

The Organizing Properties of Hypostome

By inserting small pieces of hypostome tissue into a host hydra whose cells were labeled with India ink (colloidal carbon), Broun and Bode found that the hypostome induced a new body axis and that almost all of the resulting head tissue came from *host* tissue, not from the differentiation of donor tissue (Figure 1A). In contrast, when tissues from other regions (such as the subhypostomal region) were grafted onto a host trunk, a head and apical trunk of a new hydra formed from the grafted *donor* tissue (Figure 1B). In other words, only the hypostome region could alter the fates of the trunk cells and cause them to become head cells. Broun and Bode also found that the signal did not have to emanate from a permanent graft. Even transient contact with the hypostome region was sufficient to induce a new axis from a host hydra. In these cases, *all* the tissue of the new axis came from the host.

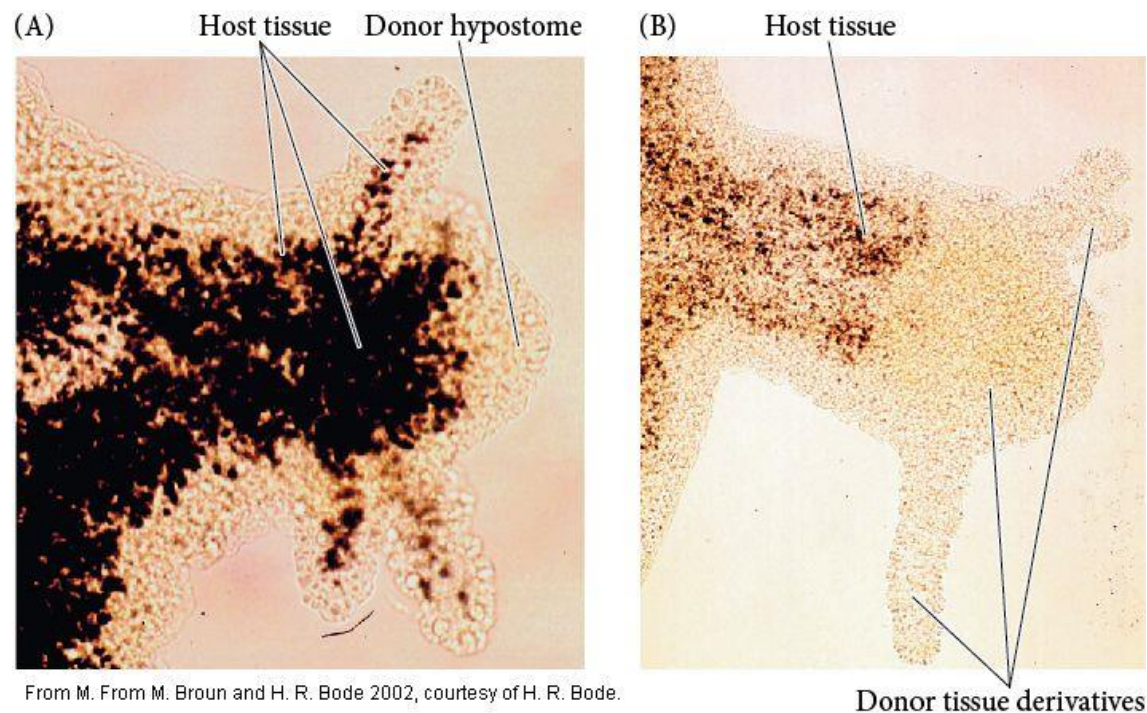


Figure 1 Formation of secondary axes following transplantation of head regions into the trunk of a hydra. The host endoderm was stained with India ink. (A) Hypostome tissue grafted onto the trunk induces the host's own trunk tissue to become tentacles and head. (B) Subhypostomal donor tissue placed on the host trunk self-differentiates into a head and upper trunk.

Literature Cited

Broun, M. and H. R. Bode. 2002. Characterization of the head organizer in hydra. *Development* 129: 875–884.

[PubMed Link](#)

All the material on this website is protected by copyright. It may not be reproduced in any form without permission from the copyright holder.

© 2023 Oxford University Press |