UNR may be integral key to treating muscular dystrophy

By Susan Voyles, Reno Gazette-Journal

A cocktail of drugs likely will be the answer to cure people with muscular dystrophy, and a researcher at the University of Nevada, Reno believes the university has developed one of the key ingredients.

Dean Burkin, an associate professor of pharmacology, has been working for a decade to isolate and test a protein called laminin-111 that helps keep muscle cells intact. A patent is pending and has been transferred to Prothelia, a startup company in Massachusetts, to do more studies before the drug can be approved for human trials.

Muscular dystrophies are genetic diseases that cause weakness and muscle wasting mostly in skeletal and voluntary muscles, the muscles the body can control.

“These are Jerry’s kids,” Burkin said, of the children with muscular dystrophy featured in Jerry Lewis’ annual televised fundraisers.

Burkin said he has developed a drug that has shown it can prevent the progression of the disease in mice. He said that the drug, a naturally occurring protein isolated from mouse tumors, also has worked on human muscle cells in a petri dish. The same protein is found in embryonic and kidney tissues of humans.

“It’s like a Super Glue, fusing muscle fiber that breaks down and degenerates,” Burkin said.

If successful in human trials, the drug could be combined with others to block the major pathways to the disease, he said.

With more than 40 different types of muscular dystrophy, Burkin and others said there will be no single cure.

Jim Brown, Muscular Dystrophy Association public relations vice president in Tucson, Ariz., said several drugs now are in human trials, and several more might soon get the green light. One drug, for instance, coaxes cells to ignore part of the dystrophin gene. Another research group is seeking children to test a drug that has been shown to improve blood flow in the muscles of mice.

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