THE VICTOR CHANG
CARDIAC RESEARCH INSTITUTE

MEDIA RELEASE

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Hairy baggage carousel: the key to left-right orientation in baby development

Scientists have found a new mechanism that gives the body its left and right orientation during early embryo development. The key is a hairy baggage carousel that carries signaling molecules in the embryo.

On the outside, humans are fairly symmetrical along the axis running down the front of their bodies. But on the insides, humans are not at all symmetrical. The heart and spleen are on the left side, the liver is on the right, the left and right lung lobes are different in number and shape, and the blood vessels from the heart to the rest of the body are all over the place.

But what causes this left-right orientation, or laterality of organs? Dr Nobutaka Hirokawa from the University of Tokyo, has discovered an entirely new mechanism by which cell communicate during early embryo development that may underlie laterality.

He found that during early development, a signaling molecule filled sac-like structure, is transported to the left side of the embryo axis by cilia, or cellular hair, more or less like a cellular baggage carousel. Once in place the sac releases its signaling molecule load, which triggers a cascade of events leading to the left-right orientation of organs that are developing in the embryo.

Dr Hirokawa is presenting his findings at the 15th International Society of Developmental Biologists Congress in Sydney this September, organized by scientists from the Victor Chang Cardiac Research Institute.

For more information and to arrange access to Dr Hirokawa's talk and interview him at the Congress, please call Samantha Lucia – Communications and Marketing Manager- VCCRI on 02 8382 8415 or 0415 140 595