

Study looks at creation of leaf patterns

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University of Alberta scientists say they have determined, in part, how patterns on leaves are formed.

"For years people have been trying to understand this beautiful formation," said Enrico Scarpella of the U of A's Department of Biological Sciences. "We were able to connect the mechanism responsible for the initiation of the veins in the leaf with that of formation of the shoot and root.

"With our piece of the puzzle added," he said, "it indeed seems the same mechanism is responsible for all these events."

What Scarpella and his research team discovered has interested scientists around the world. It has been known for several years that a hormone called auxin stimulates the formation of the veins.

"However, the theory argued that in each individual vein, auxin could only run one way at any given time, making them sort of alternate one-way street," Scarpella said.

By labeling the protein that transports auxin with a fluorescent tag, he could watch how auxin was transported during vein formation. That approach allowed the team to identify cells within individual veins that transport the hormone auxin in two opposite directions.

The study is detailed in the journal *Genes and Development*.

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