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We use *Drosophila* and mammalian neural stem cells (NSCs) to model neurodevelopmental disorders and brain tumours.


NSCs are crucial for the development, regeneration, and repair of the nervous system. The delicate balance between NSC quiescence and activation is important for adult neurogenesis and NSC maintenance. We and others are establishing *Drosophila* NSCs as a model system to elucidate the disease mechanisms underlying neurodevelopmental disorders. Currently, we are interested in addressing the following key questions: What are the intrinsic mechanisms underlying NSC reactivation? What are the molecular signatures of quiescent NSCs? What are the extrinsic signals “waking up” quiescent NSCs?


We and others have established *Drosophila* larval brain neural stem cells as a model for stem cell self-renewal and tumorigenesis. Our work demonstrated a causal link between deficits in NSC asymmetric division and the formation of brain tumours in *Drosophila* models. Currently, we are interested in addressing the following key questions: What mutations trigger neural stem cells to become cancer stem cells? How asymmetric divisions of neural stem cells are regulated? What are the mechanisms that prevent more mature cells from dedifferentiating back into neural stem cells?

Prof Wang is an elected EMBO Associate Member (2020), recipient of Singapore National Academy of Science Young Scientist Award (2008) and National Research Foundation (NRF) Research Fellowship (2009-2014). She is Associate Editor of PLOS Genetics, Asia-Pacific *Drosophila* Board member and executive member of Stem Cell Society Singapore.

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