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► **COVER:** 'Pass it on' by Neil Smith, inspired by the Perspective on p238.



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Any scientist will know that teaming up with other experts in the field can be of huge benefit in achieving the best results. Collaborative behaviour between molecules and cells of the immune system is clearly evident too. In this issue, two Reviews provide excellent examples of such teamwork in the immune system.

On page 179, Giorgio Trinchieri and Alan Sher describe how multiple Toll-like receptors (TLRs) and other pattern-recognition receptors work together to ensure that the most effective immune response is triggered against an invading pathogen. Indeed, stimulation of a single TLR is rarely sufficient to trigger effective host resistance, whereas the collaboration of multiple receptors that activate distinct signalling pathways can be effective at eliminating infection. A greater understanding of such cooperation should provide a basis for the development of better adjuvants and immunotherapeutic regimens.

On page 191, Christian Rommel and colleagues indicate that the phosphoinositide 3-kinases PI3K δ and PI3K γ cooperate in promoting optimum cellular responses, such as the generation of reactive oxygen species by neutrophils and the release of granules by mast cells. The action of these kinases seems to be coordinated at different stages of signalling in these cells, and so they might work as partners in the integration of signalling pathways downstream of various extracellular stimuli. This Review is accompanied by a Poster, which is freely available online (<http://www.nature.com/nri/posters/pi3k/index.html>) thanks to the generous support of Merck Serono International S.A. It depicts the important roles of PI3Ks in relaying signals downstream of numerous immune-cell receptors to mediate a multitude of cellular responses.

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