

What about the case of small molecules binding to proteins that activate function? Now perhaps this is a little bit more mysterious. It seems more intuitive how a small molecule could bind to a protein and inactivate it. On the next animation, if we could roll that one please, you're going to see that the blue protein is a human protein called FKBP12, the purple protein is called FRAP. These two proteins normally do not interact with each other, you'll hear more about them later, when I talk about nutrient sensing. The small molecule you've seen before is rapamycin, it has high affinity for FKBP12, binds tightly to it, and in so doing, it creates a composite surface, a new surface that activates the blue protein to bind the purple one. So previously, FKBP12 was unable to bind the purple one, but by rapamycin binding to it, it creates this composite surface, that now interdigitates with the purple FRAP protein, an illustration of how small molecules can activate function.