

'Better detection' for Alzheimer's and cancers

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A new chemical discovery will lead to better monitoring and treatment for cancers and degenerative diseases, according to latest research by scientists.

In a paper published today in *ChemComm* an international team of researchers from the Universities of Birmingham, Bath and the East China University of Science and Technology in Shanghai outline a new approach to detecting 'reactive oxygen' using fluorescence.

Reactive oxygen, which includes peroxides or oxygen ions, causes cell damage and degeneration in the body and its presence in high doses can be a sign of diseases such as Alzheimer's or cancers. The importance of reactive oxygen has led researchers to find new approaches for its quick and simple detection.

This latest research paves the way for new systems to detect changes in reactive oxygen levels which could help target interventions. Mapped using fluorescent imaging, the concentration of reactive oxygen in cells and tissue would light up which will help better understand and monitor disease development and intervention. Using fluorescence probes it will be possible to perform whole body imaging, making it possible to monitor in situ tumour development in real-time.

Dr John Fossey from the School of Chemistry at the University of Birmingham said: 'This most recent project has taken the international CASE consortium in a different and exciting direction. Developing a new sensing model based on reactive oxygen has many useful applications in diagnosing and detecting disease.'

Professor Tony James from the University of Bath, commented: 'I am very excited by these new results which have pointed our research in an unexpected yet truly rewarding direction. This work uses 'simple' molecules which are capable of helping doctors understand and diagnose 'difficult' diseases.'

This latest paper has been supported by the Catalysis and Sensing for our Environment (CASE) network between researchers at the Universities of Birmingham, Bath and Shanghai.

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