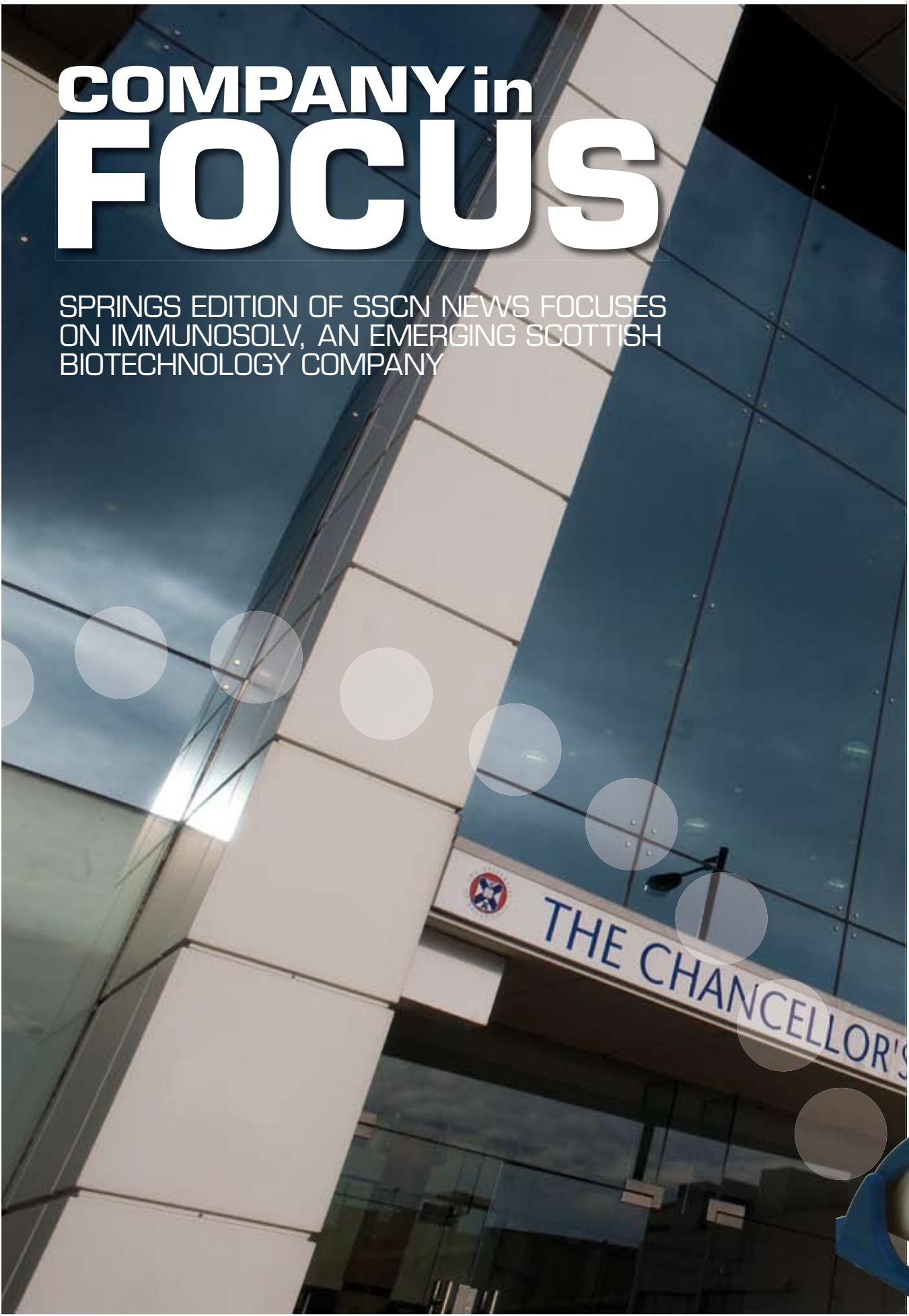


# COMPANY in FOCUS

SPRINGS EDITION OF SSCN NEWS FOCUSES  
ON IMMUNOSOLV, AN EMERGING SCOTTISH  
BIOTECHNOLOGY COMPANY



## New Dead-Cert™ Products for Stem Cell Research

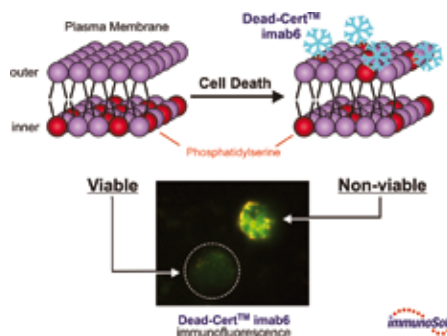
ImmunoSolv is an emerging Scottish biotechnology company that was spun out of the University of Edinburgh College of Medicine and Veterinary Medicine. Located in the Chancellor's Building on the Edinburgh BioQuarter site, ImmunoSolv specialises in cell death, and has developed novel reagents for detection and depletion of cells undergoing programmed cell death (apoptosis) that are readily applicable to stem cell research. Animal or human cells of any type that die by any mechanism, can be discriminated or separated from viable cells using ImmunoSolv's Dead-Cert™ technology.

The capacity to undergo apoptosis is a feature of all cells in all tissues. Apoptotic cells are swiftly, and without inflammatory consequences, removed by phagocytes - a homeostatic process that keeps tissues healthy. Necrotic (dead) cells are not present in normal tissues and are known to cause pathological effects.

Little is yet known about the implications of apoptosis and necrosis in the stem cell arena, mainly because the tools to study this process effectively have not been available - until the development of ImmunoSolv's Dead-Cert™ products. These products now allow scientists to detect and deal with cell death for the benefit of their research.

## Detecting Cell Death Efficiently with Dead-Cert™ imab6

When cells die, they lose phospholipid asymmetry before their plasma membranes become permeabilised to vital dyes, such as trypan blue or propidium iodide. Simple viability assays that use vital dyes are therefore inaccurate. Anionic phospholipids such as phosphatidylserine become exposed on the surface of dying cells and are accessible to binding by ImmunoSolv's Dead-Cert™ imab6.



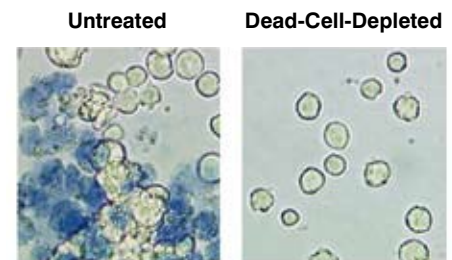
