

Pioneering Microfluidics Technologies to Treat Pregnant Populations

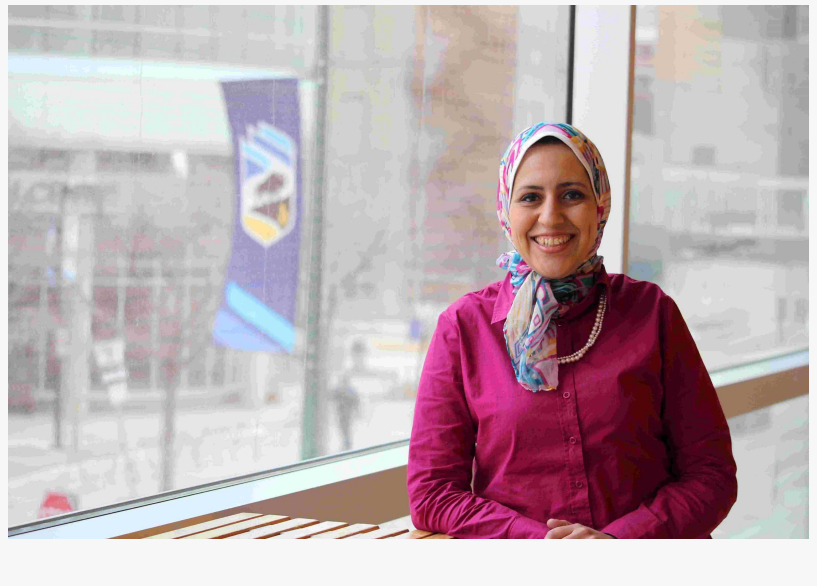
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[/EINPresswire.com/](https://www.einpresswire.com/) -- A research group at the University of Manitoba is using microfluidics technologies from Dolomite Microfluidics to design and evaluate novel nanoparticle drug delivery systems for the safe and effective treatment of diseases during pregnancy. The laboratory has developed an innovative microfluidics model to mimic the structure of the placenta and is using this system to assess the potential of new nanoparticle-based therapies for serious congenital diseases, such as diaphragmatic hernia.

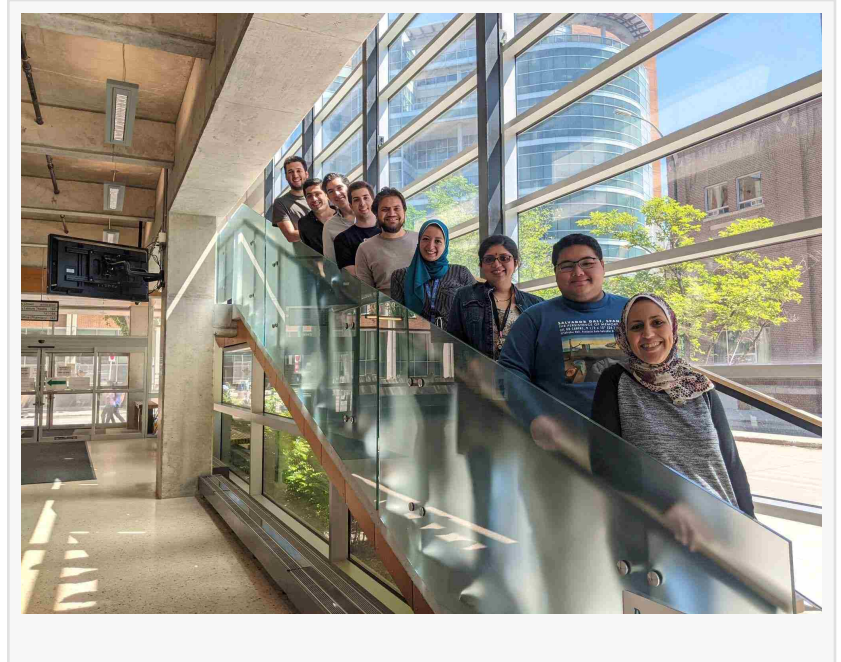
Nanomedicines have huge potential for prenatal therapeutics, because nanoparticles can be engineered to selectively target maternal or fetal tissues. Dr Hagar Labouta, Assistant Professor in the College of Pharmacy at the University of Manitoba, explained:

“The efficacy of nanoparticle systems for targeted drug delivery has already been demonstrated in a wide range of infectious diseases and cancers, but its use in pregnant populations has been limited. We are pioneering the use of nanotechnology for the precise delivery of microRNA therapies in pregnancy.”

Implementing microfluidics technologies has helped the researchers to replicate the unique physiology and pharmacology of the placenta. Hagar continued: “A woman’s placenta differs from that of other species, and changes dynamically throughout pregnancy. To develop safe and effective therapeutics, we must therefore focus not only on drug development, but also on developing a model that replicates the gestational environment. We use microfluidics chips to



culture placental cells and matrices on a microscale, creating a dynamic model that allows us to investigate how nanoparticle medicines interact with this biological barrier. The Dolomite Microfluidics system provides a flexible platform that can be used to develop novel nanoparticle drug delivery systems to treat a range of diseases. Looking to the future, this will enable us to improve maternal health and pregnancy outcomes on a larger scale.”



For more information, visit www.dolomite-microfluidics.com.

About Dolomite Microfluidics

Established in 2005, Dolomite Microfluidics has grown to be the world leader in the design and manufacture of high quality innovative microfluidic products.

The company offers a range of microfluidic systems, components and specialist chemicals – including pumps, chips, connectors, temperature controllers, sensors, accessories and custom-made components – as well as software for analysis or automation.

Modularity, ease of use, innovation and scalability are common to all Dolomite Microfluidics products, which are used across a broad range of applications in biology, drug discovery, chemistry, food, cosmetics and academia.

Dolomite is a part of the Blacktrace group of companies, a world leader in Productizing Science[®], and has offices in the USA, Japan and Hanoi as well as a worldwide network of distributors.

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