected translation of the gene coding for the protein - myosin regulatory light chain - a crucial component in the contraction of heart muscle fibres."

Associate Professor of Chemistry Andrew Marsh added "The work is particularly important as it represents a new way to uncover interactions of drugs such as flecainide with ARF proteins. The fuller biomedical significance of these unusual, 'mistranslated' proteins is only just becoming recognised."

Dr Suzanne Dilly, Head of Chemical Biology at SEEK, said "I am delighted to see publication of these important results, which were enabled by sharing of expertise and technology between an excellent academic team and our drug discovery group."

Professor of Clinical Pharmacology and Therapeutics Donald Singer said "Adverse effects of drugs can be very serious. Our work shows an unexpected consequence of adverse effects of a drug: providing clues to new causes for disease and new ideas for treatments. There is clear potential to apply these methods to understanding unexplained risks of other medicines".

### **Notes for editors**

The research is published in the Royal Society of Chemistry journal, *Chemical Communications*.

A Chemical Genomics Approach to Identification of Interactions between Bioactive Molecules and Alternative Reading Frame Proteins. Paul C. Taylor, Andrew J. Clark, Andrew Marsh, Donald R. J. Singer, Suzanne Dilly *Chem. Commun.*, 2013, DOI: 10.1039/C3CC44647F

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### **About SEEK**

Founded in 2004, SEEK (previously known as PepTcell) is privately-owned and funded, with headquarters in London, UK. SEEK brings safe and low costs medicines to the patients as quickly as possible. It does this by modifying existing medicines to improve their efficacy within current label, dose and regime, by changing the indication but keeping the dose and dosing regime the same or by creating a new medicine when the previous options are unavailable.

Additional information about SEEK is available on the Company's website located at [www.seekacure.com](http://www.seekacure.com)