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News Release

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Hi-tech gains poised to boost quest for life-saving drugs

Advances in technologies are set to transform efforts to find life-saving medicines for diseases such as cancer and Alzheimer's, experts say.

Recent developments – such as the availability of stem cells to screen potential therapies – can complement and enhance traditional approaches, the team says.

The group of leading researchers from across Europe says that previous drug discovery efforts have been held back by using decades-old laboratory models of disease.

Recent advances enable laboratory cells to be grown in three dimensional structures, rather than a flat layer as was previously the case. This offers a better system for testing potential medicines that is more similar to tissues in the body, the researchers say.

Major breakthroughs that mean precise changes can be made to DNA are also helping to create better models of disease.

Advanced imaging techniques that visualize the effects of drug compounds can help to identify the best candidates for patient testing, the team says.

Funding programmes must evolve to encourage scientists to take advantage of alternative and complementary methods, they add.

The researchers call for faster adoption of these new technologies and greater collaboration between scientists and pharmaceutical companies to improve the success rates. Use of these approaches should guide drug discovery investments, they add.

The group of internationally recognised scientists – including researchers from the University of Edinburgh – set out their recommendations in the journal *Nature Reviews Drug Discovery*.

Professor Neil Carragher, Co-Director of the Edinburgh Cancer Discovery Unit at the University of Edinburgh, said: “The development of laboratory models of disease which accurately predict patient outcomes represents one of the most significant challenges in drug discovery research. Recent advances in several technology fields are providing new research tools and opportunities to develop more disease relevant laboratory models. Such investment in these new alternative drug discovery approaches complement existing discovery research

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programs and together they promise to advance these projects towards greater clinical success.”

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