

**7.72 Left-Right Axis**

**9.27.06**

types of symmetry

left right axis

organs asymmetric across LR axis

laterality

situs solitis

situs inversus

isomerism

heterotaxia

chirality

theories of LR asymmetry

- 1.
- 2.
- 3.
- 4.

LR asymmetrically expressed genes

ActR11a

Shh

HNF-3 $\beta$

Nodal

Pitx

Gap junctions

Unidirectional gap junctions

Ion flux

Ion pumps

Ion channels

Membrane potential

Pharmacological screen

H<sup>+</sup> pump

K<sup>+</sup> channel

Serotonin

Node

Cilia