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A peptide dimer (orange) that mimics erythropoietin hormone (EPO) binds two equivalent EPO receptor extracellular domains (blue) and produces the signal necessary to stimulate production of red blood cells. The crystal structure of the complex identifies one functional mode of receptor dimerization. The peptide interaction with a functional epitope on each receptor is a basis for the design of small-molecule EPO mimetics. See page 464 and the related Research Article (page 458) and Perspective (page 449). [Image: M. Pique, O. Livnah, and I. A. Wilson]

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