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Protein-protein interaction networks in disease

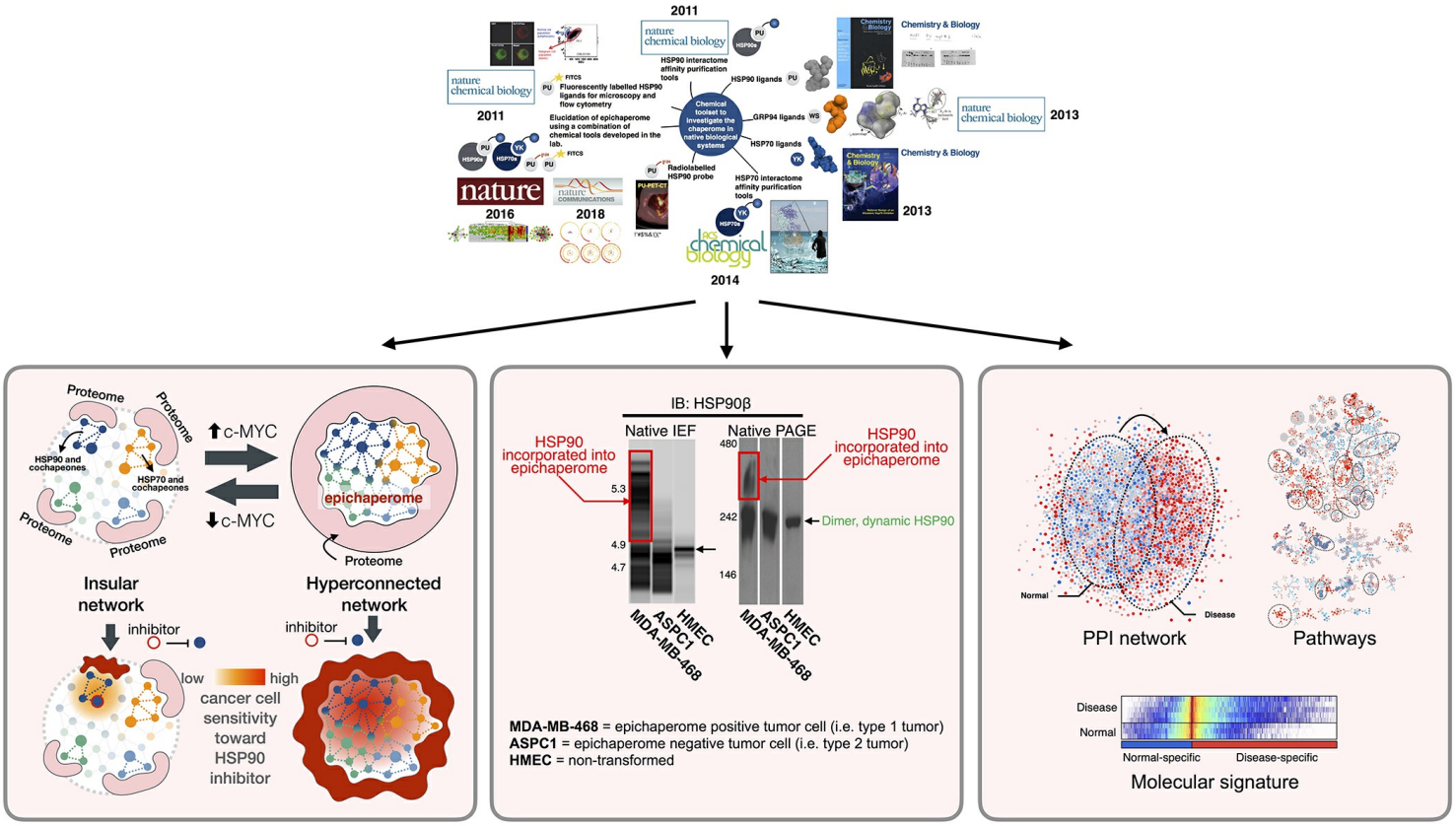
Understanding adaptive responses to stressors and how these differ between normal and diseased tissues remains unsatisfactorily addressed. A key to addressing this unresolved biological question is to study how stressors impact tissue-specific 'interactomes', the intricate proteomewide cellular networks of proteins linked through interactions. In this context interactomes are maps of how stressors, including genetic lesions, proteotoxic and environmental insults, individually or combined, alter protein-protein interaction (PPI) networks and perturb the system as a whole.

Our program takes advantage of properties of protein-protein interaction networks (i.e. interactome networks) to understand, diagnose and treat diseases, such as cancer and neurodegenerative diseases.

It aims to investigate the identity and the architecture of interactome networks in cells exposed to chronic molecular and environmental stressors with the goal of understanding disease mechanisms and identifying vulnerabilities.

It aims to take advantage of these vulnerabilities to discover and develop drug candidates, biomarkers, diagnostics and treatment strategies.

Our ultimate goal is the translation of our discoveries from bench to bedside.



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