

Scientists at UW-Madison moving toward new cancer treatments

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UW-Madison scientists have made a discovery that opens up new avenues for investigating potential cancer treatments.

Their work centers on the p53 protein, which is described as “the guardian of the genome.” In its unmutated form, it protects against cancer — but when mutation occurs, the protein has the exact opposite effect.

That’s according to Richard Anderson, one of the researchers who recently authored a study focused on this protein. He and co-author Vincent Cryns published their findings this week in the scientific journal *Nature Cell Biology*.

According to Anderson, the gene responsible for p53 is the most frequently mutated gene in cancers. In its normal state, the protein repairs DNA after damage from ultraviolet radiation, chemicals or other causes. But when the protein itself becomes mutated, it “goes rogue” and leads to many different cancers.

The study describes a newly identified regulator of the p53 protein. When this regulator molecule interacts with p53, it starts a reaction that stabilizes the protein. In this more stable form, the protein builds up in the body and causes cancer, including very aggressive forms of the disease.

In the study, researchers showed that when the pathway for this regulator was disrupted, mutated p53 didn’t accumulate.



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