

MICA BioSystems is excited to introduce **Dynascreen™**, our innovative **dynamic** Caco-2 drug screening assay. The Caco-2 assay is the gold standard for *in vitro* drug permeability assessment throughout the pharmaceutical industry. This assay, however, has weaknesses and does not mimic the *in vivo* environment where peristalsis plays a key role in absorption of compounds into the gut. We have developed a new DYNAMIC Caco-2 assay which is simple and easy to align with the current protocols for drug screening using multiple Caco-2 assays.

Keele University results have demonstrated that:

- Dynamic drug absorption in Caco-2 cells can be up to 150 % greater than static absorption assays
- Phase 4 compounds which shows limited absorption in static assays show absorption in our DYNASCREEN assays

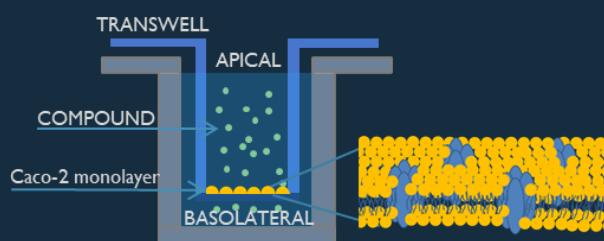
Dynascreen™ is the first dynamic Caco-2 drug screening assay of its kind to better predict *in vivo* human drug absorption rates.

WE ARE NOW SEEKING TO DEVELOP PARTNERSHIPS WITH PHARMACEUTICAL COMPANIES AND ADME CROs TO BRING THE DYNASCREEN ASSAY TO THE MARKET.

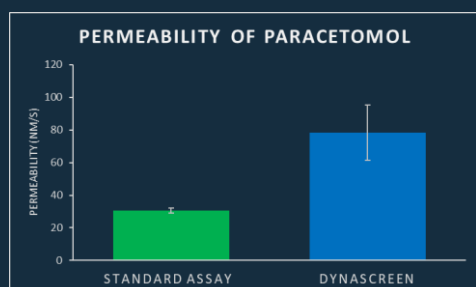
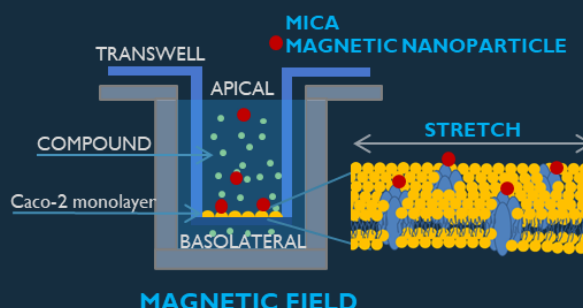
How it works...

The dynamic element of this assay is achieved using a novel patented technology known as **MICA**. Customised magnetic nanoparticles (MNPs) are attached to certain attachment points of the Caco-2 monolayer and stimulated using the **MICA Magnetic Force Bioreactor**. The attached MNPs respond to the application of a magnetic field which acts to stretch the membrane at a defined frequency similar to that *in vivo*. **Important to note that the addition of the dynamic force requires very little deviation from the standard assay and can therefore be easily and simply incorporated into any Caco-2 assay with relatively little capital investment.**

Standard Caco-2 Assay



Dynascreen



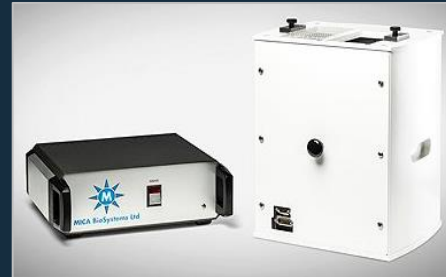
DYNASCREEN HAS BEEN TESTED IN A CRO ENVIRONMENT AND SHOWN TO BE ROBUST AND REPRODUCIBLE.

Custom Built Instrumentation....

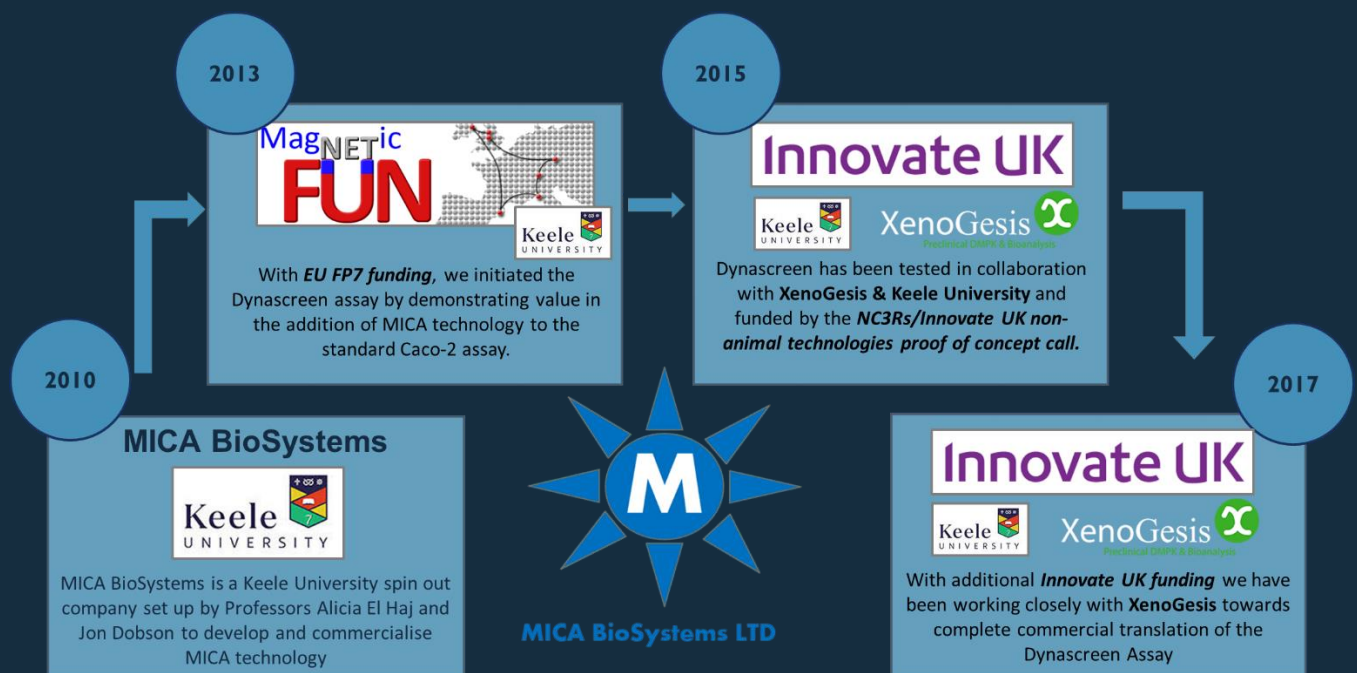
MICA BioSystems has developed purpose-built instrumentation to support the commercial translation of the Dynascreen assay. The kit consists of a **Magnetic Force Bioreactor** designed in partnership with LG MOTION to deliver the oscillating magnetic field and accompanying functionalised **Magnetic nanoparticles**.

MAGNETIC FORCE BIOREACTOR

- ✓ Aligned to standard tissue culture plates.
- ✓ Force applied at a cellular level.
- ✓ Customisation of stress profile
- ✓ Compact



Our Story....



MICA BioSystems LTD

For further information, please get in contact with a member of our team, we'd love to discuss partnership or commercialisation options further.

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