How IGF-1 activates its receptor

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Received: 19 January 2015 / Accepted: 19 January 2015 / Published online: 26 February 2015
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Abstract This study presents a new model for IGF-I receptor activation in which the transmembrane domains are held apart until ligand binding brings them together in an activated state.

Keywords IGF-I receptor · Transmembrane domain · Autoinhibition · IGF binding

How the heterotetrameric insulin and IGF-I receptors respond to their ligands has been a subject of great interest since the pioneering work of De Meyts, Siddle, Whittaker and others, and the structural studies from the laboratory of Colin Ward and Mike Lawrence. This study by Kavran et al. 2014 uses biochemical and biophysical techniques to develop a new model for IGF-I receptor activation in which the extracellular

domain inhibits receptor activity in the absence of ligand by holding the transmembrane domains apart, the autoinhibition being released upon ligand binding, to bring the transmembrane domains together in an activated state. This is a novel view of receptor activation which may not be the final word, but nevertheless makes a valuable contribution to understanding how these important receptors function.

Reference

Kavran JM, McCabe JM, Byrne PO, Connacher MK, Wang Z, Ramek A, Sarabipour S, Shan Y, Shaw DE, Hristova K, Cole PA, Leahy DJ (2014) How IGF-1 activates its receptor. *Elife* 3. doi: [10.7554/eLife.03772](https://doi.org/10.7554/eLife.03772)

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