

EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]: State in layman's terms the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California. Do not include proprietary or confidential information. This may be distributed before the funding decision has been finalized.

Ehlers-Danlos Syndrome type IV (EDS IV) is a disease marked by defects in skin and joints and in often life-threatening propensity to rupturing of the large arteries. The disease affects both men and women. Reports have shown that pregnant women afflicted with the disease have a 25% chance of death from the arterial ruptures during labor. There are reports of greatly increased chances of stroke, heart problems and other life-threatening circulatory problems. Reports exist of increased "sudden infant death syndrome" as well. The *rol-6/COL3A1* gene is mutated in EDS IV. In an animal model, we have found that a mutation in the version of the *rol-6/COL3A1* gene causes defects in the skin of the animal. By inhibiting the activity of another gene, *zig-7*, we found that we can correct these defects. Our aim is to understand how the *zig-7* gene interacts with either the *rol-6/COL3A1* gene directly or in combination with other genes similar to the *rol-6/COL3A1* gene. This will shed light on not only how a normal *rol-6/COL3A1* gene works but also how a mutant *rol-6/COL3A1* gene manifests itself in a genetic defect as well.