

Serine proteases as initiators of intracellular signalling

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It has long been recognized that serine proteases initiate cellular changes. However it was not until the identification of the "protease activated receptor" (PAR) family in the 1990s that many of these changes could be explained at the molecular level. Using calcium flux and ERK activation assays and microscopy approaches we have shown that a recently identified serine protease signals *via* a member of the protease activated receptor family. Interestingly it also appears that cellular changes induced by this serine protease occur *via* a non-PAR mediated pathway. This result and our work, and that of others, on the cancer associated transmembrane protein SIMA135, suggest that there are non-PAR cell surface proteins which function to transduce extracellular serine protease initiated signals across the plasma membrane. This proposal is consistent with the plethora of known cell surface serine protease targets.