

'Jekyll and Hyde' cell may hold key to muscular dystrophy, fibrosis treatment

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A team of University of British Columbia researchers has identified fat-producing cells that possess "dual-personalities" and may further the development of treatments for muscle diseases such as muscular dystrophy and fibrosis.

The team found a new type of fibro/adipogenic progenitors, or FAPs, that generate fatty fibrous tissues when transplanted into damaged muscles in mice. Progenitors are similar to stem cells in their capacity to differentiate, but are limited in the number of times they can divide.

The findings are published in the current issue of [Nature Cell Biology](#).

"These cells are typically dormant in muscle tissues," says lead author Fabio Rossi, Canada Research Chair in Regenerative Medicine. "Once activated by damage, they produce signals that coordinate tissue regeneration and then disappear. That's the Dr. Jekyll side of FAPs.

"In chronic muscle diseases such as muscular dystrophy, however, FAPs persist and may be contributing to over-production of scar tissues, resulting in fibrosis. That's the Mr. Hyde side," says Rossi, associate professor in the Department of [Medical Genetics](#) and the Biomedical Research Centre.

Better understanding of the role of FAPs could help encourage their healthy function or repress their negative impact, the researchers say. In the long term, drugs targeting these cells may be useful in a range of

diseases characterized by fibrosis ranging from cardiovascular to lung and [kidney disease](#), to [organ transplantation](#). In addition, the cells' ability to generate new fat tissue could be exploited to target metabolic disease.

Provided by University of British Columbia

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