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## Casein Kinase 2

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In the Litchfield lab, we research Casein Kinase 2 (CK2), a protein kinase which is implicated in the development of various cancers and neurological diseases. Protein kinases mediate cellular signalling via the transfer of a phosphoryl group, a chemical modification, onto downstream proteins in a process known as phosphorylation. CK2 is a master regulator of biological cell processes and is therefore involved in much of the cellular signalling that takes place. However, this CK2-dependent cellular signalling is often disturbed and pathologically rewired in diseased cells.

My research involves identifying genuine downstream substrates (i.e. protein targets) of CK2 phosphorylation. By identifying genuine substrates of CK2, it is then possible to monitor cellular CK2 activity and learn more about its role in cellular signalling. This would then allow us to monitor patient response to CK2-targeted therapies and to evaluate novel CK2 inhibitors.