Dead-Cert™ imab6 is a monoclonal antibody that detects dying cells from the early stages of apoptosis to the late stages of necrosis. In combination with vital dyes that enter cells with leaky membranes, Dead-Cert™ imab6 can be used to discriminate between viable, dying (apoptotic) and dead (necrotic) cells. The antibody has many applications on many platforms. In the context of stem cell biology, for example, Dead-Cert™ imab6 can be used effectively to detect cell death that occurs during embryoid body development.

## Depleting Dead Cells with Dead-Cert™ Nanoparticles

Mimicking the action of phagocytes in normal tissues, the latest tools to deal with cell death are ImmunoSolv's Dead-Cert™ Nanoparticles - simple and highly effective devices that can be used to remove non-viable cells from cultures with the aid of a simple magnet. Dead-Cert™ Nanoparticles are super-paramagnetic particles that, via their proprietary surface coating, are capable of binding selectively to dying cells, dead cells and cell debris. This negative selection method, which can be carried out rapidly in the cold or at physiological temperature, leaves viable cells 'untouched', allowing researchers to get the best out of their cell

populations. Dead cells have numerous negative influences on cultures, assays and biochemical preparations, and Dead-Cert™ Nanoparticles provide new opportunities for acceleration in all areas of research in which cells are used.

Dead-Cert™ Nanoparticles have numerous applications that can support stem-cell research, including: (1) improving the viability of cells, and their growth, following frozen storage, transport, transfection or drug selection; (2) enhancing the sensitivity of cell-based assays; and (3) allowing isolation of better quality of RNA from cell preparations. ImmunoSolv has already shown that the quality of preparations of embryonic stem cells can be markedly enhanced following dead-cell removal, and cell growth can be significantly improved following a single dead-cell depletion. Furthermore, Dead-Cert™ Nanoparticles can remove dead cells that are present in significant numbers in embryoid bodies.



**Disaggregated Embryoid Bodies (dead cells blue)**

To learn more about the science behind Dead-Cert™ technology, including its application to studies of stem-cell biology, visit [www.immunosolv.com](http://www.immunosolv.com)

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