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My Research:

Our lab studies the non-apoptotic functions of caspase-8 and caspase-2. My work has shown that there are non-apoptotic functions for caspase-8 in both normal and tumor cell lines. Specifically, we found that caspase-8 promotes cellular migration, adhesion, and Rac activation. Subsequently we also found that when caspase-8 is phosphorylated it interacts with the p85 subunit of PI3K. This interaction/phosphorylation allows for cell adhesion, migration and Rac activation. We have also shown that non-apoptotic functions exist for caspase-2, namely the promotion of cell-matrix adhesion, focal contact formation, FAK phosphorylation, and stress fiber dissolution. These findings demonstrate a non-apoptotic function of a caspase involving signaling protein interactions rather than proteolysis. We were also the first to report that caspase-2 and caspase-8 may mediate cytoskeletal functions independent of cell death.