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Chemokines and their receptors are key regulators of leukocyte migration and intra-tissue accumulation under both homeostatic and inflammatory conditions. Regulation of chemokine-dependent responses, particularly those relating to inflammation, is essential to avoid the development of inflammatory and autoimmune pathologies. Recently, a new subfamily of chemokine receptors referred to as the 'atypical' chemokine receptors has emerged, members of which have been shown to play important roles in controlling *in vivo* chemokine biology. Here we review the basic biology of the chemokine and chemokine receptor family, introduce the topic of 'atypical' chemokine receptor biology and focus specifically on the best-characterized of the 'atypical' chemokine receptors, D6. D6 is a 'scavenging' receptor for inflammatory CC chemokines and plays a central role in the resolution of *in vivo* inflammatory responses. We describe the biology, biochemistry and pathological relevance of D6 and outline emerging data suggesting that it has additional important roles in integrating innate and adaptive immune responses.