Uncovering pathway that makes steroid hormones fast and efficient

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How can the group of chemicals known as steroid hormones cause almost instantaneous changes in your body, like hydrocortisone inhalers with asthma? In an interview with UC Science Today, UC Berkeley researcher Polina Lishko mapped out the rapid route taken by progesterone, a female sex hormone, to trigger what's called the "power kick" in sperm that leads to fertilization. This pathway may explain how similar hormones act everywhere from the brain to the lungs.

"Basically, we uncovered the universal pathway, how steroid hormones can alter the function of our organisms in quite a fast and efficient way. So the classical mechanism of how a steroid hormone functions implies that they should alter the function of our genomes, which would result in the cell changing, how the cell produces proteins. It's a very slow mechanism."

But Lishko found that steroid hormones can change the physiology of the cell within milliseconds to seconds. They're hoping a similar approach will shed more light on the pathways of other common steroid hormones, like estrogen and testosterone.

Provided by University of California - Berkeley