

Name of journal: *World Journal of Biological Chemistry*

ESPS Manuscript NO: 16502

Manuscript Type: Review

STAT3 regulation by novel binding partners

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Abstract

Signal transducers and activators of transcription (STATs) mediate essential signals for various biological processes, including immune responses, hematopoiesis, and neurogenesis. STAT3, for example, is involved in the pathogenesis of various human diseases, including cancers, autoimmune and inflammatory disorders. STAT3 activation is therefore tightly regulated at multiple levels to prevent these pathological conditions. A number of proteins have been reported to associate with STAT3 and regulate its activity. These STAT3-interacting proteins function to modulate STAT3-mediated signaling at various steps and mediate the crosstalk of STAT3 with other cellular signaling pathways. This article reviews the roles of novel STAT3 binding partners such as DAXX, ZIPK, KAP1, Y14, PDLIM2 and STAP-2, in the regulation of STAT3-mediated signaling.

Key words: JAK/STAT; Signal transduction; STAT3; DAXX; ZIPK; KAP1; Y14; PDLIM2; STAP-2; NF- κ B

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